Ice – Water – Vapour

Anthropogenic curating of glaciers as a tool to reconnect human development to the biosphere

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Final thesis for a BA-degree in Product Design
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It has been forecasted that all glaciers in Iceland will disappear within the next 200 years.

Oddur Sigurðsson, Glaciologist, Icelandic Meteorological Office; 27. October 2016

Fig. 01. Sólheimajökull melting from underneath due to the body of water at its termination.
Abstract

In this paper, I am drafting the concept of *anthropogenic curating*, based on my research of three major subjects which are a.) the glacier as a system and matter, b.) the connection between human development and the biosphere and c.) the profession of curating. This paper is divided into three sections structured along the physical conditions of a glacier: ice, water and vapour.

In the first section *Ice* I am giving an objective introduction about the glacier as a system of substantial matter. It is about creating knowledge and building a foundation of understanding, curiosity and captivation.

The second section *Water* is about liquefying the solid matter by adding context in terms of planet Earth, climate and contemporary society with their interconnections as factors of transformation. Emptiness, empty space and silence are fluid thoughts which are discussed within this context.

In the third section *Vapour* I am developing the idea of a possible future form of curating by merging the history of curation as a profession with the subjects of the previous sections *Ice* and *Water*. I am visualising *anthropogenic curating* as a tool to vaporise the solid and liquid matter and therefore enable man to create new futures and cultures.

Besides studying a diverse selection of literature, I have placed great emphasis on personal contact, both with people and with nature, throughout the process of my research and writing of this thesis. I kept on visiting Sólheimajökull, Snæfellsjökull and Breiðamerkurjökull several times to feel the subject of my writing deeply within me. I engaged in conversations with professionals of a large variety of fields during the 4th Assembly of the Arctic Circle Conference in Reykjavik as well as consulting extensively with Oddur Sigurðsson, glaciologist at the Icelandic Meteorological Office.
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Introduction

According to the geological time scale, we are presently living in the Holocene Epoch of the Quaternary Period.\footnote{“Epoch (geology)”, \textit{Wikipedia}, accessed 17. November 2016, https://en.wikipedia.org/wiki/Epoch\_ (geology).} The current warm period has been identified as the Holocene and can be considered an interglacial time within the ongoing ice age.\footnote{“Holocene”, \textit{Wikipedia}, accessed 17. November 2016, https://en.wikipedia.org/wiki/Holocene.} In other words, we are living in a time at the end of an ice age and we are about to lose our glaciers.

To know and understand the geological time we live in, gives us reason to identify that the crucial point in the currently ongoing alteration of our climate is not the melting of ice and the loss of glaciers itself, but the rate at which this natural process of Earth’s changing climate cycle is happening. The impact human activity has had, increased the pace of the Earth’s warming above average.\footnote{Luc Jaquet, “\textit{Ice and the Sky}”, documentary/biography, accessed 11. August 2016 on http://putlockers.ch/watch-ice-and-the-sky-online-free-putlocker.html.}
Elmar Altvater, former professor of Political Science at the Free University of Berlin, wrote in his essay “Securing the Planetary Boundaries”:

Those later living on the Earth will find the traces of the present generations in the sedimentary depositions of the Earth’s crust: “If at some time in the future, alien explorers land on Earth and excavate the sediments, they will say of our age: something happened here that radically changed the Earth.”

In this way, geologists and other natural scientists are announcing the dawn of a new age on Earth – the Anthropocene.4

In the present time, about 50 – 60% of the world population is living in Urban areas and due to these circumstances sort of disconnected from the natural environment.5 We consume nature in a cultivated and curated form such as parks and designed green areas, which should not be confused with nature itself, the wild and untamed environment. The world, the biosphere which surrounds us and which we are part of, but in recent years have gotten very disconnected from.6

A glacier is such a complex system and touches on so many fields, from influencing the local weather and global climate, geology, volcanology to the climatologic history, agriculture, energy and tourism. A few hundred years ago people in Iceland used the words of glacier and volcano as synonyms. I suggest that glacier could be seen as equivalent to power today.7 Power on two different layers; the physical, as in matter and the intangible, as in cultural.

On the physical layer I want to exemplify the pure energy which is stored, released and transformed within a glaciers substance. The power it contains in shaping the land and the landscape or the amount of electricity we are able to harvest from hydropower plants which are fed with glacial meltwater. Another example is the amount of energy in food for humans and animals, which is agriculturally and industrially produced due to the availability and use of water coming from the glacier. The physical power of a glacier is enormous.

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6 Folke, “Re connecting Human Development to the Biosphere”.
7 Oddur Sigurðsson, conversation with the author at the Icelandic Meteorological Office in Reykjavik, 27. October 2016.
The other reason why I believe that power is a fitting synonym for glacier is the immaterial potential a glacier contains. The emotional effect a glacier can have on our well-being, our perception of being human, our culture and our connection to nature. I believe that the presence of a glacier can have an immense impact on our connection to nature and we should do everything we can to form, strengthen and use this connection as long as we can – and as long as the glaciers are still here.

Design and arts have not only the power, but also the political and social responsibility, to communicate the issue and to create possibilities for the people to engage and interact.
1. Ice

The first section *Ice* is about the objective part of a glacier as a system of substantial matter, the creating of knowledge and the building of a foundation of understanding, curiosity and captivation.

Jökull is the Icelandic word for glacier.

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*Fig. 03. Map of the glaciers referred to in this paper*

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8 The information of this first chapter *Ice* is sourced in the conversation between the author and Oddur Sigurðsson, glaciologist at the Icelandic Meteorological Office on October 27th, 2016 in Reykjavik, except otherwise referenced.
Formation and transformation of a Glacier

In Iceland, about 10% of the island’s landmass is covered by a variety of glaciers, from Teigardalsjökull, the smallest surge-type glacier of the world with an area of less than one square kilometre, to the impressive Vatnajökull glacier, the largest glacier in Europe by volume and the largest ice cap outside the polar region, accounting for 80% of the Icelandic glacial volume and covers several active volcanoes. Teigardalsjökull and Vatnajökull are only two out of about 300 glaciers on this 103’000 square kilometre small island in the North Atlantic Ocean. But the glacial coverage of the country is diminishing by about 1% every three to four years.

Globally seen, about 10% of the whole earth’s mainland is currently covered by glaciers. In the Pleistocene it used to be about 25%. Therefore, a large part of our landscape has been shaped through the activity and geomorphology of glaciers.

Snow falls on the glacier, settles and transforms into ice. This process repeats itself year after year and therefore creates yearly layers of ice that are getting more and more compressed as they go down. The older the ice is, the thinner the layer gets. A new layer can be four to five metres in thickness and then by aging be compressed down to only a few centimetres. As sand and dust is blowing on to the glacier during the summer and in winter fresh snow falls on top of it, creating a clean layer, it is possible to tell year from year.

When a volcano erupts, the ash falls and spreads on the glacier which is then stored in between the annual layers of snow and ice. When the glacier flows and melts, it creates stunning patterns by revealing the distorted layers of ash. Scientists are able to analyse these ash layers chemically, get a fingerprint of the volcano so to speak, and compare the information to the written sequences of the annals, which tell about eruptions from the early settlement on. This is how scientists can with great certainty date each layer and reconstruct the history of the glacier.

Through the way the ice of a glacier is being formed, layering year after year, it preserves a variety of historical information, such as air temperature, greenhouse gases or even

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evidences of cosmic or geological events in tiny air bubbles. The precipitation can be identified due to the thickness of each annual layer and through isotope research temperature changes can be detected. As a result of this process it is the glacial ice itself who enables us to discover and learn about earth's climatological history.

This analysis of the ice allows scientists to travel back in time for several thousands of years. The record reaches as far back as 800'000 years. And it is the glacial ice again, which tells us about the rapid changes that are happening within our climate.

Icelandic glaciers contain the entire history of the Icelandic nation more than 1,000 years; therefore, it would be vital to retrieve that history before they melt away completely.

It is assumed that our glaciers will all have disappeared in 200 years from now, this means we will lose the history of 1000 years in only 200 years, a rate of five years of history each year.

The monitoring by the Icelandic Glacial Society of Sólheimajökull between 1930 and 2015 has shown that it had retreated by one kilometre during the first 40 years, from 1930 to 1970, then it had advanced by the next quarter of the century and now it has retreated for another kilometre in only 20 years. This means that the rate of retreating has doubled in only ten years’ time. The reason for the advancing in between was a cooling period which took place between 1960 and 1990, mainly in the northern hemisphere, in particularly an area in the North Atlantic which reached from the Labrador Sea across southern Greenland to Iceland.

Fig. 04. Aerial view on Skeiðarárjökull, May 2016

Fig. 05. Layers of ash and debris melting away with the glacier, Skeiðarárjökull.
The loss of Icelandic glaciers

It has been forecasted that all glaciers in Iceland will disappear within the next 200 years. Some glaciers will even be gone in the next twenty to thirty years, for example Torfajökull by Landmannlaugar or Hofsjökull in the east of Vatnajökull. This is incredibly soon if you consider the timescale of these glaciers, for how many years they had been accumulating compared to the years it takes now for them to disappear completely. This is a very sudden change and there is nothing that can be done to prevent this. It will happen whatever mankind now tries to do, even if we would stop emitting all the greenhouse gases today. Because what we have added on greenhouse gases to the atmosphere to date, mainly CO$_2$, will continue to warm up the atmosphere for a couple of hundred years, regardless whether we can stop it right now or not. The inertia of the system is such, that it will keep on warming until it reaches equilibrium and then the glaciers will be gone. If we would somehow manage to cool the climate down again, the glaciers might come back. This would then raise the question though, if people even would want to have them back, if they had the choice. If we think back about 150 years ago, almost no one would have liked to have the glaciers in Iceland, because they were dangerous. They were advancing over farms and they created heavy floods, which are called Jökulhlaup.

A Jökulhlaup, “Glacial Lake Outburst Flood” in English, is an extreme event of an abrupt, and mostly catastrophic, outbreak of subglacial meltwater accumulations or glacially backed-up lakes. In Iceland, a Jökulhlaup is usually caused by a subglacial volcanic eruption and the therewith coupled outburst of subglacial meltwater.\footnote{Baumgartner, Winkler, \textit{Glazialgeomorphologie}, page 61-62.} The amount of ice that is melted in such an occasion is gigantic and almost unimaginable. In Iceland, a Jökulhlaup occurs about five to ten times per year.
The Grímsvötn volcanic eruption in 1996

During the eruption of the volcano Grímsvötn in 1996, about three cubic kilometres of ice were melted and a 3.5-kilometre-long canyon was formed. The energy needed to melt this huge amount of glacial ice is equivalent to one atomic bomb per minute per week and it was a two-week long process. The hot melted water travelled underneath the glacier down from the top of the volcano, melting its way through and then was trapped underneath the subsidence for weeks. The water was at that time around 7-8 degrees when it slowly started to move on, successively gaining more and more speed and all the three cubic kilometres of water went down the glacier in one gush in only a couple of days. The extra temperature created by this process melted the ice further and created a 6-kilometre-long valley until at the lobe of the glacier all the extra energy was released. As the energy which was left at that stage, was not enough to melt the rest of the ice, it lifted the entire glacier lobe up by one metre and then exploded through the surface of the glacier. The flood covered about 750 square kilometres of the plain. The scale, power and energy of this process is almost inconceivable but highly intriguing.

Fig. 07. Grímsvötn eruption underneath Vatnajökull, 1996

Fig. 08. Eruption plume of the Grímsvötn eruption

Fig. 09. A 3.5-km-long ice canyon, bottom of canyon 150–170 m below original surface, width of canyon 150–200 m, except around crater where it was 500–600 m.

Fig. 10. Ice cauldrons formation. On October 1st, the cauldrons were about 2 km wide between the outermost crevasses, the collapsed structure in the centre was 150–200 m wide.
The energy of a glacier

In Iceland, glaciers are used in the production of electrical energy. Glaciers themselves have a huge energy potential by simply existing. If they melt, the water which is released and running down the mountain is used in a large amount to feed the hydropower plants. We will be able to harvest this energy for some more years to come, but due to the arriving loss of the glaciers, it is a temporary source of energy. Once the glaciers are gone, we will only have the precipitation nurturing the rivers which now receive meltwater from the glaciers. But as long as the glaciers are melting, they are adding a lot to the generation of energy.

To illustrate the amount of energy within a glacier, think of the energy of a lightning. The largest hydropower station in Iceland produces million times the energy of a lightning and the above mentioned Grímsvötn eruption was 100 times the amount of energy of the hydropower plant. The energy of the Grímsvötn eruption multiplied with 1000 would be about the amount of energy of all the nuclear weapons in the world. Would all the nuclear weapons of the world be placed underneath the icecap of Vatnajökull and be fired off at the same time, it would only melt about 1% of the glaciers volume.

Surge type glaciers and non-surge type glaciers

Glaciers are divided into two different types; non-surge type glaciers and surge type glaciers. Non-surge type glaciers are glaciers whose mass balance changes continuously as the climate tells them to do. When it is cold they accumulate, when it is warm they retreat. Surge type glaciers act differently, they are continuously retreating, all the time regardless the climate, but all of a sudden they charge forward, what is called to surge.

The glacier Múlajökull, which is part of Hofsjökull, is such a surge type glacier and advances about every ten years. The surging movement creates a stunning halo shape around the glacier lobe. When a glacier is surging downwards a mountain it can move at a speed of around 20 meters per day, but when it hits the turn, it can speed up to 100 meters a day. If it meets an obstacle on the ground, it just breaks up (see Fig. 14 and 15). It is fascinating to observe a surging glacier, not only to watch the movement but also to hear it. The sounds which are audible during such an event are like a symphony. All kinds of frequencies, from below, sub hearing, one can only feel it with their guts, to the sound of a rubble of glass that is being rolled on.
Fig. 11. The figure shows change in terminus position per year (bars) and accumulated change from the beginning of the measurements (curve with symbols for each observation) of Múlajökull.
Fig. 12 Aerial photograph of the Múlajökull surge-type outlet glacier and the ground pattern shaped by the surge on 28. December 1981

Fig. 13. Aerial view on Múlajökull from the south, 18.07.2007
Fig. 14. The Síðujökull surge in 1994, hitting an obstacle and breaking up

Fig. 15. Closer look at the crushed glacier ice of Síðujökull
The factors that govern the mass balance of glaciers

Besides the climate and seasonal differences in temperature other factors affecting the mass balance of glaciers exist. So-called non-climatic factors are tidewater, debris cover, volcanic activity or geothermal activity.

Tidewater glaciers are calving into a body of water, either the sea or a lake, which is taking away ice mass from underneath and at the front of the glacier. As a typical example for such a type of glacier we have Breiðamerkurjökull at the well-known Jökulsárlón glacier lagoon in the south of Iceland. This glacier is losing so much mass to the lagoon that it is retreating at a rate out of control.

The debris, which can partly be covering the surface of the ablation area, influences the mass. If the layer of debris is very thin, it can increase the melting through the enhancement of heat, but if it has a certain thickness of at least a few millimetres, it prevents the ice from melting as the debris then has isolating qualities. This process can then lead to the formation of a Nunatak. The word Nunatak originates from the Greenlandic Inuit language and means generally a hill, mountain or rock which is completely surrounded by glacial ice.14

Then of course there can be either volcanic or geothermal activity which is melting the glacier from underneath.

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14 Baumgartner, Winkler, Glazialgeomorphologie, page 135.
Fig. 17. Breiðamerkurjökull front and Jökulsarlon

Fig. 18. Graph of annual advance/retreat in metres of front variation in mass balance of Breiðamerkurjökull. It shows that the glacier has constantly been losing volume.
2. Water

This section Water is about liquefying the solid matter, adding context in terms of planet Earth, climate and contemporary society with their interconnections as factors of transformation.

The Japanese designer Kenya Hara wrote beautiful words about the transformation of nature in his book White: “The power of transformation is not something new; nature transforms itself continuously. It requires much energy and consistency to preserve beautiful things, so we must observe transforming nature closely, capturing its stillness while advocating its immutable and universal features.”15

I think the interesting part of this sentence is where he says that we must observe the transformation of nature closely. It relates to how Woody Smeck, Superintendent at Sequoia National Park in California describes that a park service has to look “anew at its role in conserving land- and seascapes by managing parks not as static terrain but as places of transformation.”16

This also connects to what Naomi Klein, a Canadian author, social activist, and filmmaker,17 is saying in her book This Changes Everything, that climate change is a slow-moving and place based process.18 Similar to the system of a surging glacier, climate change is slowly building up high on the top of the mountain in the accumulation area but when it reaches the equilibrium line it will speed up and move rapidly. Except that climate change does not occur as cyclical and moderately as a glacier, but more likely only once in our time in its full force and more violent, endangering the existence of humanity. Naomi Klein wrote about the scale of these changes in her book:

Climate is about an early blooming of a particular flower, an unusually thin layer of ice on a lake, the late arrival of a migratory bird – noticing these small changes requires the kind of communication that comes from knowing a place deeply, not just a scenery but also as sustenance, and when local knowledge is passed on with a sense of sacred trust from one generation to the next. [...]
Similarly, climate change is also about the inescapable impact of actions past generations not just on the present, but on generations in the future. These time frames are a language that has become foreign to a great many of us. Indeed, western culture has worked very hard to erase Indigenous cosmologies that call on the past and the future to interrogate present-day action, with long-dead ancestors always present, alongside the generations yet to come.\textsuperscript{19}

I think one of the main reasons why climate change could have taken this far, is because we in the western society, have lost our deep connection to nature and the ability to observe the small changes in nature which are the early indicators of change. It is no new information that the CO\textsubscript{2} pollution level in our atmosphere has been rising since the late 1700s, from the beginning on of the commercial use of coal.\textsuperscript{20}

French glaciologist Claude Lorius was the first to prove man’s role in climate change more than 30 years ago. His story began 60 years ago, on October 31\textsuperscript{th} in 1956, when Lorius embarked on a one-year long scientific expedition to Antarctica. He discovered that a spectrometric analysis of a sample of snow or ice would be enough to obtain a precise reading of the ambient temperature the day the snow fell, even if it occurred thousands of years ago. Lorius wanted to find the oldest ice to learn at what temperature it was formed. The quest was to describe how the climate has evolved.

Ice is a veritable natural planetary clock and readable as a book. Thus, Lorius and his team made an unexpected and unsettling discovery in the white wilderness of Antarctica which has never been colonised by any living being humanity: radioactive elements in the ice from explosions of atomic bombs such as Nagasaki and Hiroshima.

Earth’s journey around the sun creates a 100’000-year cycle of cold and warm phases: 80’000 years of Ice Age followed by 20’000-year interglacial or warm period.

Lorius and his team drilled ice cores to a depth of 3603 metres at the Vostok Research Station, Dome C in Antarctica between 1959 and 1998, analysed the fossil air and travelled 420’000 years back in time, taking in four climate cycles. A later research team continued drilling and reached as far back as 800’000 years in time, taking in eight climate cycles.

Each cycle of glaciation takes shape in identical form, testifying to variations in temperature and sea level plus levels of carbon-dioxide and methane in the atmosphere. Lorius had before him indisputable proof that climate and concentration of greenhouse gases have always been closely linked.

\textsuperscript{19} Klein, \textit{This Changes Everything}, page 159.
\textsuperscript{20} Klein, \textit{This Changes Everything}, page 159.
The graphs based on the data gathered from the ice that had been sourced at Dome C, showed temperature variations on Earth of up to 5°C between its naturally occurring warm and cold periods. Also, that sea levels varied by up to 120 metres depending on whether water is frozen in icecaps or free in its liquid form. Over the last 100 years, the CO2 produced by man is behind an unprecedented rise in temperatures on Earth. We are altering our planet’s climate at a rate never before seen in history. The message was and still is incontestable.\textsuperscript{21}

Professor Carl Folke, Science director at the Stockholm Resilience Centre, puts the disconnection between the contemporary society and nature in very clear and sharp words. Folke says that the last two or three generations have created mind-sets that are pretending as if we are not living from the planet, as if we are independent of the earth we are living on. “It has become very obvious now in the Anthropocene, that this is the case.”\textsuperscript{22} But humanity now is living in this biosphere, in the Anthropocene and we are a global force who is indisputable shaping the planet. Folke sees the reconnection to the biosphere as fundamental for the future of humanity. Until now certain issues such as climate, human health or the economy have been treated separately in our economic system, but he argues that they are truly intertwined. We have gone through a great acceleration of expanding our actions, we have speed up our activities in an enormous way through the connectivity of the global society all over the planet, and we are now moving into a new terrain of new dynamics. Folke explains the idea of reconnecting ourselves to the biosphere as doing something obvious; to appreciate being alive on earth, to reflect on it to reconnect with it. This may sound very simple but can be a big challenge when 50-60% of the world’s population is living in an urban area today. “The reconnecting path is not a simplistic one, it is a very profound one of increasing the opportunities for the well-being of people anywhere on Earth and increasing the pathways for good human life.”\textsuperscript{23}

Folke goes on that it is about the basic and very simple truths about being part of a planet, truths that are not part of our conceptions and reality today, but are profoundly important for reconnecting us with our planet. “To look outside the window, to see the different nuances going on there, a rainy, a sunny day, sunset, dawn, beautiful light, the

\textsuperscript{21} Jaquet, “Ice and the Sky”.
\textsuperscript{22} Folke, “Re connecting Human Development to the Biosphere”.
\textsuperscript{23} Folke, “Re connecting Human Development to the Biosphere”.

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birds flying, and let it move into your body and fill you up, and reconnect yourself to the planet in that way.”

I understand this as simply being in nature, not doing anything but just being open and able to observe and absorb it, to feel it. To be alone and by oneself, to feel some sort of emptiness.

“Some mysteries can only be penetrated with a relaxed, unquestioning mental attitude.

[To achieve] some kinds of understanding, one needs to be able to be ‘at sea’ for a while”

Carolyn F. Strauss

Here I want to add some more thoughts by Kenya Hara. “Emptiness does not merely imply simplicity of form, logical sophistication and the like. Rather, emptiness provides a space within which our imaginations can run free, vastly enriching our powers of perception and our mutual comprehension. Emptiness is this potential.” Hara also says: “Silence is eloquent. […] Silence, when used effectively, actually secures meaning, it is a necessary part of communication, and wisdom.”

To me, these two statements are essential prerequisites in the process of reconnecting ourselves to our environment. The ability to allow oneself to be in silence in the mental state of emptiness is therefore what I believe we need to practise. To perceive the silence and engage through it in the communication between human and nature. This goes in line with the humanistic philosophy of Jean-Paul Sartre wherein he says that the destiny of man

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24 Folke, “Re connecting Human Development to the Biosphere”.
26 Hara, White, page 60.
27 Hara, White, page 60.
is placed within himself. There is no hope except in the action of man, and that the deed is the one thing which permits man to have life.28

This information is, in this case now of course taken out of the context of a complex philosophical doctrine but nevertheless it underlines the quintessence of this section. It is our duty to take action in reconnecting to the biosphere in order to create an urgently needed new mind-set in humanity to develop a liveable future we want to live in. And I believe here in Iceland the glaciers are one the most eligible substances to illustrate this issue because the longer we are connecting to them over time, the more they are disappearing until we have lost them completely. But what hopefully will remain from this process is a deeper connection to nature. The glaciers are disappearing but at the same time creating an empty negative space.

When Kenya Hara explains the process of *shikinen zotai*, the rebuilding of an Ise Shrine once every twenty years, he says that is about the *act of redrafting*. The Ise shrine, to the Sun Goddess, is the most holy site within a Shinto shrine and it has a complicated building structure. Shinto shrines worship the *eight million gods* within nature whose building principle is about *embracing emptiness*, the shrine is designed to be empty so there is always the possibility that *something* may enter it. When rebuilding the shrine, the new structure is erected next to the established building so that the old and the new building are standing side by side. During the rebuilding process, the blueprint of the shrine changes as no attempt is made to preserve the preceding plan. Through the *act of redrafting* it is reformulated and key issues are the fresh ideas and sensitivities which attach themselves to the refinement of the draft and physical differences occur naturally. “Through reproduction, information is transformed into a new life form.”29

Can we apply *shikinen zotai* to a glacier? Perhaps not directly but there is for sure a kinship. The “white” surface of a glacier will vanish and a new white space, a sort of new emptiness will emerge. This new space could then be occupied by *something*, which might be a new generation of curators, which I will illuminate in the following section *Vapour*.

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“White is a particularly unusual colour because it can also be seen as the absence of colour. In the old days, Japanese referred to the latent possibilities that exist prior to an event taking place as *kizen*. Insofar as white contains the latent possibility of transforming into other colours, it can be seen as *kizen*.

White can be attained by blending all the colours of the spectrum together, or through the abstraction of ink and all other pigments. In short, it is “all colours” and “no colours” at the same time. This identity as a colour that can “escape colour” makes white very special.”

Fig. 19. Sólheimajökull, ice and debris

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Fig. 20. Building concept of an Ise shrine
3. Vapour

To follow the rhythm of a glaciers metamorphosis, I want to show that the task of curating could become a tool which vaporises the solid and liquid matter to create new futures and cultures. The act of curating is as intangible as vapour.

I have so far been talking about the objective part of a glacier as a system of substantial matter, and about its context of existence in relation to the planet, climate, humanity and as well about their interdependence. A glacier has the power to transform and shape our land, does it also have the power to transform our minds the way we think and our habits? Does a glacier have the power to reconnect us to nature?

The word curating etymologically roots in the Latin language and originates from the word *curare*, which can be explained as *to take care of*. Civil servants in ancient Rome were called *curatores* and their task was to oversee all kinds of public work until later in the medieval period the focus of a *curatus* shifted to a more metaphysical aspect of the human life and was a priest who took care of the souls within a community. Only towards the end of the eighteenth century the meaning *curator* transformed to signify the task of taking care of a museum’s collection. Over the centuries, different kinds of *taking care* have evolved from the root word *curare*, but cultivating, growing, pruning and trying to help people and their shared contexts to thrive is still very close to the original sense of *curare* and is what describes the profession of the contemporary curator. The role of a professional curator today coalesces around four main tasks which are preservation, selection of new work, contributing to art history and the making of exhibitions.  

Hans Ulrich Obrist writes in his book *Ways of Curating*:

> To make a collection is to find, acquire, organise and store items, whether in a room, a house, a library, a museum or a warehouse. It is also, inevitably, a way of thinking about the world – the connections and principles that produce a collection contain assumptions, juxtapositions, findings, experimental possibilities and associations. Collection-making, you could say, is a method of producing knowledge.  

He goes on and says that “conversations are a way of archiving or preserving the past”\textsuperscript{33} and I think we could not only use, but also mutate this statement into a form that would enable us to see conversations as projections or imaginations of the future we want to create. To reverse the act of archiving reality through communication into generating a future reality by having a conversation. Conversation is therefore both, preserving and producing knowledge.

To tie in to the subject of conversation, I want to explain the concept of a non-conference. The intention behind a non-conference is to create a contact zone for an interdisciplinary group of people where something can happen, but very important, nothing has to happen. Sort of creating a conference but without the common framework that typically makes a conference. Take all the “official” elements away and only leave the coffee break as a common space, because it is usually in the common spaces where the most interesting encounters occur. The crucial point itself is only to bring interesting people together in a specific place and time. It is about creating a free space, to build a temporary community of different people and practises and initiate the condition for triggering sparks between them.\textsuperscript{34}

To bring the economy factor back in, which I was referring to briefly in the previous section \textit{Water}, I want to emphasize the existence of the link between imagination and economy. Hans Christoph Binswanger, economist and former director of the Institute for Economics and Ecology at the University St.Gallen in Switzerland, made a novel connection between the economy and the art. “Art […] is based on imagination and is part of the economy. But the process of money creation by a bank is connected to imagination, because the money is printed as a counter value for something that doesn’t yet exist. The invention of paper money is based on imagination, or a prospective sense of bringing into being something that has yet to exist. A company imagines producing a good and needs money to realise this, so it takes out a loan from a bank. If the product is sold, the “imaginary” money that was created in the beginning has a counter value in real products.”\textsuperscript{35} Binswanger acknowledged the unsustainability in endless growth, in human and in planter terms, early in his work and suggested ways to moderate the market’s wholesale demands. He suggested that the market should be understood as something not

\textsuperscript{33} Obrist, \textit{Ways of Curating}, page 57.
\textsuperscript{34} Obrist, \textit{Ways of Curating}, page 153.
\textsuperscript{35} Obrist, \textit{Ways of Curating}, page 82.
to be obeyed to but rather as something that should be manipulated for human purposes. The economic system of today is simply incompatible with life on this finite planet.

I do not want to go further into details of the economic system but it is important to understand, that the economy is a fundamental factor of the environmental crises we are dealing with. We need to recognize the importance of this interconnection and see it as a higher goal to be changed. Because the reconnection of the human to the biosphere is in that sense the very core of solving this problem, it is like the planting of a seed in every single one of us from which the power to change will grow. The start of change usually comes from the society, not politics. As in the creation of money, I believe we need to reinforce our ability to believe and imagine the value of something we do not see its true value yet, the value of the biosphere in the current case, to create a solid bedrock for change.

Thus, I argue that we should adapt and develop a new concept of curator. A description of an anthropogenic curator who serves the issues discussed in the previous sections Ice and Water and provides tools for reconnection to nature. We need spaces for experiences of Earths’ biosphere which enable us to diminish the issue of the disconnection between human and nature and thereby plant the seeds for a change of our economic and political system according the needs of our planet and humanity. We urgently need a tool to perpetuate history and knowledge but also to imagine the new future.

36 Obrist, Ways of Curating, page 83.
Conclusion

I think we should reinvent a new definition of a curator as a new profession that derives from a contemporary curator. A curator can be other things than what he or she is today, a curator’s role has changed throughout history and entering the Anthropocene now is an excellent time for this to happen, before the glaciers and all their information will be gone forever.

A glacier itself is such an incredibly powerful matter and important system within the planetary structure. Glaciers shape and transform landscapes and can also touch us humans on an emotional and metaphysical level. Glaciers are a beautiful appearance whose changes, most dramatically caused by a warming climate, such as retreating and disappearing of mass or the increasing amount of meltwater and rivers are distinctly and visibly. We humans tend to relate and care more easily for evidences we can perceive through our body and our senses. Hence I believe that glaciers do not only have the power to transform nature, but also our minds and the way we will develop human activities on Earth. I believe that if we practise to reconnect ourselves to nature, may it be in little exercises such as observing a glacier or feeling the wind or smelling the sea, we can achieve to transform our pathways to a future worth living.

I believe that the constitution of anthropogenic curating could become a valuable tool in establishing a new concept of space within our environment. A sort of curated stillness of nature, which enables us to diminish the issue of the disconnection between human and the biosphere. The alliance between glaciers and curating can create a vigorous and emphatic message. Anthropogenic curating allows us to create new dynamics and change cultures.
“Ice is a river whose stillness is but an appearance”
Claude Lorius

38 Jaquet, “Ice and the Sky”.


Oddur Sigurðsson, glaciologist at the Icelandic Meteorological Office in conversation with the author, 27. October 2016 in Reykjavik.


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