

# Art and climate (change) perception : Outline of a phenomenology of climate

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[Article first published in “ Art and climate (change) perception “, in Sacha Kagan et Volker Kirchberg (ed.),  
*Sustainability: a new frontier for the arts and cultures*,  
Frankfurt a. Main, Verlag für Akademische Schriften, 2008, pp. 242-261]

For Carolina..

## Introduction

*Climate change* is a complex phenomenon and a concept which can be found nowadays in various fields such as science since the end of the 1970s<sup>1</sup>, politics and international law since the 1990s (Earth Summit in 1992 and the 1997 Kyoto Protocol), and, more recently, religions since there are now theological interpretations (justifications) of global warming.<sup>2</sup> One may feel helpless by such a concept omnipresent in media discourses and which vaguely refers to an end of our world. Our belief is that the phenomenon needs to be analysed in a transdisciplinary approach in order to get a better and deeper understanding of its complexity and reality.

Western societies have progressively dissolved their ancestral link to climate, a link that was critical: the quest for food. This is largely a result of massive urbanization and the development of the modern lifestyle. It has been possible to observe a deterioration of sensitivity to meteorology and climate. Today, very few professions still reveal a direct relationship to climate; our intuitive understanding of it is thus weakened. Artificial indoor climates have given us a sort of second *skin* but also leveled our general experience of climate. Until recently, in consumer societies, the weather forecast has mainly been used for the organization of one's leisure, and "talking about the weather" has a social function. It is no surprise, then, that the science of meteorology is still believed to be one of the last "objective" sciences. Thus the divide is growing in our consumer societies between our extended knowledge of climate change and our relatively limited experience of the phenomenon.

For such reasons, it seems obvious that climate change should not be apprehended through the sole climate models used by scientists. We need to get a deeper and more comprehensive experience of the phenomenon. It cannot remain out of our sphere of experience. And yet we notice that this phenomenon is beginning to interest the contemporary art scene. Climate change has been used recently as a concept by various cultural programmers and artistic directors.<sup>3</sup>

Art could help us questioning our perceptions and relationships to climate and its modifications. Artistic explorations should not be restricted to *illustrating* our scientific discoveries as in contemporary climate change showcases. Indeed, Science Museums have experienced new ways of diffusing scientific discoveries through techniques of immersion as in the climate change exhibition entitled *Climax* in Paris in 2003 at the *Cité des Sciences et de l'Industrie* de la Villette.<sup>4</sup> These new techniques induce, in the case of *Climax* for example, more a logic of cultural production rather than of scientific popularization since the aim of the exhibition is to have the visitor experience an emotional "climate shock"<sup>5</sup>. Instead, a work of art may help us to experience and reveal our inner participation with climate, the rupture of its

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<sup>1</sup> Flannery (2005)

<sup>2</sup> For example, refer to statements by American Evangelists after hurricane *Katrina*, in Hétu (2006).

<sup>3</sup> Various exhibitions have been organized recently around that topic : the *Art and Climate Change* exhibition (Natural History Museum, London, 2006), an online video exhibition in 2007 entitled *New Climates* (<http://shanebrennan.net/climate/about/>), the *Weather Report : Art & Climate change* exhibition (Boulder Museum of Contemporary Art, 2007), etc. This is only a small account of various initiatives, lectures and exhibitions which have been organized recently.

<sup>4</sup> For more information about immersif environments used to illustrate and provide the visitor a direct experience of climate change, refer to Devarco.

<sup>5</sup> But, these showcases reveal an interesting potential and innovations which in the case of Climate change aim at involving the visitor of the exhibition and at promoting his own perception of the phenomenon in the presence of other visitors. For more information refer Belaën (2004).

balance and its meaning for our inner world, in the same way as landscape artists who reframed the relationship of humans to their environment. Art questions the status of our perception of the phenomenon by deconstructing our common perception and revealing other possible perceptions of it.

In this article, we will try to *outline* a phenomenology of climate (first part) and climate change (second part) by referring to some aspects of artistic perception in this field. However, this presentation is not intended as an overview of the climate (change) perception in the contemporary art scene.

## **I. What is climate ? Outline of a phenomenology of climate**

A phenomenology of climate should allow us to differentiate our climate approach and to sharpen up our sensations thus facilitating communication on the subject.

### **General approach of climate**

Such a phenomenology will try to characterize our physical sensation of climate rather than its scientific determination. Indeed, *what* are we sensing as being climate?

### **Climate in phenomenological research**

Surprisingly, phenomenological research has only recently concentrated on natural atmospheric phenomena. Since the end of the 1960s a phenomenology of atmospheres has been developed in Germany but it didn't analyze the natural climate as an atmospheric phenomenon and rather concentrated on *ambiances* (« artificial » indoor ambiances) and *feelings* (taste and atmosphere).<sup>6</sup> Only recently a phenomenology of weather has been outlined.<sup>7</sup> This phenomenology is a very interesting field to be further developed. It would need, for example, a phenomenology of large meteorological time, i.e. climate, which *latently* always englobes and contains meteorological sensations. We will refer to this point later.

### **Climate as a landscape**

From a scientific point of view, climate can be divided into various series of meteorological parameters such as temperature, air pressure, humidity, wind force, etc. However, it seems impossible to conceive it as a totality except in subjective terms.<sup>8 9</sup> Climate exists as such only for a corporal and sensitive being and can be regarded, phenomenologically speaking, as

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<sup>6</sup> Böhme (1995, 1997, 1998), Schiemann (1997), Schmitz (1993, 1996, 1998, 2002, 2005), Sloterdijk (2004), Tellenbach (2002)

<sup>7</sup> Böhme (2003), Schmitz (2003)

<sup>8</sup> We follow here the analysis of Gernot Böhme in his phenomenology of weather and apply it to climate: cf. Böhme (2003).

<sup>9</sup> Of course, from a system sciences oriented point of view, climate is of course conceivable as a totality, and the whole earth climate as one complex system (e.g. with El Niño). But phenomenology and system sciences approaches radically diverge, and don't share the same premises and objectives. Through phenomenology we try to approach climate through sensitive perceptions.

a *landscape*.<sup>10</sup> Landscape does not exist in nature without the eye which grasps an expanse of land as a landscape. Climate's existence is similar. The perception of climate is the perception of an arrangement, a configuration of the real by a subject; this perception is a certain presentation (and presentification) of an ensemble of natural atmospheric facts embraced and expressed by a sensitive being.<sup>11</sup> Climate is thus a multidimensional phenomenon in which are combined the contributions of nature, culture, history and geography, but also the imaginary and the symbolic.<sup>12</sup>

## Climate and Weather

Prior to further investigation, it is important to distinguish the notion of climate from the one of weather. Roman languages, as French, share the disadvantage *not* to have an equivalent for the word « weather » derived from the ancient Germanic form « weora » and referring to a *temporary state of the atmosphere*. The French word « temps » refers as well to the diachronic time as well as to meteorological time. In German, « Wetter » has given rise to a series of interesting words for characterizing our relationship to the atmosphere such as the adjective « wetterfühlig » expressing our sensitivity to climate or the verb « wittern » which refers to a *sense* or *sensing* of the atmosphere and which exists also in the reflexive form since the 16<sup>th</sup> century : « sich wittern » to signify what is revealing itself atmospherically in the same way as when we say that « something is in the air ».

As said before, « weather » refers to a temporary state of the atmosphere in opposition to « climate » which according to the climate historian Stutcliffe refers to the « summary description of meteorological conditions over a series of years ». From a phenomenological point of view it is the length which matters not the exact number of years. Indeed climate is always sensed as a given form of weather, it is not perceived as an average of weather conditions over a given number of years. Therefore, climate refers to a kind of *large* meteorological time such as seasons. When I say that we have « autumnal weather » this feeling may have been provoked by a sensation of modification of space (in my case autumnal weather is associated with a large light, fresh weather, and an expanding space). But, when I have this kind of reflection (« It's autumnal weather »), I do not *refer* my meteorological sensation (of luminosity and temperature) to a series of past meteorological conditions to realize that I am in autumn. On the contrary, I immediately experience the sensation of stability of meteorological time which is stability of today's meteorological time but also the one of the next days and months. Climate refers to a cultural relationship established progressively between human beings and weather. By means of the seasons, the human being is grasping the broader articulations and a balance of meteorological time. Experiencing a climate (through a season for example), I *take place* in time, weather, and my life. Consciously or not, I do locate myself in time. Therefore, it is possible to state that subjectively the climate experience corresponds to an experience of a *net* of time. What would happen if I could no longer *lean* on time? How would I experience time if it would no longer be *bearing* myself? if I could no longer *rest* in and on seasons? From a scientific point of view, climate is probably a « myth » because, on a larger scale, there is no such thing as a stability of climates. However for human sensations such stability is not a myth at all.

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<sup>10</sup> Gernot Böhme established the analogy between weather and landscape, in Böhme (2003).

<sup>11</sup> We follow here the definition of landscape given by Michel Collot in Collot (2005): 9-17.

<sup>12</sup> As an introduction to historical readings of climate, please refer to Le Roy Ladurie (1983), Coquillas (2005), Duclos (2005) and for anthropological and ethnological readings refer to La Soudière (1987, 1990, 1999), Katz (2002), Pérard and Pérrot (2003).

Seasons refer to the human scale of climates. Towns (Valparaiso for instance) or regions (Brittany) may have their own climates which can be perceived sensitively. Climatologists know many other climates which often remain alien to our sensations. Indeed, the more the geographical and temporal scale of a climate is important (or minimal), the more such a climate becomes unperceivable. As a matter of fact, when do we sense a *continental* climate ?<sup>13</sup> (except the Mediterranean climate which remains immediately perceivable even if it's of continental dimensions).

## **The sensing of climate**

A climate « feeling » or « sensation » always corresponds to an emotional state of the subject, i.e. a climate sensation refers to a mere surface emotion whereas with feeling we dive into ourselves.

## **Climate and feelings**

Feeling climate is feeling life, feeling our life. Climate refers to an experience of a certain constancy of time, this means that it is made of our confidence in this constancy. Climate feeling is *contrasting* our meteorological sensation because through this feeling our affective experience of meteorological conditions resonates with our broader real-life experience. Therefore climate sensing refers to affective tonalities of the different phases of our life. Whereas weather experience is characterized by mere ephemeral sensations, climate experience refers to more indefinite and larger temporalities. Thus, the experience of a plurality of autumns is inherent in my autumnal feeling: for instance, autumn may then remind us of new beginnings associated with the start of a new school year, the time of our projects, the seriousness of our life – as temporary as a season – which tries to project itself ahead. Sometimes, the feeling of autumn may be dominated by one aspect of the weather (for example, a « windy » weather) which then resonates with our dominant feeling (if such) linked to this climate (for example the feeling of uncertainty, the atmosphere of departure and change). This element is then dominating our whole sensation of this kind of climate, it is considered to be representative of it.

I may choose to recall to me very consciously the different autumns of my life and then understand that my « dominant » autumnal feeling does occult other feelings related to this season but which I experienced less often. This would be relativizing my feeling but wouldn't change anything to the fact that climate necessarily opens myself to my inner deepness.

## **Climate as atmosphere**

The feeling of climate is also the feeling of an atmosphere, in other words the feeling of a larger reality. The location of climate sensation is indefinite, i.e. it is in and out of myself at the same time, a situation which is very well expressed by the German word *Stimmung*. As Gernot Böhme (2003) pointed it out about weather feeling, the feeling of climate is also

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<sup>13</sup> However, one could try to develop a phenomenology of the climate perception induced by global tourism industry, which has taken an inter-continental scale, and could relativize the claim about the different scales of climate perception.

sensation of a modification of space with blurred borders. Thus the experience of climate may be characterized by a certain experience of « thickness » or infinite « dissipation », in other words deepness. This deepness, which is at the same time inner and outer deepness, is typical of climate to which we are abandoned and in which life has been woven. It is impossible to *extract* ourselves of climate (without a reflective effort), to « turn around climate », so much climate is *supporting* and *bathing* us at the same time.

Climate, as well as weather, is not experienced from a certain « view point ». At the beginning we have spoken of a possible analogy between climate and landscape. In Western art history, landscape can be characterized by its horizon structure which is also the case of climate. Climate does not have any horizon, but *is* a horizon. Indeed, horizon is not necessarily a visual line referring to the common acceptation of this notion. Climate is horizon in so far as it is atmospheric openness or, more precisely speaking, in so far as climate is opening an atmospheric relation to the world. Therefore, the sensation of climate or weather is coloring our perception of the world. In other words, the climate *inhabits* our perception. The Impressionists had already shown us what perception becomes when it is inhabited by seasons (the four seasons in Monet's series entitled *Le Bassin aux nymphéas*, 1899 and later) or by weather (Monet's *Lilas. Temps gris*, 1872).<sup>14</sup> These paintings reveal us the atmospheric perspective onto the world. This is a perception which is more or less « outside » the subject, that is a perception which is no longer encompassed in a gaze. This perception does not assemble itself in a gaze, it is not a compact and dense perception but a diffuse and peripheral one. I perceive the world merely *laterally*, these paintings literally *disperse* my gaze. Perception does not focus on objects (the bridge and the flowers in *Le Bassin aux nymphéas* do not hold my gaze). It is a *lighter* perception which is less knowing « objects » than « impressions ». It does not try to « burst surface » (Merleau-Ponty about modern painting) but to enlarge the gaze and to reach space in its extension. Maybe we should speak about a less *significant* perception because of a need of lightness and exteriority which is necessary to its deployment. The world is not built from and with objects, it is born in the interdependency of things and the gaze does not take possession of things through their borders but from within their middle.<sup>15</sup> Atmospheric perception is revealed at the surface of things, precisely at their utmost exteriority. It is driven by the intuition of a *larger* reality.

## Experience of climate modifications

Finally, the feeling of climate is always the experience of a modification of climate and a phenomenology of climate should always tackle the issue of our experience of climate modifications. We should for example study our experience in loosing our seasonmarks, our experience of the disappearance of half seasons or interpolated seasons, etc.

Our experience of changing seasons is revealing our experience of climate modifications. I may try to find out which calendar days correspond to the summer or winter solstices and think that on a given calendar day (June, 21 or 22 or December, 21 or 22) something is changing because the day length is diminishing or increasing. But it is an external approach of seasons' modifications which is established in our calendars and through our rites (Midsummer day, for example, which goes back to an ancient fire worship). With an intimate experience of season modification I generally experience a *toppling* into another time and

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<sup>14</sup> For more information, cf. Badt (1961): 95-117. We use his descriptions of surface in Impressionists paintings to develop the idea of an atmospherical perspective onto the world.

<sup>15</sup> Badt (1961)

space. I may certainly observe gradual modifications and a progressive transition into the next season. But subjectively, a season is always experienced from its centre, at its point of balance. I left the « middle » of summer when, as a child, I started to count the days which separated me from the start of school class (in September in France). When autumn was forthcoming, I could detach myself from the large and pacific Summer, I had lost the middle of Summer and was awaiting the new season which would reassemble my time and myself as if I were preparing for another life. Consciousness of seasons is not the consciousness of the flowing of days. We do not experience the passage of seasons as being more or less in Summer or Autumn for example. This is because we experience seasons as atmospheres which are bathing us. I do not experience « gradients » of Summer or Autumn which could be established from a scientific point of view. One is in a season (or a half season) by and through its *middle*. Climate sensation as *middle* sensation<sup>16</sup> is probably due to the fact that climate is experienced as a relatively closed unit(y) (in the paradoxical sense that it is infinitely open) and that the climate sensation – as well as the weather sensation – has a radical singular and regional aspect.<sup>17</sup> Climate sensation does not open onto another climate, it is openness to itself, and thus remaining self-centered and self-referential. Certainly, if I had traveled a lot or if I had lived between two seasons and hemispheres, the sensation of finiteness of the season might not be unknown to me, but this would be a mere exceptional situation.

The experience of climate fluctuations allows us to become aware of the *implicit* character of climate. Indeed, these fluctuations disturb the regularity of climate. Nowadays we all experience climate fluctuations, ruptures or sudden changes of climate balances. However we might still feel these intervals or interpolated seasons (or how should one name the phenomenon of « heatwaves » for example?) as atypical moments which will (still) be *equalized* by the normal course of weather and climate.<sup>18</sup> Sometimes, these fluctuations reveal us seasons or climates as *defective*, affecting our trust, maybe distressing us even if seasons remain time structuring.

Thus, the sudden sensation of a tropical climate in Paris at the beginning of September 2006 might have struck me because I associated the town so intimately with a « Parisian » climate composed of many impressions and maybe dominated by gray and cloudy weather. Dense and suffocating heat and Parisians wearing thong sandals amidst traffic pollution were contrasting with the absence of luxuriant vegetation. I sensed tropical climate and Parisian climate at the same time. Due to these variations, climate is *expliciting* itself. I tried to understand and read in the newspaper that the Azores anticyclone partly responsible for beautiful weather on the French Atlantic coast hugely dilated itself and provoked these heatwaves. Will I be driven more intuitively towards what is far away from us and directly influencing us? Will we become more attentive to what is henceforth *expliciting* itself?<sup>19</sup> These are only speculations about the evolution of our meteorological sensitivity...

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<sup>16</sup> The French word « milieu » would be more appropriate than « middle » since it is referring at the same time to an environment and a center.

<sup>17</sup> Böhme (2003)

<sup>18</sup> In French, the word “canicule” (scorching heat) refers etymologically to a *cyclical* period of great heat when the star Sirius – also called Canicule – is rising and setting with the sun between July, 22 and August, 22.

<sup>19</sup> Icelandic contemporary artist Olafur Eliasson is working on these issues through installations as for example *The Weather Project*, Turbine Hall, Tate Gallery, 2004.

## II. Aspects of climate change perception in contemporary art

This outline of a phenomenology of climate will help us to tackling the issue of the phenomenological status of *climate change* perception. Therefore, we will refer to contemporary artworks again.

### Intrinsic difficulties in climate change perception

Climate change is a global concept used to evoke a phenomenon which operates at a large geographical and temporal scale, and which presents particular difficulties to its perception. We can confer this phenomenon a certain visibility by introducing a multidisciplinary approach of it in our university programs, which is often not the case yet. There would be much to say about this subject but we will remain here at a very general level by concentrating on the distinction between social (collective) perception and direct (individual) perception of climate change and the intrinsic difficulties of such perceptions.

### An invisible or almost-visible phenomenon

Collective perception of climate change is par excellence the climate historian's perception because historians work with sources provided, partly, by others.<sup>20</sup> Climate change perception is a social one also because it depends on support granted by societies to research programs and on the introduction of the topic into school programs and on broader popularization as well. Thus societies assure a slowly familiarization of individuals with geophysical systems such as climate. This social infrastructure is necessary for allowing a long-term perception and helping to educate populations to consider and to take larger temporalities and geographical spaces into account. This collective perception is fundamental and a matter of politics : it is related to the will and the decision of a society to take account of the long term.

Such a « social » perception should be distinguished from an individual perception, i.e. a direct and personal perception of the phenomenon. From a phenomenological point of view we prefer to speak about climate and its modifications, fluctuations and changes rather than of *climate change*. Indeed, generally speaking we do not experience *climate change* (in its scientific, political and theological sense), but we acknowledge changes, modifications and fluctuations of climate. The notion of climate change is not a notion which belongs to our sphere of experience. It is a concept. Events with a broader existence, i.e. which deploy and reveal themselves only on broader geographical and temporal scales, are generally not perceivable. Our perception needs to be assisted by our intelligence to appropriate these phenomena. Indeed, I may *know* that the massive rainfalls in August 2006 on the *Île de Ré* island near the French atlantic coast were linked to climate change. Indeed, if I discuss with the workers in the salt marshes I learn that these rainfalls are unusual and contrary to the salt economy which is over thousand years old on this island. I am learning that these changes are due to the degradation of the stable Azores anticyclone. But obviously I cannot say that the perception of these rainfalls in August is a perception of the global phenomenon called climate change. « Direct » perception is always problematic. Indeed, the qualification of climate change is a difficult task because one has to refer the event to a series of events, in other words one has to do a quantitative and scientific work in order to prove the existence of the phenomenon.

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<sup>20</sup> Le Roy Ladurie (1983)

Climate reveals itself only in time and space condensations. Per se, climate and meteorology are planetary phenomena, but our experience of these phenomena is local, rarely planetary. We do not sense the horizontal *dissipative structures* defined by Ilya Prigogine : we may only know them. I cannot sense the interdependant phenomenon by which the flapping of butterfly wings in China, during a year rich of butterflies, does provoke a hurricane in North America. This is a major paradox of our meteorological and climate sensitivity. Therefore, it might not be suprising to note that poetry (often very sensitive to climate) does investigate vertical correspondences between earth and sky (as in Baudelaire's poetry) rather than horizontal correspondences between the different cardinal points on Earth. It looks like literature is tackling the issue of horizontal correspondences rather through proverbs than descriptions of personal sensations: « As has been written by a zen poet : When a cow from Kai-Shû eats a mulberry tree leave, the horse from Eki-Shû is fattening ». <sup>21</sup> The space we experience when we experience weather or climate is a local space according to the German phenomenologist Gernot Böhme: « the difficulty which consists in grasping a totality – that is weather – through a given and finite number of parameters, is also linked to the fact that weather has something radically singular and regional... ». <sup>22</sup> I remain ignorant of the greater context and our common language is reflecting the extreme localisation of our meteorological sensations. In French language, I may for example say that « beautiful weather is coming back » (« le beau temps revient ») or that the « sun is coming back to France » (« le soleil revient sur tout l'Hexagone »). This may be our feeling. But weather is not wandering about, like this, on Earth's surface. It is the condensed product of a very complex global system.

### **An art of climate change**

How would it then be possible to *perceive* a mere global phenomenon which must have its reality, its cohesion but which remains invisible or only almost-visible to us. This is a question which could be adressed to a kind of art which tries to account for such a global phenomenon. Indeed, one should not renounce to integrate particular climate phenomena in a more global vision in order to consider them as revealing the global phenomenon. It is therefore important to invent new means of *approaching* these phenomena in order to evoke the greater framework without damaging the perception of the individual phenomena, i.e. without forgetting our intuitive and sensitive experience of these phenomena by over-interpreting or over-determining them and thus denying their sensitive dimension. In other words, it is important to develop a more *flexible* perception helped by *maps* or the framework of *stories* i.e. dramatisations of weather and climate. Scientists do nothing else: maps and stories are levers for the perception of a normally invisible phenomenon.

Real perception of the phenomenon would also be perception of our own participation in climate change. This aspect of this kind of perception is generally the most difficult and problematic one. Perception of climate change is always distorted if we do not perceive our own responsibility in this change. It's a matter of perceiving what for weather we are contributing to *produce* and not a matter of perceiving « what for weather we *have* » (in French « le temps qu'il *fait* »). We cannot say anymore « what for weather do we have? ». This kind of question still refers to the general idea that weather is producing itself without us. We would be more attentive to weather if we were asking for example « what for weather is

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<sup>21</sup> Marain (1995) : 17

<sup>22</sup> Böhme (2003): 148. Author's translation

produced?» or « what for weather is *lasting?*»<sup>23</sup> Indeed our weather sensation is made of an impression of distance in relation to weather which is producing itself objectively, i.e. outside of ourselves and by itself. Acknowledging our proper participation in weather would be acknowledging our greater exposure to climate phenomena and probably stir up a latent claustrophobia. Indeed we have become inseparable from weather and climate in a deeper sense as ever imagined: we are abandoned to weather but also a bit weather ourselves, whether we accept this situation or not. Our language is still the product of an old-fashioned weather sensitivity, and it is difficult to translate into our own language (especially common daily language) our complicity with weather and climate. When our most enlightened contemporaries say that we are « Weather Makers » (Tim Flannery) or that we « are *doing* weather » (Gilles Clément, in French : « le temps que nous *faisons* »<sup>24</sup>), they do not mean that we are creating weather but they suggest that we participate in creating weather and climate. And in this sense our common language reveals a binary approach to weather and climate which is difficult to overcome.

## Climate change perception in contemporary art

It appears that recent anglo-saxon artistic projects have tried to tackle these issues linked to the perception of climate change. We will focuss on a recent artistic project and exhibition entitled *Cape Farewell project* and on some recent experiences in art & science collaborations dealing with climate change.

### The Cape Farewell Project

UK artist David Buckland is the originator of a major expedition taking forty artists, scientists, teachers, and a film shooting team three times (in 2003, 2004, and 2005) to the Spitzbergen archipelago north of Norway in the Arctic Ocean.<sup>25</sup> Their work has been exhibited for the first time at the Natural History Museum in London (2006) and is now going around the world thanks to the support of British foreign diplomacy.

Extreme climates and places of higher latitudes are particularly adapted for a sudden visualization of climate change. This observation has often been reported by many participants to the project in their writings and videos.<sup>26</sup> Many contemporary artists interested in climate change went to the poles or, at least, have worked in relationship with these planetary regions.<sup>27</sup> These regions are the front *lines* of climate change.

In fact, the Cape Farewell project is a story of polar regions. During three expeditions, the crew members have lived in this particular environment in order to bring us back testimonies of their experiences. We probably already know such stories of white worlds and polar regions. I remember having been very impressed as a child by *The Call of the Wild* and *White*

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<sup>23</sup> Surprisingly, our proper engagement in weather (our participation in its production) is not approached by Böhme in his weather phenomenology : « The phenomenon we are talking about [i.e. weather] is and remains nature » [own translation], in Böhme (2003): 160.

<sup>24</sup> Clément (2005)

<sup>25</sup> The “Cape Farewell” expedition was repeated once again in 2007.

<sup>26</sup> Robert MacFarlane, « Turning Points », in ed. Buckland (2006): 170

<sup>27</sup> For example, North American and British artists Andrea Polli and Joe Gilmore in *N.* (2005) and the Argentinian artist Andrea Juan in *Antarctica* (2005).

*Fang*. To me these worlds always represented an immense area in the North and a great reserve of wild space. The Cape Farewell team has adventured in a region much more extreme than the one I like to dream of. It went to the extreme edge of civilization where it only met the *deserted* places of Russian scientific colonies (Barentsburg and Pyramididen).<sup>28</sup> This world is *out* of our world. A sublime and pure world. The rare persons met by the team photographer, Gautier Deblonde, seem to be absent on his photographs, as if there wouldn't belong to this place, like *displaced* persons...

All artists of the team have worked on the archipelago as a place. Almost all artworks are characterized by the extreme consciousness of the flow of time. The *Sinking Ice* video by David Buckland occupies the center of the exhibition. It shows the top of an iceberg dangerously unsteady and about to crush into the Ocean. The dramatization of time is extreme. One feels what is going to happen and the visitors of the show contemplated the video for about forty minutes (!), possessed by the digital timing displayed on the screen. This consciousness of a world timing is properly unbearable because it is taking away what is most characteristic to this white world, i.e. its taste of eternity and space, the impression of an immense present. A mere diffuse perception (and not the focal perception of this video) of ice melting is present in other artworks. The composer Max Eastley tells us how he left for listening and recording the cracking linked to the liberation of 10 000 years old little air bubbles compressed in ice and which are joining now our common atmosphere. He tells us that one couldn't see the ice crushing linked to the melting process; he remained helpless and surprised by these sudden crushes: «when you're near those glaciers, you'll hear a sound like a field gun going off.»<sup>29</sup>

In these regions, the huge timescales of scientists become intuitive.<sup>30</sup> But it is also the presence of the world at large which the artists sensed in these regions. Many artworks reveal us the planetary horizon which now comprises the white world and links it to our world time. One of the artists, Alex Hartley, for example, reports ironically to London newspapers that he discovered a new island after glacier melting. This exhibition is not romanticizing the white world, on the contrary it is showing us how this place, Spitzbergen archipelago, is henceforth *joining* our world.

During their stay, David Buckland noticed that the scientists were fascinated by the artists' work. "Yes, for them to understand the art process was great. You operate rather like a scientist, in that you have an idea and you follow it through and half the time it doesn't work and you start again. The main difference was that the scientists were interested in the minutiae while all the artists were trying to understand the enormity of the place."<sup>31</sup> Certainly, the scientists of the team as Dr. Simon Boxall, were collecting data such as the water temperature, in order to trace the diving of the Gulf Stream, but this was in order to understand the phenomenon on a planetary scale.<sup>32</sup> But did the artists show interest in this scientific perspective on climate change? They didn't work on the scientific climate forecast models even if such models, such as the last HadCM3 climate change simulation model for the North Atlantic, had convinced David Buckland, for example, to organize these expeditions.

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<sup>28</sup> Actually, the Cape Farewell expedition also visited the Russian mining town of Barentsburg, which resulted in a series of photographs by Gautier Deblonde.

<sup>29</sup> Max Eastley in ed. Buckland (2006): 58

<sup>30</sup> Kathy Barber, another artist of the team

<sup>31</sup> Journal of the exhibition *The Ship. The Art of Climate Change*, Natural History Museum & Cape Farewell, 2006: 12.

<sup>32</sup> Simon Boxall, « Journal », in ed. Buckland (2006): 27

References to such models and to scientific works on global climate perspectives are numerous in the exhibition catalogue but used mainly as illustrations. The artists of the team did not question the nature or quality of perceptions induced by such models. By the way, David Buckland states in the catalogue: “When unpacked, each artist has in some form responded to this cold, Arctic place and the way it is changing as the Earth warms. They have all told the story on a human, rather than a planetary scale.”<sup>33</sup> But putting things this way is implying that the planetary scale (the one of the climate models) is not a human scale.

## Contemporary experiences in art & science collaborations

We notice that since the end of the 1990s, a certain number of contemporary artists are trying to visualize, sonify or realize in another way, meteorological and climatological data in order to *translate* these realities in a different manner than with the well-known graphs and colored maps we know from school. When collaborating with scientists, they use scientific material (data) and technology whose investigation and appropriation they are aiming at in order to offer new perceptions of geophysical processes such as climate and its modifications nowadays.

Thus for example North American artist Andrea Polli has conceived a series of projects on sonification and visualization of meteorological and climatological data (rather temporal than geographical series) by using her computer as a music instrument which enables her to choose meteorological and climatological parameters which she is translating and *recomposing* into sound wave compositions.<sup>34</sup> In *Heat and Heartbeat of the City* (2004), Polli uses archives of meteorological data and data from sophisticated climate forecast models (temperatures and precipitations) for the Summer months in Central Park (New York) in 1990, 2020, 2050 and 2080. She translates the variations of temperature in loudness, pitch, length, timbre, etc. as well as in a colored graphic (website-)interface which is changing while listening to her sound compositions. The interface presents a zenithal view of Central Park and the colors get burned and tend to the red in order to illustrate the rising of temperature. The sound becomes scratched and raw and is enveloping us slowly but surely while the ambience is closing itself. In her various weather and climate projects Andrea Polli aims at going beyond scientific illustration to deepen our perception of climate change phenomena.<sup>35</sup>

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<sup>33</sup> David Buckland, « Cape Farewell Art and Climate Change », in ed. Buckland (2006): 6.

<sup>34</sup> Her artwork is accessible online with the following URL : [www.andreapolli.com/centralpark/main.html](http://www.andreapolli.com/centralpark/main.html)

One of her weather and climat projects is entitled *N. in 2005. N.* (pronounced n-point for North Pole/Arctic as the northernmost point ; and also a little play on words according to the artist : 'n-point' sounds like 'end-point' implying the end of the world or the end of time) is an installation in a gallery in New York created by Andrea Polli, Joe Gilmore (composer), and Dr. Patrick Market (meteorologist) which is sonifying and visualizing in near-real time the evolution of climat at the North pole (climatological data over five years is condensed in an audiovisual composition of forty minutes ; a 100 % direct transmission would not have enabled the spectator to apprehend the evolutions of Arctic climate).

<sup>35</sup> As stated in an email interview with the author in March 2007 :

Q : « I was wondering whether you also had to define "a priori" the nature (climatic or atmospheric) of the event you were working on, or did you discover it through your artwork ? For example, when does the perception of a storm becomes the perception of a climate change event ? In other words, can an art of climate change be something else than an "illustration" of climate change ? and become a sort of "presentification" of climate change ? »

A : « Yes, that's something I'm really interested in now with the real time sonifications and visualizations. For the storm sonifications, there was already a lot of data and a lot of analysis, so although we didn't know exactly what it would sound like, a lot was already known about the data. That was an advantage, because the final result could be really high resolution and detailed. For the projected summer climate project, the most conservative

Janine Randerson is an artist from New Zealand working in the same direction. Her *Anemocinegraph* installation (2006) aims at presentifying the carbone emissions from the Torehape site (New Zealand) from April-June 2006.<sup>36</sup> Torehape is a peatland which has been drained, harvested and then abandoned and which has been found a persistent source of CO<sup>2</sup>. At sunset<sup>37</sup>, the Museum visitor of *Anemocinegraph* may walk under big screen-cups and admire satellite imagery of weather and images of microscopic air and water whirls and currents and listen at the same time to a sound composition. The sound is not a real time transmission but again compressed sounds of the actual data generated by CO<sup>2</sup>, gathered over the two months period at the Torehape weather station with a sonic anemometer and an open path gas analyser. These two instruments combine to contiunuously measure the latent heat flux and CO<sup>2</sup> flux as a measure of soil respiration according to the artist. The satellite imagery is related to the weather composition. The slowly animated weather satellite imagery relating to the site was collected from the NOAA satellite over the same two month period of time as the sound data (April-June, 2006). Both are compressed versions of the same period of time. In this artwork, Janine Randerson questions the role of new technologies in our perception of weather and climate and the modifications they induce. The artist wants to represent scientific data in another medium and provide other approaches for perceiving not necessarily visible processes like carbon emissions which normally are only accessible through abstract data. Again, the perception of climate is deepened even if it is mediated mainly through technology. But, as the artist puts it: «when one encounters a screen to walk under and become immersed in the image and sound - the mediated data becomes re-invented as a physical experience.»<sup>38</sup>

Of course these are only examples of contemporary artistic experiences in art & science collaborations. The list of contemporary artists interested in the climate change concept or in a dialogue with meteorological and climatological sciences is a longer one.<sup>39</sup>

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model was chosen for outputting the data, but it was obvious that there were going to be a lot of changes, a lot of increased heat in summers. The structure of those sonifications was actually also based on a kind of narrative that came out of the impacts assessment the climate research scientists did. One thing the impacts assessment found out was that consecutive days over a certain temperature were exponentially damaging. Three hot days spread out over a month was bad, but three days in a row was really bad. Power plants would get drained and people would not be able to withstand the heat. So the sonification was programmed to get more intense based on the number of consecutive days. Dramatic results for the projected climate were pretty much guaranteed because we knew more hot days were predicted. The real time work is different, but also problematic. This kind of 'long time' work doesn't fit with the way people experience artworks. No one can stand in front of a piece for 10 years to listen to how, for example, climate in the arctic has changed, even though in climate terms that's a really short period of time. So, for those projects it would be interesting to somehow work out a more long term process, maybe online, maybe a permanent installation in physical space. Joe and I have been showing the *N.* piece for 2 years now, and have data for 5 years, and we have recently recorded a 40 minutes sound work that interprets the data from the last 5 years. Those kinds of approaches can work well ».

<sup>36</sup> For more information, please visit the artist's personal website : [janineranderson.com](http://janineranderson.com)

<sup>37</sup> The projected work is revealed more strongly as night falls. Rather than the "black cube" of many video installation spaces, the artist prefers to use natural light in her installations.

<sup>38</sup> Email interview with the author (March 2007). Janine Randersons added that she would also like to activate other senses in the future – the haptic and sensations like hot and cold.

<sup>39</sup> We could have mentioned many other artistic approaches and projects here : In 2002, the Austrian artists Werner Jauk and Heimo Ranzenbacher exhibited an installation entitled *Klimakonverter* at the Ars Electronica Festival in Linz (Austria) which were physically *converting* climate by artificially recreating climates of the world with objective meteorological data given by the television weather forecast. This is an example – maybe very illustrative – of a corporal relationship to weather models. The North American artist Gloria Brown-Simmons tries to go beyond scientific visualization of climate data in her artworks in order to favor interactions between a possible user and scientific geophysical models. According to her, the user would rediscover the climate map as a *landscape*. But therefore we should first have to experience her visualisations and maps which

It appears to us that these artists interested in another perception of meteorological and climatological data are driven by the desire to approach (to *see*) climate and its modifications, invisible and infinite, like the Australian climatologist Tim Flannery who said that he is driven by the desire, to see, listen, and sense at a larger scale in order to live with the transforming biosphere.<sup>40</sup> It would be interesting to further question the nature of such perceptions of climate change in these projects. Indeed, to which extent do these artworks allow an experience of the world in a phenomenological sense? In other words, what for an experience of the world do they reveal? Unfortunately because of a matter of time we cannot tackle this issue here.<sup>41</sup>

## Conclusion

There would be much to say about contemporary art projects and climate change and their various approaches. We tried to show that climate is inseparable from our inner world. This inner world reacts to and can be apprehended in relation to atmospheric phenomena. Our modern world and climate change are disturbing and destroying our perception of climate. If nowadays, in our temperate latitudes we are delaying the necessary political decisions, it is also because we have become disconnected from climate. Art, in a renewed dialogue with science, might show us again why and how deeply we remain climatic beings as well as helping us to appropriate such a complex phenomenon we call climate change.

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have rarely been exhibited until now. For more information, cf. Brown-Simmons, Gloria ; Kuester, F. ; Knox, C. ; Yamoaka, S. et Repasky, D., « Kepesian Visualization », in *Proceedings of Connectivity : The Tenth Biennial Symposium on Arts and Technology*, pp. 25-36, New London, CN : Ammerman Center for Arts and Technology, Connecticut College, March, 30 – April, 1, 2006.

A list of contemporary art projects in the field of climate and its current modifications may be consulted on the website of the editorial project entitled « Art and climate change » of Leonardo / OLATS : [http://olats.org/fcm/artclimat/artclimat\\_eng.php](http://olats.org/fcm/artclimat/artclimat_eng.php)

<sup>40</sup> Flannery (2005) is describing his experience of Keeling curve which is registering CO<sub>2</sub> concentration in the atmosphere and says that this graph is « showing » him how our planet is « breathing ».

<sup>41</sup> A decade ago, when such art projects barely existed, the American phenomenologist Don Ihde formulated some interesting hypotheses to approach the quality of such global perceptions: cf. Ihde (1997). His hypotheses could inform a phenomenological reading of such climatological and meteorological artworks on climate change. Ihde analyzed the impasses of Husserlian and Merleau-Pontian phenomenology and their impossibility to evoke the perception of global warming linked to their conception of modern science and planet Earth. Ihde formulates two conditions for a phenomenological perception of global warming, i.e. a vision of science as a technoscience and a vision of Earth as planet Earth. Indeed, science as technoscience, especially in Earth Sciences, means that science is technological and allows connecting oneself to the world. Husserl and Merleau-Ponty wouldn't have paid much attention to technology used by scientists. Conceiving Earth as a planet supposes for example that we question the reality of our satellite images of Earth. These images do not show only images of Earth, i.e. surfaces or representations, but also allow us to look *through* them and to *participate* in the visualized reality.

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