

Hot rock, cold Ice!

- The manner in which the Mont Blanc valley alpinist community experiences and deals with climate change in the mountains -



Wouter-Dirk Huitzing

June 2011



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Master thesis for the Master Cultural Anthropology:
'Multiculturalism in a Comparative Perspective'
University of Utrecht

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Cover picture: Boris Textor has just passed the no-walking sign for tourists on the Aiguille du Midi ridge.
Photo by Wouter-Dirk Huitzing

*The indulgence of our lives
Has cast a shadow on our world.
Our devotion to our appetites
Betrayed us all.*

*An apocalyptic plight.
More destruction will unfold.
Mother Earth will show her darker side
And take her toll.*

*It's just another way to die.
There can be another reason why.
You know we should have seen it coming.
Consequences we cannot deny will be revealed in time.
Glaciers melt as we pollute the sky.
A sign of devastation coming.
We don't need another way to die.
Can we repent in time?*

*The Time bomb is ticking and no one is listening.
Our future is fading.
Is there any hope we'll survive?*

*Still, we ravage the world that we love.
And the millions cry out to be saved.
Our endless maniacal appetite.
Left us with another way to die.
It's just another way to die.*

Can we repent in time?

*Greed and hunger led to our demise.
A path I can't believe we followed.
Black agenda's rooted in a lie.
Will we repent in time?*

*Species fall before our very eyes.
A world that they cannot survive in
Left them with another way to die.
Are we dead inside?*

*The time bomb is ticking and no one is listening.
Our future is fading.
Is there any hope we'll survive?*

*Still, we ravage the world that we love.
And the millions cry out to be saved.
Our endless maniacal appetite.
Left us with another way to die.
It's just another way to die.*

*Still, we ravage the world that we love.
And the millions cry out to be saved.
Our endless maniacal appetite.
Left us with another way to die.
It's just another way to die.
ooh can we repent in time?
It's just another way to die.
ooh can we repent in time?*

- Disturbed, Asylum, 2010 -

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“Today the little glacier is dying and year-long snow here will soon be just a memory: climbers will gain a few more metres of climbing which they would gladly exchange for a healthier planet.” (Michel Piola)

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Wouter-Dirk Huitzing

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“One of the greatest challenges facing humankind in the next century will be predicting and coping with the consequences of rapid Climate Change.” (Al Gore)

Preface – Changing Alps

Mountains have always inspired awe in people. High steep rock towers or big broad pyramids, covered with snow and ice. Although as the crow flies not far away, still for many people unreachable, uninhabitable and dangerous. Comparing the present day Alps, with pictures from the 19th century, it is impossible not to notice huge differences. Glaciers have receded hundreds of meters, snow fields have disappeared and bare rock has been revealed, a process witnessed worldwide. Glaciers all over the world are retreating and more than one glacier is dying. Climatic change has become a hot topic these days and a frequent guest in the media (Economist, 2009; Moerland, 2009). Since I seriously started with climbing in 2002, I have spent almost two months every year in the Alps. Although I have been alpine climbing for less than a decade, I already notice differences in the mountains compared to when I started. There is less snow in the summer, a general average temperature increase, and a decline in possible waterfall ice-climbing days. Most differences look little and subtle, nevertheless when seen on the time table of my climbing career, it is going quite fast. This led me to wonder how other alpinists, who had been climbing for a longer period, are experiencing climate change in the mountains. I often talk to other mountaineers on the campsite or in the mountain huts. These conversations are mostly about climbing or the weather. However, sometimes they are about the differences between the past and the present mountains. These conversations are interesting as most people can tell and point out changes in the mountains that they have experienced.

In the summer of 2006, I did my alpine instructor exam in Obergurgl, Austria. I was leading a youth alpine climbing course together with a local Austrian mountain guide. At the end of the third day, we sat down on the terrace of the Langtalereck hut for a big piece of apfelstrudel. From the terrace we were able to see down on a glacier, the Großer Gurgler Ferner. While we were enjoying our Austrian delicacy, my friend told me about his family. Both his father and grandfather had also been mountain guides in Obergurgl. He pointed at the Großer Gurgler Ferner and told me that he had pictures, portraying both his father and grandfather in front of the glacier at different times. Although,

they were posing in front of the same glacier, both of the pictures show totally different sceneries. The landscape was clearly the same, but the glacier was unrecognizable, as it had retreated for almost hundred meters. The differences between the two pictures were already huge, but if I had made a new picture that day, it would have once more shown a completely different glacier. To press his point my friend retrieved a picture from inside the cabin, which portrayed the glacier in the 1900's, and he pointed out the differences. If it was not for the familiar mountains, I would not have seen any resemblance to the present day glacier. He also told me how he and his colleague mountain guides were coping with climate changes. They constantly had to alter the beginnings of the climbing routes, as the melting glacier left smooth rock behind and made routes more difficult. Not only did we talk about the occurring changes, the next day we experienced some ourselves. We got up early morning to search for a patch of fresh snow to do some basic snow exercises. However, we walked for several hours on a bare glacier without finding any snow, just bare glacial ice. According to our guide, there had always been snow on the glacier in August until ten years ago. The last years there was less and less snow to be found. That day we ended up in doing ice exercises as the day would not be completely lost and these kids had the opportunity to enjoy the glacier before it had disappeared completely.

A year later, two friends and I were scouting an area, to see if we could give a climbing course there. For three days we stayed in the Cabane d'Orny, a mountain hut on the Swiss side of the Mont Blanc massif. During our stay we had a constant background noise of rockfall. While climbing, sunbathing at the hut or walking on the Glacier d'Orny we could see rocks tumbling down the North Face of Le Portalet¹. This mountain had actually been on our to-do list. However, while making plans in the Netherlands we had not imagined that the climbing conditions could be so bad. We had brought a ten-year old guidebook with us, which said that it was an excellent morning climb. The hut guardian told us that the conditions on Le Portalet had been like this for the last summers. Accord-

¹ One of my informants had the exact same experience at *Le Portalet* as the following quote shows; *"There are definitely peaks, which were recommended as good introduction peaks to alpine climbing in the old British guidebook, where you wouldn't go anywhere near now. However they still appear in the guidebook saying good little North Face, but if you look at it now it is a pile of rubble.(..) the Le Portalet, opposite the Orny. It's raining rocks constantly, but it is described as a brilliant training face. It must have been quite a popular climb.."*

ing to him, this route had become a winter ascent, as nobody dared to climb it in summer anymore. At that point our survival instincts kicked in, and we decided that instead of dodging rocks, we were better off in ordering a big piece of pie and enjoy the magnificent view.

The above are just two of my personal experiences, but they are not unique incidents. In May 2006 a huge rock broke loose above the Gothard tunnel and destroyed a car, killing two people, and heavily damaged some trucks. After close inspection it was noticed that the rocks above the Gothard tunnel were highly unstable. The same year in July, hundreds of tourists witnessed a part of the east side of the famous Eiger collapsing. Hundred thousands of cubic meters of rock fell down the face. In the summer of 2009 the Matterhorn was closed for climbing and Air Zermatt had to rescue fifteen alpinists by helicopter. What happened? Several alpinists had felt the rocks on the mountain move. After research by Italian geologists, they found that several rock parts of the Matterhorn were highly unstable due to melting permafrost.



Picture 1 The ice cave exit at Aiguille du Midi. From this point alpinist can leave the viewing point to access the high alpine area of the Mont Blanc area. The sign on the left warns tourists, alpinists and skiers about the dangers of the high alpine area. Photo: Wouter-Dirk Huitzing.

“Obviously, you also needs to apply common sense and experience to your route choice, regardless on what your guidebook says.” (Anonymous)

Chapter 1) Introduction

§ 1.1 Anthropology & Climate Change

Anthropologists have always been interested in how communities and cultures live, thereby indirectly *“interested in how people interact, practically and technically, with the resources of their environment”* (Ingold, 2000). Still, it took until the beginning of the 1990’s until environmentalism became a real subject in anthropology (Milton 1996; Ingold, 2000). Although environmentalism and the climate change debate have some overlap, they are not the same. According to Milton (1993) is *“the environment affected by human activity, and the possibility of securing a viable future depends on such activity being controlled in some way.”* Therefore Milton defines environmentalism as *“the quest for a viable future, pursued through the implementation of culturally defined responsibilities”*. Ingold (2000) defines environmentalism as *“the ways in which human beings relate to components of their environment”*. While the climate change debate is on the direct impact from climate on people, communities and environments (Stratman, 2004; Alcamo et al., 2007; EEA, 2009). In short, this means that environmentalism is the impact from human activity on its environment (and so on the climate), while climate change is the impact from the climate on people. Climate change is a threat to the way of life we are accustomed to and what we value (Hulme, 2009). When natural scientists (CIPRA, 2002; Alcamo et al., 2007; Balog, 2009) research melting glaciers and climate change in the Alps, they almost always neglect the social impact. While anthropologists, like Friedl (1974) and Netting (1981), limited their studies to ethnographies of alpine villages. It seems rather strange that no anthropologists studied the impact of climate change on alpine communities, as according to Friedl (1974) alpine settlements are conditioned by the ecology of the alpine valleys, which creates a close ecological relationship. In his book; *Balancing on an Alp*, Netting (1981) describes the history of the alpine peasant community of Törbel. Although he makes some remarks on ecological change, he is only looking at the use of natural resources which directly surround the community. Ecological and climatic changes in the high alpine environment are not of any issue in his study. The

same is the case for the study done by Friedl (1974). Friedl describes what is happening in the alpine community of Kippel. He analyses all the facets of daily life; community life, (communal) work, diet, festivities, alpine environment, family relations and there is some mentioning on the use of natural resources. Ingold (2000) points out that in the past, so far as most anthropologists were concerned, climate and ecology could be safely ignored as climate was for meteorologists and ecology for ecologists to study. Milton (1993) argues in her book that the relationship between anthropology and environmentalism has to be explored, rather than defined, as this relationship is still evolving. Now almost twenty years later this relationship is still evolving. It has even become a more complex relationship as the subject of climate change has joined in. Nothing evolves in isolation and the specific character of anthropology's relationship with nature, environmentalism and climate change can only emerge through interaction with other disciplines (Milton, 1993). This is especially true, given that global warming is a matter of public concern, it surpasses national boundaries and it presents a challenge to the whole world. Therefore it is important to start with describing and exploring all that is happening. Just as anthropologists had ignored the subject of environmentalism, they have also ignored the subject of climate change for a long time. It was not until recent years that anthropologists slowly started to pick up on the subject of climate change (Crate & Nutall, 2009). As it is a new subject in anthropology, there is currently a lack of a theoretical framework. Most of the recent done studies on climate change and anthropology are exploring and describing studies on how communities are threatened by, experience, and deal with the consequences of global environmental change (Echeverri, 2008; Hitchcock, 2009; Lazrus, 2009). In a way, we are back with the classic anthropologists at the beginning of the 20th century, who mainly described what they encountered. It is unclear why anthropologists waited so long with studying the impact of global warming, as global environmental change has been affecting the world and people worldwide for some time already. However, its impact is different everywhere as communities and cultures are affected in different ways. The anthropologists Cruikshank (2001) and respectively Strauss (2009) are stating it as follows, "*if climate change is a global process, it has profoundly local consequences*", "*climate change is certainly a global phenomenon, but one that it is locally experienced by specific cultures and with circumscribed environments*". Some places

will get warmer, others colder, wetter or drier and some places will become completely uninhabitable. These alterations of the local climate will have severe impacts on the lives, cultures and futures of people. According to Hulme (2009) is “*climate change is not ‘a problem’ waiting for ‘a solution’ . It is an environmental, cultural and political phenomenon which is reshaping the way we think about ourselves, our societies and humanity’s place on Earth.*” So climate change is not a problem to be solved by science or technology, but a thing we need to embrace so we can find a way to live with it. As Hulme suggests that communities will embrace climate change, this will become a new challenge in anthropology. “*To this challenge anthropology brings its core theoretical tenet: that culture frames the way people perceive, understand, experience, and respond to key elements of the worlds which they live in*” (Roncoli et al., 2009). It will be interesting to study the cultural frames of how people cope with these changes, as sooner or later every individual on earth will be affected and has to adapt. Most of Europe will experience the consequences of the melting glaciers in the (near) future². However, a community like the alpinist one is already experiencing the consequences of climate change in their living environment. The alpinist community has been neglected for too long in the climate change debate, which is strange as they are very close in observing the problem and they could provide and contribute valuable information and useful insights for the climate change debate. As pointed out earlier, it is important to document the ways that climate change is having a worldwide impact. This study is part of that process of documentation, as it brings together climate studies, social sciences and field experiences from individuals who are out there every day. This study is scientifically relevant as it is unique in the manner at which it looks at the impact of climate change on the alpinist community. To my knowledge this study is the first study to combine climate change with the alpinist community. It aims to understand how alpinists experience climate change in the mountains. The alpine environment while be a fascinating study area for anthropologists interested in the social impact of global environmental change on communities, as according to climate scientists, the Alps are a key region for the study of global change for two main reasons (Cebon et al., 1998). Firstly, global warming is found to be twice the global

² See appendix IV for information on expected social and ecological consequences for Europe of melting glaciers.

average in mountainous areas (EEA, 2009). Secondly, through the availability of long weather records and the abundance of climatic traces on natural objects, are the paleoecological studies in the Alps among the most refined on Earth (Cebon et al., 1998).

§ 1.2 Demarcations

This study on the alpinist community has been conducted in the small village of Chamonix du Mont Blanc, Haute-Savoie, France. Since the birth of alpinism has Chamonix attracted many climbers from all over the world, as it holds the highest mountain of Western Europe, the Mont Blanc, and is seen as the world capital of mountaineering. This study looks at the alpinist climbing community of the Chamonix valley, which includes both skilled (amateur) alpinists and professional mountain guides³. The focus lies on their alpine climbing experiences with regards to climatic changes and their personal climbing/life stories. The term alpinist is a very broad and a badly defined term. Therefore I will first explain what I mean by both climbing community and alpinist. All alpinists are climbers, but not all climbers are alpinists. The climbing community consists of distinct factions, the distinction depending on what kind of climbing is actually being practiced. Bouldering, rock-climbing, ice-climbing, and alpinism are the most common types of climbing. Many individuals focus on one particular type of climbing, but just as many combine practices. In her study on bouldering, Ness (2011) remarks on the climbing community; *“The climbing “community,” as the practitioner population typically identifies itself, has a fluctuating membership that can be estimated in tens, if not hundreds, of thousands. Its sites of practice are located on every continent, in urban, rural, and undeveloped environments.”* I focus in this study on the alpinist part of the climbing community. The central binding principal for alpinists as a group, is a passion for the mountains. Nevertheless, the interpretation of this passion can differ greatly. Alpine climbing, ski touring, ice climbing, rock climbing in alpine terrain and free riding are just several ways in which alpinists express their love for the mountains. Looking at what the practitioners of these sports share, than alpinists can be defined as *individuals who can be found, year round in the mountains who are leaving the existing trails to create their own*

³ For more detailed information on the selection of the research population see appendix I.

paths. This definition is excluding hikers, mountain bikers, skiers and snowboarders, as they stay on the existing paths and prepared ski-slopes.

Throughout my research I have employed different research methods⁴. I mostly collected data through open interviewing and sometimes through semi-structured interviews and informal conversations. At the end of my fieldwork I had interviewed a total of twenty-three⁵ individuals. I also attempted to use a digital questionnaire to support my findings, however although I contacted dozens of people there was a considerable lack of responses. In addition is the whole study supported by collected literature.

§ 1.3 Overlook

This study looks at how the alpinist community of the Chamonix valley experiences, copes with and adapts to climatic changes in their living environment, the mountains. I will present in this study the perception of climate change through the eyes of the alpinist community, by showing, 1) the direct changes in their natural environment, 2) and sketching their interpretation of them. To achieve this, I present the aims of this research, the demarcations and the scientific relevance in the first chapter. This is followed by chapter two, which will offer an insight into the Chamonix valley community, and the alpinist community. On first sight, the Chamonix valley community looks like one solid whole as people need each other, but there are some big schisms between them. Chapter three continues with how a unique, specialised community, like the alpinist community experiences climate change in the Alps, and especially in the Mont Blanc massif. What have they experienced, how they feel about it, what are their coping strategies, and how do they see their future. Chapter four, concludes this study by raising some thoughts, discussion points and finally a conclusion. This is done by outlining and analysing, how climatic change experiences have affected the alpinist community and how they cope with them.

⁴ For more detailed information on the used research methods, see appendix I.

⁵ The research population consisted out of; eight Brits, four French, three Americans, three Dutch, two Icelandic's, one Swede, one Belgian and one Kazakh.

“And you know that those moraines were created by the last glaciers pushing through in the last ice age, which was only a few hundred years ago. Those moraines now look pretty high, and it is always impressive to see the moraines. It must have looked amazing those huge glaciers, but for a person living in Les Tines in that time, it must not have been that amazing, because there is that glacier bulldozing through your field and knocking of your cow sheds.” (Rick Marchant)

Chapter 2) Chamonix du Mont Blanc

§ 2.1 The town - three seasons

§ 2.1.1 Summer

The first time that I visited the town of Chamonix du Mont Blanc, was in the summer of 2003. That year, I was traveling through the Alps with a friend. Somewhere, halfway Switzerland we were staying at a rainy campsite where we met a climber. While the rain poured down upon the roof of our cooking shelter, he told us stories about the climbing around Chamonix. My mate and I looked at each other, and the next day we drove down to the France Alps.

You need to cross the French border and the Col des Montets to enter the Chamonix valley. From the top of the Col des Montets, the valley opens up and your breath is taken away as you get your first impression of the Mont Blanc massif. Massive 4000m high snow-capped peaks tower over the left side of the valley, while sharp rock peaks guard the National Park, the Aiguilles Rouges, on the right side. Both massifs rise up steeply from the valley floor and are big playgrounds for climbers. The first village you will pass after descending the Col des Montets is Argentière at an altitude of 1400m. The streets of Argentière are empty in summer, but in winter they are bristling with life, as it is a highly popular winter sports village. Continuing down the valley floor several other small villages⁶ have to be crossed before finally reaching Chamonix at an altitude of about 1035m. While driving down the valley it is impossible not to notice the cable cars, right and left, going up the mountains, indicating a very busy wintertime. Chamonix is a small, old, densely packed town. It became world famous at the start of alpinism, as

⁶ See appendix VI for a map of the valley.

the Mont Blanc range is seen as the birthplace of alpinism. In addition it has a long tradition as a touristic hotspot, as it is home to the highest mountain of Western Europe, the Mont Blanc with an altitude of 4810m. The town is small and long, as it follows the natural line of the valley floor between the two steep mountain ranges. It is also densely packed, as almost every possible square meter has been used as building ground. As a consequence, of the popularity of Chamonix and the scarce space, have real estate prices rocketed sky high. As the town follows the course of the valley, it can be swiftly crossed in its width, but crossing the town in its length takes much longer. In summer, the whole town breathes tourism and alpinism (in winter it is winter sports and tourism). Everywhere you look, you see references to (the birth of) alpinism and climbing. You can see it in the street names, (Rue Mummery, Rue Dr Paccard, Avenue de l'Aiguille du Midi) shop signs (Technique Extreme), names and the in- and exterior of bars, restaurants and hotels (Bar du Sports, hotel Alpina, Grand Hotel des Alpes). From every stance in Chamonix it is possible to see the mountains, steep rising rock towers and pyramids, with sharp, snow covered summits. Sometimes there is a gap in the mountain range, a gap eroded by uncountable years of glacial ice flowing into the valley. These gaps house massive glaciers, which together, with the steep mountains are so characteristic for the picture of the Mont Blanc massif. Although out of reach for most tourists, the peaks still seem so very close. This makes it an ideal place for day-visitors, creating a feeding ground for stories to tell at home. To back up these stories all manner of keepsakes can be bought in the multiple gift shops, which are full with miniature climbing gear, stuffed alpine animals, posters of the Mont Blanc, Mont Blanc/Chamonix t-shirt's, etc. Braver souls can buy or rent the real mountaineering gear, in the numerous present outdoor-shops, and hire a mountain guide to take them up those peaks. Tourism runs in the veins of Chamonix, without it, Chamonix wouldn't exist as it does today. Straight through the middle of the town runs the main street packed with gift shops, restaurants, bars, hotels, rental/event companies and more shops. The high dependence on tourism and the attraction of the mountains on the tourists leads to a commodification of the Alps and Mont Blanc in Chamonix. An English respondent remarked on Chamonix;

“This Chamonix to be honest is to busy, to touristy, to much for me. So it doesn’t sit very well with me, this invasion of wild places to be honest, even when I am part of it.”

Through all this tourism and the connected commodification of the alpine environment, it is easy to forget that this town is the alpine climbing capital of the world. Although there will be lots of alpinists busy with climbing in the mountains, overlooking Chamonix, down in the valley, it is a big tourist hotspot. Most residents of Chamonix are dependent on this commodification of the Alps for their livelihood. Hence, most Chamonians speak some foreign languages, especially English. When trying to speak French in a shop, one only needs to make a slight mistake or hesitation and one will be quickly addressed in English. In addition, for most jobs, speaking English has a higher priority than speaking French. Due to the huge emphasis on tourism, French is almost second to English. During winter times, the town is flooded by Swedes, making the mastering of Swedish also a very big plus. Throughout the town there are statues, wall paintings and information signs about the mountains, first ascents and alpine heroes. Two of these statues stand out (pictures 2 & 3). From the view point of both statues it is possible, on a clear sky day, to see the summit of the Mont Blanc. That one can see the summit of the Mont Blanc from these statues is no coincidence. The people portrayed on these statues are the two first ascendants of the Mont Blanc, Jacques Balmat and Michel-Gabriel Paccard. Horace-Bénédict de Saussure, is also portrayed as he is considered to be the founding father of Alpinism.



Picture 2 Statue in the centre of Chamonix. Jacques Balmat (right) , one of the two first ascendants of Mont Blanc, points out the summit of the Mont Blanc to Horace-Bénédict de Saussure (left).
Photo: Wouter-Dirk Huitzing.



Picture 3 Statue in the centre of Chamonix. Michel-Gabriel Paccard, with in the background the mountain range of the Aiguilles Rouges.
Photo: Wouter-Dirk Huitzing.

After several failed attempts, it was finally in the year 1786, that Paccard and Blamat made the first successful ascent of the Mont Blanc. Although it was a remarkable accomplishment in the early history of Alpinism, these days the summit of Mont Blanc has become a tourist attraction. Every year, are countless alpinists and tourists visiting the 4810m high summit. Many of the streets are named after famous alpinists or mountains and several of the more successful outdoor, alpine brands have their roots in the Mont Blanc region. So, taking a stroll down Chamonix creates a feeling of being in the mountains, while not really being in the mountains. It is more like an amusementpark as people can have the idea that they are experiencing the mountains, while being perfectly safe and able to spend a lot of money. Like in an amusementpark, people can spot figures walking through Chamonix. Especially in the high season, alpinists can be regularly seen to walk down the main street or sitting at a terrace, often still wearing most of their gear. In most cases these alpinists have just come down with one of the cable cars. In combination with the Mont Blanc, is Chamonix's main attraction, the Aiguille du Midi cable car, which is almost centered in the middle of the town. This cable car goes up, in two steps, to Aiguille du Midi at 3800m, and is busy whole day in both the summer and winter high seasons. In summer, the first cable car goes up around 6A.M. and it is completely packed with alpinists. While the day passes on, more and more tourists mingle with the alpinists and at almost every day a cue of more than an hour rapidly forms. At most times, Aiguille du Midi offers a clear view on the summit of Mont Blanc, the Vallee Blanche, and the

Chamonix valley. In the summer of 2004, an accident happened while doing a maintenance control on the Aiguille du Midi cable car, and it had to be closed down for several weeks. This cost the town millions in lost income. At the opposite side of town, lies Les Gailliards, a park and rock-climbing area. Whole families go picnicking below the rocks, while other family members are climbing at a couple of meters distance. Groups of local youngsters are hanging around, sunbathing, playing soccer and relaxing. Climbing and alpinism are in every pore of Chamonix. Tourism, alpinism and Chamonix are therefore inseparable and visiting the town is already an experience in itself. The town of Chamonix and the whole of the Chamonix valley, affords visitors a very wide variety of possible activities by which they can construct experiences of place. The local authorities are aware of Chamonix's position and how the outside world looks at the town, they like to keep it that way, and want to attract tourists. One way they are doing this, is by organizing festivities and competitions dedicated to outdoor sports. In summer, these activities are dedicated to alpinism, mountainbiking and other "extreme" sports, and in winter to skiing, snowboarding and iceclimbing. Most of these events are (co)-hosted in English, and internationally aimed. The international sport character of Chamonix already started back in 1924, when Chamonix was the hosting the very first winter Olympic Games. Not only did it host the first winter Olympics, the valley is also home to several Olympic medal winners and winter sport world champions.

§ 2.1.2 Winter

For each place, occurrence, experience, a person will only get one first impression. These first impressions will differ from the first impressions of others, as everybody has personal, subjective feelings and their own preferences. Although you can only get one real first impression, the experience of a town like Chamonix du Mont Blanc will change depending on what moment of time you are visiting the town. And if you revisit Chamonix at another time, during a different season you will have a different experience. The hardware will be the same (infrastructure, environment, mountains), but the software will change per season (different public, tourists (skiers, day folk, alpinists), different general languages (English, French & Swedish), different looks (snow or grass and rock), and different activities). Summer and winter are so different, they are two sides of a coin, they

are similar, but at the same time they are so different. Hence, when one is asked to describe Chamonix, one should reply; “at what time of year?” Since my first visit in 2003, I have been visiting Chamonix once or twice per year. So at a certain point I knew my way better around in Chamonix than I did in Amsterdam. However, I had never been to Chamonix in the winter. So, finally in February 2010, I got my “first” winter impression of Chamonix and its surroundings.

I planned to drive down to Chamonix the same way I always did, crossing the Col des Montets. However, in winter the road over the Col is often covered by snow and ice. I hadn't really thought about that, however I was lucky and it had just been cleaned. If it wasn't, I would have had to take a detour over hundreds of kilometers. The road was icy and I had to drive slowly. While doing that, I passed several tracks going off the road and a car in a ditch next to the road. This all was new. Upon entering the Chamonix valley, I didn't know where to look. Everything was white, snow everywhere. Not only did the whole valley look visually different, it also felt different. Every summer, the town of Argentière looked deserted, but now in winter it was full of life. Everywhere people in ski clothes, with skies and snowboards. Chamonix was also completely different. Where, I normally saw alpinists and day-tourists, now I only saw people in winter clothing, going to ski, coming back from skiing or going to après-ski. The shops which I always visited to buy climbing gear or to repair my bike, now only held skies and snowboards. Is Chamonix in summer attracting tourists from everywhere, in winter it are mainly English and Swedes enjoying their holiday. This is reflected in the fact that several bars are almost completely Swedish and people are often addressed in Swedish and English instead of French. The whole town seemed to have had a metamorphosis. The infrastructure was still the same, but the rest was so completely different. In summer the whole town puts a massive emphasis on alpinism and climbing, but in winter this is all put away in a little corner and everyone and everything focuses on winter sports. I was already accustomed to the fact that it was always busy at the Aiguille du Midi cable car, but in winter it is even busier. This is due to the fact that from Aiguille du Midi it is possible to ski down the Vallée Blanche. Although it is officially not a ski piste, and every year several people die by skiing into a glacier crevasse, is it a highly popular glacial ski descent from almost 22km. In summer, people go up to Aiguille du Midi to look around and go down again. In

winter people go up, ski down and go up once more, which causes a massive increase in the amount of people going up.

§ 2.1.3 The intermediate season

Most places in the world recognize the four different seasons of summer, fall, winter and spring. Chamonix however, knows only three seasons, namely summer, winter and the “intermediate” season. The summer and the winter seasons are stretched. Summer starts at the end of May and continues until the second half of October. After a short intermediate season, the winter kicks off at the end of November and continues to the end of April. Then the second intermediate season starts, which is followed by a new season cycle. Although the intermediate “season” comes twice a year, and differs a little bit, this season can be seen as one “season”. The earlier mentioned metamorphosis of Chamonix happens at this time. The intermediate season is a short, one month period, a quiet time, when the tourist industry of Chamonix takes its own holiday. Seasoners go home, valley residents go on vacation, cable cars shut down, shops, bars and restaurants close and there is hardly anyone on the streets. Shops completely change their inventory and shop displays; ski-clothes, skies, snowboards and, snow-goggles make place for climbing ropes, shorts and, hiking boots or visa versa. As many facilities close or are shut down, people have to find other things to do. It is still possible to go climbing, however one misses the convenience of the cable car taking you up thousand meters. On the other hand, the months May and October often offer great climbing conditions and less competition as most other alpinists are too lazy to walk up.

§ 2.2 The valley communities

Before I can show how climate change in the mountains is being experienced by mountaineers, I first need to say a word on the complex Chamonix valley communities⁷. From the outside, the Chamonix valley looks like one community. However, seen from the inside, it can be seen that there are different social groups. Inhabitants of the valley come from all over the world. However, three nationalities are represented the most. First of all, there are the French making up the biggest group, which is not that strange as Chamonix

⁷ By the Chamonix community, this report means the whole valley community, including Argentiere, Le Tour, Les Bossons, les Houches and the smaller villages.

is part of France. The second group are the British. The Mont Blanc area has always attracted British alpinists, which has resulted in a historical bond, between British alpinists and Chamonix. As a consequence, Chamonix can sometimes appear to people as a British colony. Many British mountain guides have settled in Chamonix and work there the whole year round. The Swedes are the third group, they also have an historical bond with Chamonix, however mostly for winter sports and the bond can not be easily explained. Since decades, Chamonix is overrun every winter by Swedish youngsters, to ski and party. In summer, there are still Swedes around, but not significantly more than any other nationality. Next to these main nationalities, people from all over the world can be found in the valley. I have met Aussies (Australians), Kiwi's (New-Zealanders), Canadians, Columbians, Icelandic's, Germans etc.

The second reason, that there is not one solid Chamonix valley community is that there are actually three sub-groups, which stand out and socially interact as least as possible with eachother. These social sub-groups have their own social spaces and social boundaries. First of all, there are the *local inhabitants*. This group is born and raised in the Chamonix valley or has been living there for a long time. The second group, which I have labelled the *temporarily staying internationals*, is a group of people who are living temporarily in the valley and stay between just one season or a couple of years. These people are often skiers, snowboarders or alpinists who are drawn to the Mont Blanc massif to ski, climb, or both. The third group, are the *tourists*⁸ who are coming to Chamonix. These groups are so different from eachother, that in most cases it is possible to pick out individual members in the streets, by the way that they move, behave and/or dress. Before I will go into more depth on these distinct groups, I first want to say something on how the groups interact with eachother. Although the groups are very social and warm towards their own members, there is no real social mingle between the groups. This lack of social exchange makes the groups rather closed, the groups have social boundaries which are not easily crossed by individuals. Still, as Chamonix is rather small, are the groups depending on eachother in daily life, but this daily interaction is mostly business.

⁸ For this research this group is seen as one, but in the tourists group there are also a lot of several sub-groups, like alpinists, skiers day-folk, etc.

One of my respondents, a born Brit, but already living in the Chamonix valley for more than twenty-seven years comments the following on the local community;

“People here in Cham are very special, for a start they don’t like each other, they can’t communicate, so they can’t be bothered by the other people. Tourists, they have always hated the tourists, they want them to come, leave their money and go again. That has been the traditional attitude”.

§ 2.2.1 Local inhabitants

As already outlined in the text above is the group of *local inhabitants* born and raised in the Chamonix valley, or they have migrated to it for some time ago. Just migrating to the Chamonix valley is often not enough to be taken into the *local inhabitants* group, especially not for none-French people. As none-French people are expected to leave again at a certain time. Therefore, individuals who recently moved to the valley, often find themselves in the group of *temporarily staying internationals* before they are accepted by the *local inhabitants*. Members of the *local inhabitants* can be from all nationalities, however most are French and British. Being French is not a criterion for becoming accepted, the fact that you are staying is. The mountains and the outdoors is for most of *local inhabitants* very important, for most of them it is in their blood as their family lineage holds several generations of mountain guides, ski instructors or glaciologists. This environment is the reason why most families have migrated to Chamonix, or why they do not leave. Locals talk very passionately about their mountains, their Mont Blanc. They also need to love their environment as there is not much else around. Talking to locals about people from other groups gives you a certain feeling. They are not really interested in individuals of other groups, they are more turned inwards, as to them, members of other social groups are all temporarily. It does not really matter if people stay for one night or six months, they all leave, they see them as “passing-by”. They only need these people who are “passing-by” to make their livelihood. As people are not accepted straight away in the *local inhabitants* social group, they often start out as *temporarily staying internationals*. This shows that there is some exchange between the social groups and people can (eventually) cross the social boundaries between groups. Many people in this group work in the tourism sector (cable cars company, ski-instructor, restaurants, shops, etc), as it is the

biggest sector in Chamonix. This is especially the case for non-French people. The French local inhabitants had more options to work and are working in all kinds of sectors. In many cases, they live in Chamonix, but working outside the valley. Most respondents of this study came from the group of *local inhabitants*, because respondents in this group were, in general, older than those from the *temporarily staying internationals*. Being, both older and living locally gave these individuals extensive local knowledge on the Mont Blanc massif and the time to experience changes due to global climate change. In addition, the individuals in this group were easier to track down as they were known by others.

§ 2.2.1.1 *Youngsters of the valley*

The Chamonix valley is a small valley, and except for the mountains, nature and sports, there is not much to do. This means that there is plenty to do for people who like to do these kinds of things. However, if one does not like mountains, nature and sports, than Chamonix is not the place to be. In the case of Chamonian youngsters, it can be clearly noticed that some of the young inhabitants are struggling and that they need to choose, whether they want to stay or leave. In many cases is the community of Chamonix representing the ideals of the parents but it does not always represent the ideals of their children. Youngsters struggle with the community and their surroundings. This struggle often has two possible outcomes. One, the youngsters embrace the mountain environment and become very good in outdoor sports as they grow up with the mountains, or they reject the small community and are looking for a way out as soon as possible. This second group sees Chamonix as a small rural place in the middle of nowhere. The first group most likely explains the relatively high amount of professional, extreme, and Olympic sportspeople.

§ 2.2.2 Temporarily staying internationals

The second social group, consists of people who come to Chamonix to stay for a certain time, with the clear intention to leave again. I have named this group the *temporarily staying internationals*. This group is characterised by being a very international group, which uses English, rather than French as their main language. In addition, most individuals are climbers or skiers who have taken a sabbatical to go climbing and/or skiing.

Not every member of this social space is international, a small percentage are French who have moved to Chamonix. However, the amount of French individuals in this group is limited, this is most likely due to the fact that they mingle and assimilate more easily in the social space of the *local inhabitants*. The main reason for *temporarily staying internationals* to come to Chamonix is a link with the mountains. In this regard, this group is the same as the *local inhabitants*. Nevertheless, the level of experience with mountains and the personal ambitions these individuals have varies widely. Some people come for hiking and piste skiing and for others, skiing and climbing is their lifestyle. In general, are most of the group, young people from between twenty and thirty-five years old. A second striking similarity is that most have followed higher education. I have no explanation for why this is, however alpinism has a tradition of being an elite sport. Most people come to Chamonix on their own, with a holiday feeling, these are two important reasons why most individuals are probably very open to make new friends. This is in contrast to the social group of the *local inhabitants*, which is mostly closed to new people, as they see them as just “passing by”. People meet everywhere, at climbing areas or in bars, or are easily introduced by other people, when doing activities (climbing, skiing, parties, and barbeques). However they do not only meet easily with members of their own social group, they are also very open to people from other groups, who themselves are open to it. One thing that really catches the eye when people meet for the first time is a specific series of questions. Most people might be unaware that they ask these questions, however I noticed that almost everybody asks these questions when meeting new people. The questions asked are always more or less formulated like; “*How long have you been here?*”, “*How long are you staying?*”, “*What are you doing here (sports, work, study?)*”. People test each other, and check each other to see where they stand, and what this person can mean for them. Some of the longer staying members of this group get irritated by the fact that most people will leave again at a certain time, which they say makes it hard, or not worth it to invest time and energy in new people. In this regard, these people are like the *local inhabitants*. On the other hand, there are also individuals who keep on grabbing every change to meet new people, as earlier made friends are constantly departing from Chamonix. The minority of the respondents of my study came from the *temporarily staying individuals*. However, most of my informal talks about my study were with individu-

als of this social group, as I found it easy to connect with this group. As many individuals were in their mid-twenties they were not able to remark on experienced climate change changes in the Alps. Still most had heard stories and seen pictures, which gave them an opinion about the subject.

Although most *temporarily staying internationals* plan to go back, some are grabbed by the Chamonix fever and stay, eventually crossing the social space boundary to being a *local inhabitant*. It is impossible to say exactly when and how one crosses the boundary between the social spaces, as it is a very gradual process. The moment in time and the speed of the process will differ for each individual, and is depends on factors like social surroundings, job, mastering the French language etc.

§ 2.2.2.1 Working

Many *temporarily staying internationals* need a job to finance their stay in Chamonix. Most of the jobs for internationals can be found in the tourism industry, as most speak fluent English but not fluent French. Higher educated jobs, outside the tourism industry, are almost exclusively for the *local inhabitants*, and or some of the French import. A big exception are people who can work home-based. I met some graphic designers and an ICT specialist, who were able to make a living. The fact that there are almost no higher education jobs in Chamonix frustrates a lot of people, as most climbers have done some form of higher education. In addition most jobs in the tourism industry are badly paid and require no mental input at all. This is probably one of the main reasons that people stay temporarily, as they do not see themselves working in tourism the rest of their lives.

§ 2.2.3 Tourists

The *tourists* are the third social distinguished group. This social group comes from all over the world, including France itself. Although this study is grouping the *tourists* as one social entity, is it impossible to generalize this group on any characteristics like age or nationality. Nevertheless, based on their period of staying, the *tourists* group can be divided into two sub-categories, *day-tourists* and *longer staying tourists*. The *day-tourists* see Chamonix as an experience. For them the actual mountains and the outdoors are not that important. They just want to ride the cable car up to Aiguille du Midi, see Mont Blanc, stroll through Chamonix and have their picture taken with an alpinist. This stands

in striking contrast to the *local inhabitants* and the *temporarily staying internationals* for which Chamonix represents a complete lifestyle. Due to this striking contrast, there is a strict boundary between the social spaces of these groups and almost all social exchange is purely business. The motivation of the *longer staying tourists* is different as they mostly come to enjoy the nature and the outdoors by hiking, climbing or biking. As the *longer staying tourists* do not just come for the experience, they are sometimes able to cross (partly) over in the social space of the *temporarily staying internationals*. In winter, there are almost no *day-tourists*, as most people come to ski for one or more weeks. The difference from summer and winter tourism can clearly be seen at the Aiguille du Midi cable car. As in winter it is completely packed with skiers, and maybe several alpinists, but almost nobody goes up to just have the experience and to look around. While the opposite happens in summer, as almost every person is a *day-tourist* going up just for the experience and the view. Just as the boundary between the *local inhabitants* and the *temporarily staying internationals* can be fluent, so can the border between the *temporarily staying internationals* and the *longer staying tourists* also be fluent. This makes it sometimes hard to say whether someone is a *tourist* or a *seasoner*, as some *tourists* stay for a long time.

§ 2.2.4 Final research population

The *tourists* group is left out of this study as most are just *day-tourists*, “passing by”. First of all, are *tourists* almost impossible to pin-down for an interview, as they only have so much time to spend in Chamonix. Second, as for most people it is just an experience, they would not have anything to say on climatic changes as they have no reference. Third, almost none of these people are alpinists or have a long enough experience of the Mont Blanc massif to provide any relevant information. The other two groups, the *local inhabitants* and the *temporarily staying internationals*, are presented throughout the rest of this study as one group. This has been done for several reasons. First of all, presenting them as two separate groups would have given a too small research population of the *temporarily staying individuals*, as not enough fitted the criteria. Second, both groups are experiencing the same affects from climate change. The only difference in the way of experiencing is the intensity. *Local inhabitants* experience climate change more intensely

since they live there, this will also give them a longer record of experiences in the same area.

§ 2.3 On social and geographical spaces

The French philosopher, Michel Foucault used terms like spaces, and spatial distribution. To him was “*space fundamental in any form of communal life*” (Foucault, 1984). We can see that, between the different communities of Chamonix there is also a spatial distribution in how they interact (social spaces) and where they go (geographical spaces). The earlier distinguished groups share the geographical space of the valley floor. However, higher up in the mountains, people are limited in their movement due to natural, geographical boundaries. According to Ingold (2000) can various kinds of natural boundaries be found in the landscape, but no feature of the landscape is, of itself, a boundary. A boundary only comes in existence in relation to the activities of people for whom it is recognized or experienced as such. Foucault (1984) calls these (geographical) spaces. Boundaries can be physical or non-physical, and some can be both at the same time. They are physical as a certain set of skills is needed to overcome these boundaries, but at the same time they are non-physical, as they can not be touched, as one can touch a fence. Geographical boundaries are mostly found in the higher regions. But on the valley floor, social boundaries are experienced, as individuals feel their access to the different social groups limited. Social boundaries are always non-physical. Having identified these two kinds of boundaries in the region we can say that, social boundaries are restricting access to a social space and geographical boundaries are restricting access to a geographical space. Next to physical or non-physical, boundaries can also be fluent or sharp, whether they be fluent or sharp, physical or non-physical, are always lines of demarcation, implying a transition area where one habitat changes to another (Turner et al., 2003). Boundaries are actually boundaries of transition, where habitat can mean social space or geographical space. For Chamonix, this mostly implies a transition from a safe, civilized area into a wild place. It is not always clear if a boundary is fluent or sharp as for example, it is unclear when one transitions from the *temporarily staying internationals* to the *local inhabitants*. Another example is a climber who will push past his skill limits (read: geographical boundaries) and will get himself in trouble. Still geographic boundaries can

also be very sharp. Take a look at the cover picture. There is just a small fence between the “tourist space” and the “alpinist space”. Still, no *tourist* would cross that geographic boundary on its own, as one side goes down for 1100meter. I will now further explore the different kind of boundaries. I will start with the social boundaries, followed by the geographical boundaries and then linking them together.

Social boundaries are no new concept, as many anthropologists have acknowledged them in their studies. Turner et al., (2003) identifies cultural transitional areas, as zones where two or more cultures converge and interact. Wimmer (2002) and Anderson (2006) found that communities always have a form of social closure and distinction. This means that a community is not free for anyone to enter. In doing so, these communities excluded people who are felt not to belong there, drawing a clear line between “us” and “them”. Timothy Brooke (2005) identifies frontiers and borders in his study. He defines frontiers as peripheral areas without administration or at least not a well-defined one, while passing a border implies entering a regulated area, a domicile. Therefore a domicile has a sharp, bordered zone of demarcation, while a frontier at best has twilight zones of demarcation. Using Brooke (2005), it can be said that the valley community is made up of a social equivalent of frontiers and domiciles, as individuals are given access to the overall global space of the valley community, but they are not allowed to integrate into the closed social domicile of the *local inhabitants*. In contrast we have the *temporarily staying internationals* a social frontier, as individuals are welcomed openly to join. Then there are the *tourists*, divided into the *day-tourists* and the *longer staying tourists*. This division is once again needed, as the *day-tourists* can be compared to the *local inhabitants*, being turned inwards. While the *longer staying tourists*, can be focused inwardly, but can also be open to others. All the distinguished communities have their own social spaces (Foucault, 1984), in which community members interact and move around. The social boundaries of these spaces are more or less bridged when climbing, in this regard, climbing can be seen as a cultural transitional area, as identified by Turner et al., (2003). When climbing, individuals are not interested in where you are from, but only in the conditions, the weather, climbing skills and the climb itself. As for the climbing community itself, it is open for anybody to become a member, as long as they participate in the witnessing and performance of climbing (Ness, 2011). Although this is definitely true, in

regards to the concept of closure, we can see that on one hand it is free for anyone to enter, however on the other hand there is also a kind of social closure as it is impossible to become an alpinist overnight. A certain amount of time and energy must be spent on learning the needed skills and techniques, but I will elaborate more on this later.

In the Mont Blanc region, are social spaces linked to geographical spaces, in two ways. First, the geographical area is what attracts most people to come to Chamonix. Second, certain skills and techniques are needed to be able to move around at certain parts of region. By having all these different spaces in the valley community, a layer system has developed itself. A layer system of who, has access to who and what. Going up a “layer-level” these spaces can see to come together and be connected. Social spaces and geographical spaces are interlinked as different social groups move around in different geographic spaces, turning these geographic spaces, into social spaces, and the geographic boundaries into social boundaries. Making ecological edges and cultural edges inextricably linked (Turner et al., 2003). For most of the *local inhabitants* the geographical area is exactly why they live in the valley. A large part of this group (or their ancestors) have migrated to the valley, because of the mountains. As mentioned in paragraph 2.2.1.1, are there also people wanting to leave as they have no affinity with the mountains. Once again the *tourists* must be cut up, as their often is a clear distinction in the climbing skills of *day-tourists* and *longer staying tourists*. *Day-tourists* often have no climbing skills and therefore feel limited in their movement by geographical space. *Longer staying tourists* sometimes possess the skills needed or have the time to go climbing with a mountain guide, thereby creating a connection between the *longer staying tourists* and the *local inhabitants*. Just as the *local inhabitants* live in the valley because of the geographical area, are the *temporarily staying internationals* also coming to experience the mountains. In contrast to the *tourists*, almost all of the *temporarily staying internationals* have all the skills needed to climb themselves. So they have no need for a guide, thereby cutting a direct social link to the *local inhabitants*. The points above lead to the conclusion that geographical space has a direct influence on the social space of the distinguish communities. In addition, for the Chamonix community as a whole, and communities throughout the Alps, there is another geographical boundary, the fact that in winter it is hard to access, as mountains cols can be closed.

§ 2.4 The alpinist community

§ 2.4.1 Alpinists, indigenous peoples of the Alps

According to the United Nations (1997) are “*indigenous peoples so-called because they were living on their lands before settlers came from elsewhere*” (United Nation, 1997). The high alpine environment has always been seen as dangerous and uninhabitable (MacFarlane, 2003; Stremlow, 2004), as a consequence have these areas never been officially colonized. However, since the rise of alpinism, an uncountable number of alpinists have explored the mountains and hundreds of mountain cabins have been constructed in the hostile high alpine environment. Hence, using the definition of the United Nations (1997) for indigenous peoples, we should be able to define alpinists as the indigenous peoples of the Alps. As alpinists are the very first humans, inhabiting the high alpine environment. The strongest contra-argument against alpinist being the indigenous peoples of the Alps will be the fact that, at a certain point, alpinists will always descent the mountains and leave the high alpine environment behind. Still, this habit can be seen as nomadic behavior. According to Ingold (2000), make people themselves a home in their environment, by constructing the world around them and creating their own reality. This is what indigenous peoples have done all over the world, but also what alpinists are doing in their alpine environment. By developing techniques, designing specialized gear, a world is created in which they can live and practice alpinism. In his book, *The Perception of the Environment*, Ingold (2000) questions how human beings perceive the world around them. According to Ingold there can be no environment without an organism. He says, “*my environment is the world as it exists and takes on meaning in relation to me, and in that sense it came into existence and undergoes development with me and around me*”. But we should not confuse environment with nature. For, as Ingold (2000) says, the world can only exist as nature, for a being that does not belong there. In that view, we can clearly see that alpinists live in, and have created their alpine environment. MacFarlane (2003) supports Ingold in his development view as he is saying that the minds of climbers have attributed emotional properties to the Alps. He says “*mountains are simply there. But they are also the products of human perception; they have been imagined into existence down the centuries. What we call a mountain is thus in fact a collaboration of the*

physical forms of the world with the imagination of humans – a mountain of the mind.” Ness (2011) argues that climbers do not actually build their climbing environment, as it already existed in nature before any climbers came. However she points out that the mountains also no longer exist in a state of wilderness either. According to her, climbers have *“reoriented their climbing sites, as a site developed and maintained by the climbing community for their own particular purposes.”* So according to these authors, have alpinists left a clear impression on their alpine environment, as it can no longer be regarded as nature. I support this view, as alpinists are often following pre-created trails through the mountains. Although most of these trails are not visible in the physical alpine landscape (except climbing tours like the Mont Blanc normal way, which leaves a clearly observable trench in the landscape), are these trails/climbs very precisely described in guidebooks. Guidebooks indicate where to climb, which turn to take at what point, what gear to bring, etc. These visions seem to support the idea that alpinists are the indigenous peoples of the Alps, as they have created their own world on a previous natural place. And with that we come also to the core problem of this study, climate change. Because they created their environment, it is seen as problematic that an outside force is changing what they have created. If it would just be nature, than there would not be a problem. However, as it is their environment, with their rules, their created playground, the fact that it is changing, due to climate change is a problem. Thus the distinction between nature and environment corresponds to the difference in perspective in seeing ourselves as beings within a world or as beings outside it. Hence Ingold (2000) is saying that climate change is a man-made perceived problem. Nevertheless, not al alpinists are seeing it as problematic that their “build” environment is changed from the outside. Rick Marchant made the following interesting comment on climate change in the Alps;

“It is not all bad, is it? Well none of it is bad, it is just different. People struggle with change I guess, and climate change is change.”

Another argument, for the alpinists are the indigenous peoples of the Alps debate, is that alpinists have found ways, developed techniques and have adapted themselves to survive and live in the high mountains, under even the most extreme conditions. Just like the San

people in southern Africa (Hitchcock, 2009) and the Inuit of the Arctic region (Henshaw, 2009), most members of the alpinist community are adapted and connected to the land of their lifeworld. *“Through living in it, the landscape becomes a part of us, just as we are part of it”* (Ingold, 2000). Climbing expeditions in the Andes and Himalayas are known to survive blizzards and extreme weather encounters and stay in basecamps for several months, with limited contact with the outside world. The alpinist community is specialized and has adapted itself to the site-specific high alpine requirements. Green & Raygorodetsky (2010) lay an emphasis on the importance of indigenous peoples as the main knowledge-holders of the site-specific knowledge of social-ecological systems. Here again can we see the alpinist community as the indigenous peoples of the Alps, as it was put forward earlier that they have site-specific (environmental) knowledge. In addition, alpinists have trained their senses with regards to the mountain environment. They read the landscape and therefore know where to walk best. Where to find a safe passage over a crevassed glacier, where they can expect an avalanche and which alpine techniques are needed to climb a specific spot. Several scientific studies mention the use of local skills or specific local knowledge by local indigenous people, Crate & Nuttall (2009) call it Traditional Ecological Knowledge (TEK), while Hulme (2009) talks about Local Environmental Knowledge. Green & Raygorodetsky (2010) give an interesting overview of recent new literature in regards to indigenous people and Indigenous Traditional Knowledge. The specialized skills of the alpinists can in this regards be called Alpinist Environmental Knowledge (AEK). It can also be called more generally as Specific Environmental Knowledge (SEK), as there are other sport cultures who also have their own skill set and knowledge, e.g. wave surfers (read the waves) and whitewater kayakers (reading the water and river-flow). The point I want to make here is that skilled sportspeople have sharpened senses with regard to their specific environment, and have a better understanding and perception of that environment than others. Having a good perception of the environment is needed to be able to read the environment and to make decisions (Ingold, 2000). Skilled climbers read their environment unconsciously. At the same time that they place climbing gear, they listen to the sound that the rock or ice makes. They constantly look at the weather and they know what to expect and when to expect it. When looking at conditions or grade of a climb they know by instinct how long the climb will take. Ingold

(2000), talks about vision, sound and instinct. Vision, sound and instinct are important for alpinists they can look at the mountains and know what to do at what point. Where not to go, where they are in danger and what gear to bring, and how long it will take them to climb it. Skilled alpinists will recognize the sound of a falling rock or a chunk of ice and more or less visualize this rock or ice falling. Therefore they do not have to look up and react in a blink to take cover, Ingold (2000) calls it “*images shaped in sound*”. There is a constant interaction between climbers and between their alpine environment. Alpinism is more than just a sport culture, as alpinists have their own, unique environment, which no other people enter. Surfers and mountain bikers are not the unique users of their environment. They share the seas, beaches, forests and hills with other users. In addition bikers and surfers get off their bikes and surfboards and leave the sea and bike-track at the end of the day, while climbers often stay high up in the mountains. Hence, although both surfers and bikers can see themselves as being a surfer or biker 24/7, are these cultures are less intensely experienced than the alpinist culture.

With regard to the uniqueness of the alpinist community, some words must be said on the cover picture. The picture shows the fence at the end of the ice cave at Aiguille du Midi. Tourists can easily reach Aiguille du Midi from Chamonix by cable car. On the fence is a sign, which says “*Acces interdit aux pietons! Haute Montagne*” (No access for pedestrians! High alpine area). This one sign, this one sentence captures the point I tried to make here, that the alpinist community is a specific elite community with specializes techniques, gear and knowledge. The fence should not be crossed without this specific knowledge as it is a dangerous place. The left side goes almost vertically down for 1100m. In this way it is not only a literal fence but also a figurative boundary. Physically it is very easy to cross the fence, but in reality it will scare most of the people to even think about crossing the fence, while alpinists pass it every day without a thought.

§ 2.4.2 The Alpinist culture an imagined community of “egoistic” individuals

Early morning on a sunny Saturday April I met with my Icelandic friend Robert Thor Haraldson, for the first cable car up to Aiguille du Midi. The night before we had decided that we wanted to climb the Chere couloir and ski down the Vallee Blanche afterwards. As it is a popular route we knew in advance that we would not be the only ones climbing

it. While skiing towards the route, we found out why it was called a classic. About five other climbing parties were heading towards our climb. After getting our gear out we started with the climb and we quickly overhauled an Italian climbing party (see pictures 4 to 7). From that point on, I kept on meeting one of these Italian alpinists. Every time we had to make a stance⁹, we talked and exchanged experiences, while also discussing our luck to be climbing with such a beautiful view on such a sunny day. After we finished the climb, we said goodbye and I have not seen him again.

Not only did I have an incredible climb with my friend Robert that day, I know that I also shared a beautiful climb and day with an unknown Italian guy, who I will probably never meet again. And although he is unknown to me, I do know that he will be climbing somewhere, some day. That Italian climber, his climbing partner, Robert and me, we have all been sharing something, something that makes us all part of the same social community. Those two guys were Italian, Robert is Icelandic and I am Dutch, but we are all alpinists. Nothing connects us four together, except that one and only climb,



Picture 4 Left. Climbing the Chere couloir with Robert. The highest climber is me, while on the left is one of the Italian climbers which climbed with the same pace.
Photo: Robert Thor Haraldson.

Picture 5 Right. Second pitch of Chere couloir. The couloir is only two meters broad, still you already see three parties in this picture, two climbing and one rappelling down (highest left).
Photo: Wouter-Dirk Huitzing.

⁹ Safety point from where you can belay your climbing partner.

Picture 6 & 7. Left. Robert following the third pitch of the Chere couloir. Right. Robert and me at the finish of the Chere couloir.

Photo's: Wouter-Dirk Huitzing.



and our passion for mountaineering. When I am climbing in the Alps I am often meeting other alpinists. As everybody is doing what they love to do it is easy to get a conversation started about the mountains, the weather or climbing conditions. Other mountaineers are often very surprised when I tell them that I am from the Netherlands. Most people picture the Netherlands as flat, even below sea level, so it surprises them that there are any climbers at all. Alpinists are often very easy with sharing information and talk to each other. The sharing of the same climbing passion, means that you have a connection, that there is a community, a cross-border, international community. Now in these modern times this connection, this community and free way of talking is also reflected in the new media. Internet is an easy way to get in contact with other alpinists and to exchange information on climbs, areas, conditions and weather. This information exchange strengthens the notion of an international community. New climbing techniques and gear are spread worldwide and simultaneously used. Yet most alpinists have not the slightest notion of these other users. The notions of culture and community are two of the central pillars of anthropology. In his classic book from 1983, *Imagined communities*, is the anthropologist Benedict Anderson clarifying his theory of imagined communities. This theory encompasses the idea that people imagine themselves to be part of a community, culture and that they feel a connection with other people from this group even if they do not know these people. Anderson says that in an imagined community there is a feeling of comradeship. Although no member of the imagined community will ever know all the

other members of this group, is it this shared background which makes them feel connected. However, the degree of membership and involvement in the climbing community can widely vary from occasional climbs, to the complete adaptation of climbing as a lifestyle (Ness, 2011). The connection that these alpinists are feeling is their passion for mountaineering and the way they go about in sharing this passion, their way (skills, technology) of climbing. Members of the community are able to recognizing each other, through the way they move, use their gear, and talk about routes and mountains. This shows that they have a certain level of mountaineering skills and know what they are doing. This makes community members able to predict what the other can do, and more important, what the other is unable to do, which leads people to earn mutual trust and recognition. According to Andreas Wimmer (2002) will; *“Culture comprises all the non-biological aspects of the life of a group ranging from their technology, social organization and religion to their typical personality traits. These cultural fields are integrated by a series of values and norms and so constitute a comprehensive, quasi-organic whole.”* The alpinist community can be seen in this light as there is special alpine climbing technology, however a real social organization and religion does not exist. Of course there are small patches of climbers who huddle together, and there are social gatherings and special media for alpinist, but there is no real recognized form of social organization. In this light there is more to say for Anderson (2006), with his imagined community which says that a community imagined as there is a feeling of comradeship. Hence it looks like the alpinist community can be seen as an imagined community, as the individual alpinists share several things together. However, it can be discussed how social alpinists are as every alpinist prefers to have the mountains and the climbing route solemnly for himself and his climbing party. This individualistic approach breeds a kind of competition to get up earlier or to walk faster to be the first on the route or the summit. Therefore does it look like that the imagined alpinist community is made up from egoistic individuals. Still there is a social side to these “egoistic” individuals, as they share with each other their strategies to cope with changes and problems. Alpinists tell each other about climbing conditions that they encountered at a specific mountain or route and which techniques and materials they have used to cope with these conditions and how (often very detailed) to pass that specific, hard (key)passage. Hence when alpinists encounter an unexpected

big bergschrund¹⁰ or find it impossible to get to the initial climb due to glacial lowering, they tell each other how they have dealt with that situation, they share their SEK. Possibly they used new techniques, or a different new start or maybe they decided not to climb at all. This sharing is however, mostly done back down in a bar on the valley floor (and nowadays there is also a lot of information sharing on the internet). So what does this egoistic, individual, imagined alpinist community share? If they would not share something, than you could not call it an imagined community, can you? Although they prefer to climb without other alpinists on their route, mountain or even in seeing or hearing distance, are there certain things shared. Coping strategies, climbing experiences/stories, techniques, the precise way to go up and mountaineering conditions are the things that the alpinist community shares.

When we look at the previous paragraphs we can see, that next to the alpinist culture, there are more imagined communities in the Chamonix valley, namely the earlier distinguished groups. Of course are there even more groups like the mountain-bikers, skiers, etc., however if I were to discuss all groups, then the central red line of this paragraph will be lost. After identifying the possibility of multiple imagined communities on different levels, there can be only one conclusion, that one can be a member of two or more imagined communities. Being a member of different communities makes it possible to on one point feel connected with someone, will at the same time seeing the same person as a member of another community. This can easily be the case with two alpinists in Chamonix who are climbing together, where one can be a member of the *temporarily staying internationals* or a *tourist* and the other of *local inhabitants*. One of the clearest examples in this case will be a mountain guide (*local inhabitant*) climbing with a client (*temporarily staying international* or *tourist*). Not anyone has the skills to just set of and to go into the mountains to climb. One needs climbing skills, routine and relevant knowledge about gear, mountains, weather, conditions, etc. Nevertheless if one is willing to invest time and energy, to build up experience and mountaineering skills, than that person will eventually become part of the alpinist community. However this person or any other person can always leave this community at any given time, without any need to give a

¹⁰ A bergschrund is the top crevasse at the end of the glacier, it consist of an upper and lower lip and it forms where the moving glacier ice separates from the stagnant ice above, which is frozen solid to the mountain face (Verlag Schweizer Lexikon, 1993).

reason. The alpinist community does not expect or ask for any loyalty, something which is expected of nations (Wimmer, 2002). Being part of a community like the alpinist community is a choice, an individual choice. A central term these days is *identity*, as the time of following traditions has passed. Individuals decide on their own identity, how to dress, how to be educated, what to do for a living, how to spend leisure time. This new identity seeking man is called by Raven (2008) the self-choosing human, or in Raven's exact words, the *Homo Volens*. Wimmer (2002) says on individuals that they are "*figuratively speaking, the clay form which culture forms its creatures*" and that "*in their thoughts, feelings and plans of action, individuals more or less follow the rules prescribed by their respective culture.*" It is exactly these self-choosing individuals that make up, create and bind a community like the alpinist community. Although an individual chooses for himself, there are more individuals making this same decision. And as man is a social animal, will a community only be imagined and formed around groups of self-choosing individuals. Ness (2011) points out in her study, on bouldering in Yosemite, that "*the climbing community is not governed by any single official organization, although numerous professional and recreational organizations represent it. The community at large defines itself primarily through informal, regular acts of performance and exchange.*" Although formal rules and a higher authority are absent, are there ethics in climbing, however these are not the point here. The absence of rules and the higher authority also makes the community, the culture and the climbing dynamic and evolving.

§ 2.4.3 Attraction or addiction?

George Mallory was asked several times why he went to climb Mount Everest, he replied; "*I suppose we go back to Everest... because in a word we can't help it*". In an earlier interview he had already replied to the same question; "*Because it is there*". In the end he died on Everest, without the world knowing if he reached the summit or not.

"He was born in the summer of his 27th year, coming home to a place he'd never been before. He left yesterday behind him, you might say he was born again, might say he found a key for every door. When he first

came to the mountains. His life was far away, on the road and hanging by a song.” (John Denver – Rocky Mountain High)

The sentences above are the first lines of the song Rocky Mountain High from the American country-singer John Denver. He captures in just a few sentences the feeling how the mountains attract and grab people. George Mallory, had described it even simpler; “*because in a word we can’t help it*”. Both quote’s describe a feeling that I, and with me numerous alpinists, have often experienced ourselves when I get back to the mountains, a feeling that I belong there, need to be there and that I am home there. As mentioned before, Chamonix is very international. All these people (or their ancestors) have been attracted by the mountains and found it impossible to leave. What is the attraction for any individual to go hiking, climbing or even to go living in the mountains? From the *tourists* who want to see and experience the mountains, to the *local inhabitants* who prefer to live in a mountain village, something is pulling people in and does not give them a chance to leave. What do people search in the mountains? Why are they grabbed and why do they stay? There is not one uniform answer to these questions, as there are so many reasons. However, it might be possible to take a closer look at what attracts the alpinist community to the mountains. What inspires them to go climbing in the freezing cold and sometimes risk their lives? Which screw might be loose in all these alpinists? In the months that I lived in Chamonix, I have spoken to a lot of people to get an idea of what kind attraction the mountains have on them. People told me about the *respect* and *awe* that they have for the Alps. They see the mountains standing there proud, unmoving for centuries, dangerous, uninhabitable, but still *fascinating*. But they also see them as an *inspiration* for art and *adventures*. The mountains are one of the last real wild places on our earth, where people are being *challenged* to survive. A certain set of skills is needed, man depends on himself and his climbing partners to conquer the mountain safely. Both this *challenge* and *inspiration* for art and *adventure* are a consequence of the immense *beauty* that the Alps have. Mountains create a kind of *fascination*, which slowly develops into an *addiction*. After each summit, there is another summit, another *challenge*, another *adventure* appearing. Of course there are always some more pragmatic people who just see the mountains as their *livelihood* as they are mountain guide or ski instructor. Al-

though, all the reasons given here are very good reasons to be in the mountains, as every last one can be a foundation for both a close connection and an emotional bond with the mountains. Still, I could have written down dozens more, as there is not one ultimate answer why people are attracted to the mountains. Maybe that is of one of the most intriguing things about the mountains and the alpinist community, the diversity that exists in them. These days the community is touched by the changes that are occurring in “their” mountains and through this emotional bond are mountaineers experiencing a feeling of sadness as they see “their” mountains degrade.



Picture 8. The ridge leading to Aiguille du Midi & the cable car to Aiguille du Midi

Reflection intermezzo

In my first year of anthropology, I had to read Bronislaw Malinowski's, *Argonauts of the Western Pacific*, and I watched *The Ax Fight*, from Napoleon Chagnon. Both left a big impression and I could never imagine myself doing fieldwork like Malinowski or Chagnon had done. The preface of Malinowski's book reads that "*Malinowski lived as a native among the natives for many months, watching them daily at work and at play, conversing with them in their own tongue, and deriving all his information from the surest sources – personal observation and statements made to him directly by the natives in their own language without the intervention of an interpreter* (Malinowski, 1922)". Both anthropologists did extended fieldwork and saw themselves as completely emerged in their cultures of research. However, decades later they are criticized. It is thought that the Trobrianders more or less showed Malinowski what he wanted to see, especially with regards to the sexuality of the women. And Chagnon was accused of influencing local conditions, by exacerbating a measles epidemic (Tierney, 2001), and underling relations, by handing out machetes and other goods (Ferguson, 1995). Looking at how Malinowski and Chagnon did their fieldwork raises mixed feelings with me, as they somehow were both in- and outsider. They saw themselves as part of the communities, but by just being there, they influenced their research communities. Over the years I learned that a good anthropologist becomes part of the culture he is researching, "*living as a native among natives*". However, if Malinowski, one of the founding fathers of anthropological fieldwork, already had trouble achieving this, than how can I ever manage to do it? So I wondered if an anthropologist can ever really become part of the culture he is researching, or will the fieldworker always stay an outsider. How can the "insider" write an unbiased report? Although I expected to easily integrate in the alpine climbing community of Chamonix, I did not really expect to solve the insider-outsider dilemma. However, integrating was not as simple as I expected. Nevertheless, in the end I think I did a good job in researching the alpinist community. I am convinced that the fact that I am an experienced alpinist, being "*a native among natives*", gave me a way in, which another anthropologist would not have had. The alpinist community is a unique, small, expert community with specific, specialised Alpinist Environmental Knowledge and techniques to survive in the mountains. Holding this knowledge gave me the opportunity to use technical terms and to ask the right questions, "*conversing with them in their own*

tongue". It also gave me the opportunity to do some alpine climbing myself. This being essential as it gave me a closer link to my respondents, the opportunity to share my personal experiences, and to answer questions of my respondents. Many respondents asked questions about alpine tours to see if I was able to "*converse in their tongue*" and to learn about current alpine climbing conditions. As questions were asked by both sides it gave the interviews a more informal feeling, and made people more on their ease. To learn all the needed alpine knowledge and techniques takes years, time which another anthropologist would not have had, which would have created problems with "*deriving info from statements made directly by the natives in their own language without the intervention of an interpreter*". An anthropologist without this knowledge would have, most likely, done a much more superficial research, as he would not have been able to "*converse with them in their own tongue*". It can be disputed, if I have succeeded in emerging completely in the local culture. When one is to say if I have been part of the alpinist culture, than the only clear answer can be yes, however if one is to ask if I have been able to become one with the Chamonix community than the answer can be both yes and no. The focus of my research is on experienced alpinists and mountain guides. These people mostly belong to the *local inhabitants*, while I myself, mostly moved around in the group of *temporarily staying internationals*. One could criticise that I should have put more effort in integrating into the *local inhabitants*. However, it is hard to mingle with the *local inhabitants*, as this social group is mostly turned inside as they see the other social groups as "passing by" and as a source of income. This left me without a stable base of contact. Nevertheless, most of my interviews were with *local inhabitants* as they have shown real interest in my research. They are passionately concerned about, and influenced by climatic changes in their mountains, as they have been there for a long time and have seen countless examples with their own eyes. This made them very eager to express their views, feelings and concerns to someone. These interviews were great for acquiring data, but it also provided me with a problem. It was impossible to do any participating observation, as none of the *local inhabitants* wanted to go climbing with me. This was for several reasons; 1) there was a big difference in climbing skill, 2) the absence of a bond of trust, as your life sometimes depends on your partner, 3) they have already many climbing partners, who they know and trust, and 4) for mountain guides it is their way of making a livelihood and so they expect to

be paid a fee. In contrast, it was very easy to go climbing with *temporarily staying internationals*. This group has a 180degree different approach at meeting new climbing partners. Most of the *temporarily staying internationals* come to Chamonix on their own. But, they all want to experience the mountains as much, and as intense as possible, therefore are most very open for doing activities. These people are easier in giving their trust to people and go climbing together. For example, I have been climbing, nevertheless under my level of skill, with people I had just met. In general all these climbing experiences were very pleasant. However, just like the *local inhabitants*, I would have thought twice about doing that if I was back in the Netherlands, where I have my own network of climbing partners. The *temporarily staying internationals* part of the Chamonian alpinist community is radiating a kind of trust, and people are expected to have experience and know what they are doing, as they are living in Chamonix. Unfortunately, although I met a lot of good alpinists in this part community, most of these climbers were still in their twenties. And as I was interested in experienced climatic changes, I needed respondents who had been climbing for a longer time, and therefore they could not be part of my research population. With this, I hoped to have given an insight in my struggles and a reflection on my integration in both the alpinist and Chamonix communities.



Picture 9. Central part of the Mont Blanc massif. With in front below, part of Chamonix and the Mont Blanc as the highest summit on the right. Photo by Wouter-Dirk Huitzing.

“So when I take clients down the Vallee Blanche and we walk up the stairs to Montanvers and they are complaining about the stairs, I will say; “that is thanks to you and me and climate change”.” (Zoë Hart)

Chapter 3) Climate Change in the Alps

Around the year 1850, the time known as the Little Ice Age ended, this marked the last highstand for the glaciers in the Alps. Since that time have the glaciers in the Alps been receding and have they lost approximately 50 percent of their total ice mass. Glacier models predict that by the end of the 21st century, another 50 to 90 percent of the now remaining glaciers are lost (Haeberli and Beniston, 1998), however some ‘Business As Usual’ (BAU)-scenarios (Latif, 2004) and other projections (Greenpeace, 2006; Alcamo et al, 2007, Farinotti et al., 2009) are even less positive as they expect that most glaciers will be gone around 2050. The disappearance of the glaciers will be horrendous as, *“glaciers have historically been important to Alpine culture for many reasons: as reservoirs for drinking water and power generation as raw materials for commerce, as tourist destinations, as visible markers of environmental change, and as repositories for lost souls. Glaciers play great roles in folk tales in many villages throughout the Alps”* (Strauss, 2009). The 18th century knew many myths in the Alpine countries about the mountains. Mountains were believed to be home to the supernatural, the hostile, and to mystical creatures (Stremlow, 2004). They were perceived as a dangerous place, a disaster like an avalanche could be easily triggered, or a (demi-)god or monster might be encountered (MacFarlane, 2003). Myths about monsters can also be found outside of Europe, in North America there are stories about giant copper-clawed owls or giant worms inhabiting glaciers (Cruikshank, 2001). When people truly started to explore the mountainous areas, and they did not encounter any monsters, the mountains were slowly demystified (Stremlow, 2004). The Chamonix Valley, knows its own alpine folk tale about the Mer du Glace. Around 1700, the Mer du Glace was flowing into the valley and threatened to destroy the village of Les Bois and to block the river, L’Arve. The valley residents perceived the glacier to be evil and dragonish and evil spirits were blamed to be responsible for the glacier reaching the valley floor. So the local people turned for help to the bishop of Annecy. He came down to Les Bois and performed an exorcism on the evil

spirits inhabiting the glacier. It is said that, since the bishop did his exorcism, the glacier has been retreating. Nowadays some people in the valley note that this bishop maybe did his work a little too well. Cruikshank (2001) mentions the inhabitants of Chamonix fighting the glaciers; “*desperate citizens drew swords to confront glacial caves and put crosses at the edges of advancing moraines in an attempt to arrest the onslaught of ice*”. The dragonish character from the Mer du Glace is reflected in some old representations of that time, as the glacier is portrayed as a dragon (picture 10) which is preying on the valley.



Picture 10 (left) Mer du Glace, portrayed as a dragon preying on the valley.

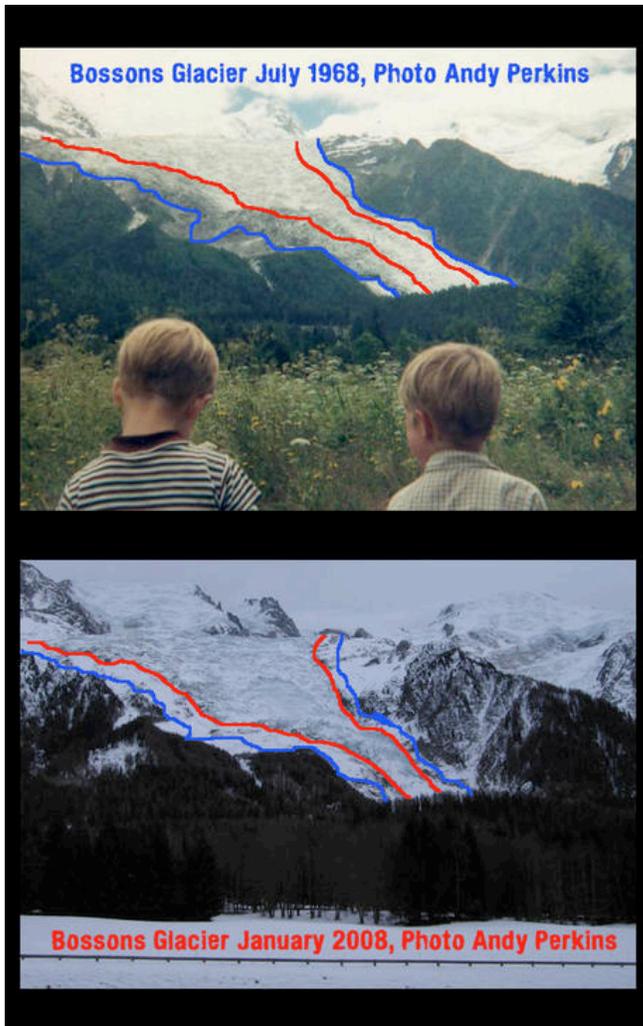
Picture 11 (right) True representation of Mer du Glace, in the time that it was also portrayed as a dragon.

Both pictures are part of the exhibition, *Glaciers et des Hommes*, which can be seen in L’Espace Tairrez exhibition area in Chamonix. *Glaciers et des Hommes* is on show since January 2007 until present.

§ 3.1 Experiencing climate change in the mountains

§ 3.1.1 Glacial retreatment

The moment you meet British mountain guide Andy Perkins you directly notice his sun-tanned face, an evidence of the many hours that he has spend outdoors, and a firm handshake, which shows the strength he has in his climbers hands. At first instance he looks to be very relaxt, but as a mountain guide he likes to pass on his experiences on to others,



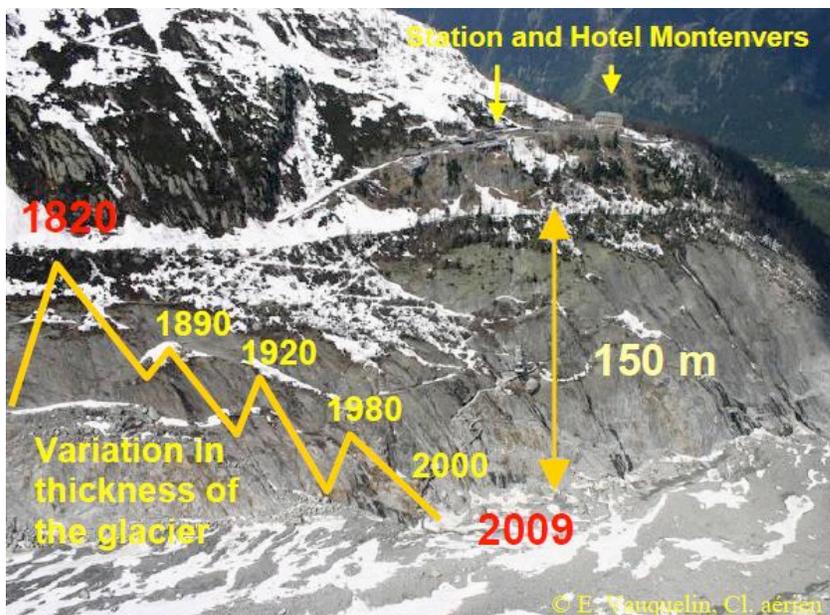
Picture 12. Photo and permission by Andy Perkins (<http://www.andymountainguide.com/>)

and the moment he starts to talk about mountaineering you can spot an enthusiast spark lighting up in him. Both his physical appearance and his enthusiasm radiates a confidence that he knows exactly what to do when being in the mountains, which is exactly what a mountain guides needs, to give his clients the trust that we will bring them back safely. Andy has turned 50 this year, but he still remembers coming to Chamonix as a kid in July 1968. During that vacation he took a picture of the Glacier Les Bossons, later in 2008, he made another picture from the exact same spot. Comparing the two pictures (picture 12) he can only come to the conclusion that global warming is responsible for the shrinking of

the glacier over the past forty years. Although Andy only has pictures of the Glacier Les Bossons, he can give many more examples of glaciers he has seen shrinking. His earlier enthusiasm, derived from talking about the Alps, slowly diminishes when talking about glacial retreatment in the Alps. His story carries an undertone of sadness with regards to the present state of the mountains. And it is not just Andy, but every last alpinist which has been climbing for some time, or has seen the pictures of the old days.

A second and even more famous glacier, in the valley is the Mer du Glace. That the Mer du Glace is shrinking is pretty obvious when you look at the ladders (pictures 16 & 18) which go down to Mer du Glace. These ladders are necessarily to keep it possible for both alpinists and tourists alike to reach the glacier down below. One day, late after-

noon in July, I took the tourist train up to the Montenvers viewing terrace, which overlooks the Mer du Glace, to take some pictures on glacier receding. Upon leaving the train I hear a French voice through the loudspeakers. The voice belongs to a man walking up and down the terrace with a microphone, explaining and pointing out to tourists how the Mer du Glace has changed as a result of “rechauffement du monde” (global warming). The man is Luc Moreau, a locally well known glaciologist. Luc is a man of average height, grey hair and a friendly, tanned face. When talking about the glaciers you can see his eyes sparkling. Luc specializes in the movement of the glacier, using time-lapse cameras. The Mer du Glace has a negative balance and is therefore decreasing in volume.



Picture 13. Shows the variation in thickness of the Mer du Glace glacier. Source and permission: Compagnie du Mont Blanc leaflet

Since the Little Ice Age it has lost approximately 150m in height (picture 13, and the comparing pictures 14 & 15). And during the last 25 years it has lost, three to four meters of height every year. To the alpinist community is glacial retreatment the most obvious and biggest consequence of global warming. Luc is trying to make people aware of the huge impact which climate change is having on the Alps. However, as most tourists will visit this place only once, they only get a snap shot which can not really show how big the impact of global warming on the mountain really is. People like Luc, Andy are living in Chamonix the whole year round. Being around the whole year lets them witness the actual, alarming speed of the glacial degradation on a year to year basis.

“people who are working in the same place all the time will see the changes. When you come here (Chamonix) for one week, you will only see what there (the climbing conditions and weather) is that week”, “I am here fifty-two weeks a year that is what I do. So you can have a much more accurate picture of what is going on” (Andy Perkins),

“Because we are out there at least 100, 200 days a year we see what is happening. And for some clients we are animals. But yeah, you try to talk to people, try to create a dialogue. Talk about what you see. It is all about sharing and to make them a little bit more aware. This is our reality. And what you do in life, what you think and what you do can help or affect our reality.” (Ulrika Asp).



Picture 14 (left) *Mer du Glace* in the year 1865. Photo J.F. Charlet, Source and permission: Compagnie du Mont Blanc leaflet

Picture 15 (below). Picture taken from *Mer du Glace* from the same position as the 1865 picture to compare glacial receding. Photo: Luc Moreau. Source and permission: Compagnie du Mont Blanc leaflet

Receding glaciers can influence alpinists and their climbing in several more ways. The Mont Blanc region is a high altitude area, as many peaks reach the height of 4000m. In almost every case glaciers have to be crossed, this concerns all



sorts of climbing, from easy walks to the hardcore high alpine climbing. Receding glaciers leave behind moraines¹¹ and smooth rock faces¹² at their sides. Both these moraines and smooth rock faces influence alpinists on their climbing tours by increasing the length, and often making it more dangerous, or even impossible. In the past people could easily traverse the glacier from one side to the other. These days they have to go down one moraine side and back up at the other side again. During the last years many accidents have happened on moraine slopes. Michiel Engelsman, is one of the five Dutch mountain guides in the world. He has seen and heard about many accidents, which have happened on the transition area from moraine to glacier. He emphasises that the moraine transition area is an instable place where rocks are constantly tumbling down or are accidentally kicked loose. This creates a dangerous place for alpinists from all levels. The direct consequence is that mountaineers have to be more careful than before to cross the same distance, which will result in a longer day and more spend energy. Lars Vanhaelewyck is a Belgian mountain guide in the middle of his forties, average build and long dark hair. He says that his clients often complain about the fact that they have to go up a moraine to get to a mountain hut, he said;

“Also with clients, when you are on a glacier and you want to go to a hut, you have to go up hundreds of meters through a moraine. Often the clients will ask, “Why did they build the hut up there?” And I will say, “When they where building the hut, the glacier was over there. It was placed next to the glacier.” These days you have to walk up for hundreds of meters.” (translated by author)

The smooth rock which appears by the lowering glacier does not only make a climbing route increases in its length, it specifically lengthens the route with a new and more difficult part. This new part can make a route impossible or harder in grade.

“Since the glacier has come down a few meters, it has added in some places 10 or more meters and it is usually slab and usually very steep and there is not much

¹¹ A moraine, is a by the glacier transported or pushed forward ridge of rock debris at the end of the glacier (Verlag Schweizer Lexikon, 1993).

¹² A glacier slowly moves. Due to centuries of glacial flowing, are the rock faces at the sides of the glacier smoothed down. Now as the glacier melts in height, the smooth rock is left behind.

to grip, so it adds difficulty. Especially as you start climbing, you can't get on.”
(Ulrika Asp)



Picture 16. To reach the Mer du Glace, tourists first need to take the gondola, which once reached the glacier, and then walk down additional stairs, which are added to every few years. Photo: Wouter-Dirk Huitzing.

Even if there are some holds to be found, it can be impossible to place any climbing protection, which means that the lead climber needs to climb it solo, which can be very dangerous. A mountain guide remarked on an accident that happened to one of his friends on the smooth rocks;

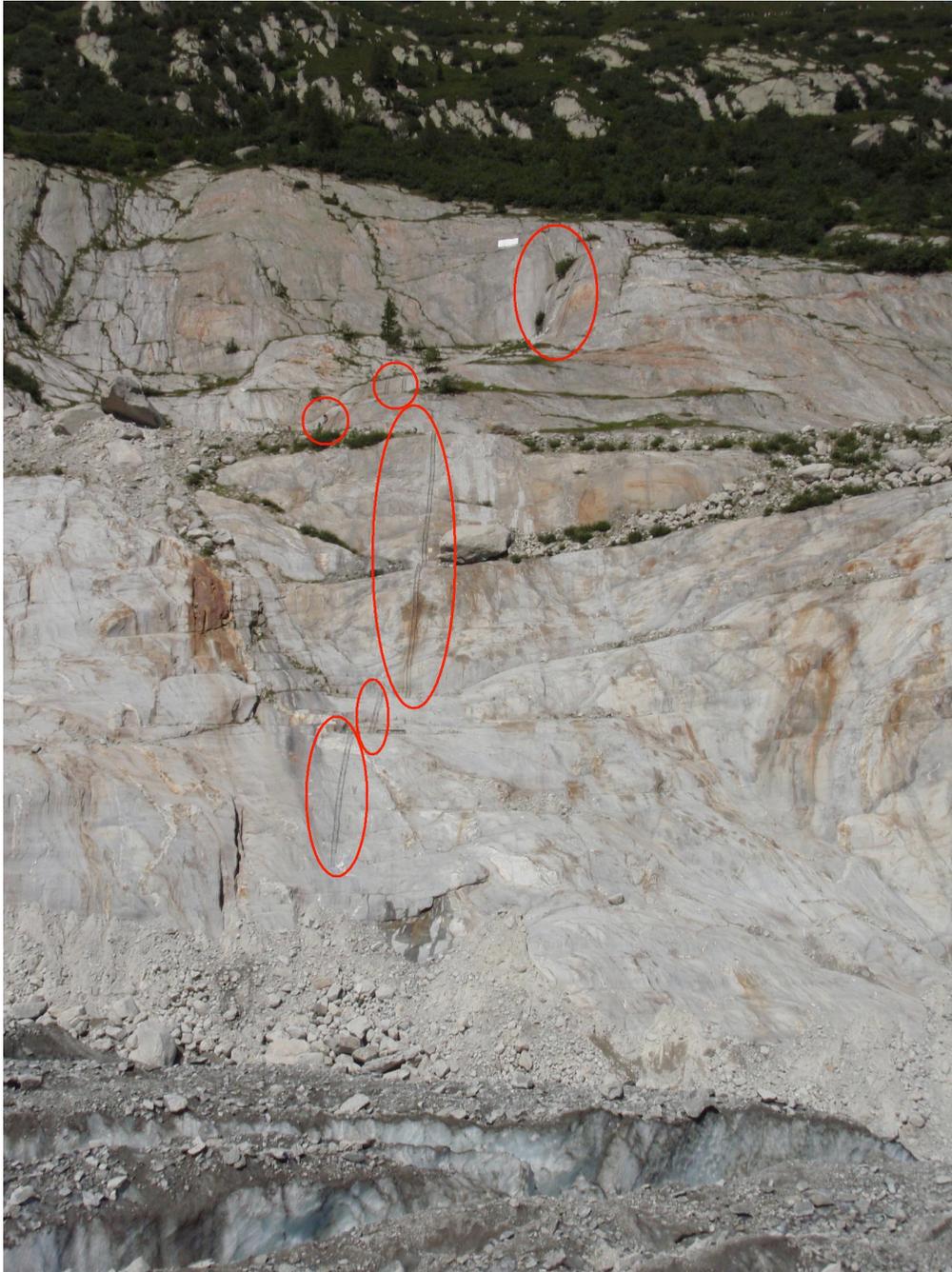
“..well as the glacier retreats the rock climbs close to the glaciers get harder to access, you know slabs. A good friend of my, got hurt trying to lead up, she didn't realize that it (the glacier) had receded so hard, she fell and broke her back..”
(Anonymous)

In any case will this new part increase the duration of a climb. Which can mean that earlier easy day trips, now have become two day tours. The harder access or the longer needed time can make climbs getting out of fashion and not being climbed anymore. In the case of traditional classic climbs, are a lot of alpinists feeling some regret that these are no longer possible. A lot of these climbs represent an important mark in alpine history as alpinists were crossing



Picture 17. Sign indicating the 1990 Mer du Glace glacier level. Photo: Wouter-Dirk Huitzing.

natural and physical boundaries, which were thought impossible to cross. Many of these routes were first ascended by a small group of early alpine heroes, their legacy is important and needed to be remembered by many alpine climbers.



Picture 18 The picture shows the ladders on the smooth rock, going down to Mer du Glace. The highest left circle shows two alpinists on the ladders. Photo: Max Cole, July 2010.

Another way in which alpinists are influenced by lowering glaciers, are the increasing steepness of adjacent mountain faces. Through the lowering of the glacier will the steepness of the surrounding ice and snow faces increase. This will influence alpinists and alpine skiers in several ways. A steeper face is more prone to avalanche danger, it is harder to hold a person from falling and a steeper face is harder, and more costly in energy to climb.

“As the Col du Midi is lowering, is the face of the Tacul becoming steeper. That is something that I definitely notice. If I remember correctly was this face not that steep twenty years ago. If I walk there now with clients on short rope, I often think by myself; “maybe I should do this differently, instead of just walking up here”.” Lars Vanhaelewyck (translated by author)

§ 3.1.2 Seasonal Change

When scrolling through a climbing guidebook, you will notice that for every climb the date of the first ascent is given. If you pay some closer attention, you will quickly see that most of the first ascents most of the classic and older climbs were in the summer months of June, July and August. However, most of the first ascents of the last two decennia have mostly been in spring and winter. Is this accidental, or is there a reason for this shift? All of my respondents agree unanimously that the climbing seasons have shifted. Seasonal change for climbing can however not be analysed on its own, there is a reason that the climbing season shifted. The shift is attributed to an increase in the average temperature, causing changes in climbing conditions, and shortening the climbable period. Hence, the best time to try to climb specific routes has shifted to earlier in the season. While discussing temperature increase, it was remarked by a local resident that several of the older inhabitants of Chamonix compared present winters, with the summers from their younger years. This shows that changes in temperature and climate have taken place in the last decades. Another climber told me he did not climb anymore in summer as he found summer climbing conditions really bad due to the hot temperatures. And one British mountain guide told me, that some of his friends had always had the rule that they would not go climbing if the 0°C isotherm was above 3000m. However they had to abandon their own rule over the last years, as they found their possible days of climbing becoming

very sparse. Not only are average annual temperatures getting warmer, it is also becoming warmer or colder at unexpected moments. Both Any Parkin and Alpinist magazine journalist David Falt commented respectively that;

“..winters were constantly cold when I began climbing, on the faces minus 30 all the time. It could be too cold to snow, but when it did snow, it was powder knee deep. Real powder and all conditions were cold.”, “..these days the autumn’s can be colder than the winters..”,

“..this year the three coldest days of the winter season, as what is defined as winter season, were the last three days of the winter season (...) The year before I climbed a round on Mont Blanc, and we were on 4400 and we had minus 6. That is warm for a winter ascent, and that was in February. February the year before, was hotter than end March the year after.”

One of my own personal experiences is that in the winter of 2009 it was raining at the altitude of 2000m around Christmas, when it should have been snowing that time of year. This was not a unique, as it was experienced simultaneously by several of my friends throughout the Alps. In contrast, in August 2007, after returning from a climbing trip, I found my car covered with fifteen centimetres of fresh powder snow in the Arolla valley.

§ 3.1.3 Weather extremes – the summer of 2003

The previous paragraph ended with rain at Christmas and fresh powder snow in August. Although these things have not happened often in the last years, they were not looked upon as horribly strange phenomenon’s. Many of my respondents have experienced similar occurrences during the last decade. This lead to the conclusion that the alpine weather is getting more and more unstable, unpredictable and especially that more weather extremes can be witnessed in the mountains. Extremes in high and low temperature, in precipitation and in wind have been mentioned. The most often mentioned extreme being, the extremely hot summer of 2003. Ask anyone alpinist, and he will tell you about the extremely hot temperatures of 2003. For several weeks the Chamonix valley temperature had been constantly above 33°C. The 0°C isotherm was all these times around the

5000m, which meant that snow and ice was melting and that there was no refreezing of the melted snow and ice at night. It was so bad, that even the ice cave¹³ at Aiguille de Midi, at 3800m altitude, completely melted. A sight, which nobody had ever heard of or had imagined being possible. That year a lot of people feared that, that summer was a forerunner for alpine temperatures in the future. People were greatly troubled by the melting of the ice cave in just several weeks. If that was possible at that altitude, what would that mean for the lower snow and ice? Questions were raised. Would the mountains ever look the same again? Was it possible for the mountains to recover from this extremely hot summer? Fortunately, although the next summer still turned out to be hot, it did not reach the extremely hot temperatures of 2003. Not only was it the first time that the ice cave had ever melted. It was also the same year that the governmental authorities, for the first time ever, closed down the normal way of Mont Blanc for several weeks, due to the extreme high temperatures. On some parts of the mountain it was raining rocks, which made it far too dangerous to climb it. Locally born French mountain guide, Gilles Claret Tournier, comes from a longstanding mountain guide family. He was working in Chamonix that summer and comments on the closing of Mont Blanc;

“Because there was continuously stone fall all day long, it was impossible to be safe. And ok, you can say, this is the mountains, but on those kinds of routes it is not the mountains anymore, because you have hundreds of people, and if you have stonefall all day, it will kill”.

A policeman was put at the start of the climbing route and he had to turn back everybody attempting to climb Mont Blanc. Not only the governmental authorities decided to close down the Mont Blanc, the Chamonix mountain guides company also decided, that it was too dangerous to climb Mont Blanc. Still as the authorities closed down the Mont Blanc questions were raised by alpinists, mountain guides, and mountain rescue. Who is responsible for people who want to go climbing with these conditions? And are the authorities legally allowed to stop them?

¹³ See picture 1.

§ 3.1.4 Rockfall

The previous paragraph ended with Mont Blanc being closed for the summer, as it was too dangerous to climb, due to extreme rockfall. Rockfall is a common occurrence in the mountains, however lately there is more rockfall due to the release of solid frozen rocks and debris by melting permafrost. As rockfall is increasing is most of the community, experiencing the Alps as becoming more dangerous. More and bigger rockfalls are noticed throughout the mountains. Studies done in the Mont Blanc massif are showing that the permafrost altitude level is going up (Ravanel & Deline, 2008; Ravanel et al., 2010). The last 100 years have permafrost levels already gone up between 150 and 200m. Levels are expected to continue to rise, in the next 50 years with 200 to 750m (CIPRA, 2002). On hot days it can literally rain rocks in certain places. The ongoing increase of global warming will have a huge impact on the mountains and mountaineering, as complete areas will come loose and have to resettle again. The introduction mentioned rock collapses on the Eiger, Les Drus and the Matterhorn. These mountains are legendary, landmarks in mountaineering. With parts of these mountains collapsing, comes sadness as people realized that those parts are now lost forever, never to be climbed again. These huge rockfalls make people realize that even titans like the mountains are not here forever. And as most of the collapsing is due to melting permafrost, are people at the same time realizing that it is us, who are responsible for the damage. We are losing wealth of nature for future generations. Not only are the mountains themselves falling apart, man made structures are also falling victim to the melting permafrost. Structures like mountain huts, ski stations, lift pillars have broken apart, or tumbled down due to melting of the permafrost layer on which they were build. More than one mountain hut had to be relocated, as the ground became instable. In the extremely hot summer of 2003, there were some problems in one of the most popular huts in the Mont Blanc massif;

“..the kitchen floor fell out of the Cosmiques Hut. Permafrost probably melted and weakened the floor. I think it is the year I have seen the least snow on the glaciers. And it was the same, whether I was here (Chamonix) or in Zermatt or Grindelwald.” (Anonymous)

Nevertheless, rockfall is not the only danger mentioned. A higher number of crevasse falls on glaciers are also noticed. This higher risk of crevasse fall is due to less stable snowbridges, which is due to higher temperatures earlier in the summer and less precipitation in the winter to form a stable snowpack.

“Yes, in the summer of 2003 we saw an extreme version of that when rockfall became horrendous. I remember meeting with a friend at the end of the summer of 2003 and I asked him, “how was your alpine season?” and he replied “I survived”. You know, he told me he was up a slab and the whole slab just moved, like an avalanche, but it was a rock slab.” (Andy Perkins)

§ 3.1.5 Bergschrunds

Bergschrunds (picture 19) are normal occurrences in the mountains. However, they seem to increase in size and open up earlier in the season due to global warming, making them more difficult to cross. Due to their new sizes it is hard or even impossible to get to the initial climb. Bergschrunds are mostly an obstacle in summer as in winter, they are filled by snow from avalanches. Due to melting, are bergschrunds opening up in summer and can present a very difficult obstacle for alpinists. In the past were bergschrunds often easy to cross, however as their size increases, new ways and techniques have to be developed to cope with this problem.

Forty-two year old mountain guide Rick Marchant is a very friendly and humorous man. I meet him at his place and while sipping a hot cup of thee he tells me about his experiences with climate change. He was born in the south of Britain and started coming to Chamonix when he was sixteen and kept coming back until he finally moved here to make a living as a mountain guide. Rick has a very positive way of looking at life, he even finds a way to give a positive turn to the extremely hot summer of 2003. He tells me that he found that summer a blessing for alpinists when concerning bergschrunds;

“..in that hot summer of 2003 all the upper lips fell of, and when it snowed in the following winter, well there were no upper lips. So the moment it snowed, you could just walk there, the bergschrund was just 6 inches. You could just walk straight on the climb, and it was actually quite interesting, because there was an

extra pitch to climb, because you walk on to a gully. You climbed this gully up to the snow fields and the rest of the route. The upper lip is now reformed, but for that winter, you could go and do anything, and no bergschrunds.”

Rick shows that even an extremely hot summer can generate some positive opportunities for alpinism. As the upper lips fell of, it gave alpine climbers the following years some easier ground to cover. These days however, all the upper lips are reformed.



Picture 19 Triangle du Tacul, with on the right the North face of the Mont Blanc du Tacul. The horizontal line under the Traingle, indicated by the black arrows, is the bergschrund. The red arrow indicates the Chere couloir, however view of the Chere is hidden by the rocks.

Photo by Wouter-Dirk Huitzing

§ 3.1.6 Snowcover

Temperature measurements show that the effect of global warming is twice as strong in mountain areas (EEA, 2009). So it comes with no surprise that every respondent remarks that the winter snowcover is changing. During the last decade have many of the lower ski resorts coped with big problems. As warming progresses in the future, regions where snowfall is the current norm will increasingly experience precipitation in the form of rain (Beniston, 2003). According to Stephane Legarde, the director of the green ski school Ecoriders, was it in the past always possible to go skiing in November at Grand Montets in the Chamonix Valley. However the last years it was mostly around Christmas that there was enough snow to start skiing. These days are 85% of the ski resorts in the Alps

are snowsicher, however this number is expected to have fallen to only 63% by 2050 (CIPRA, 2002; Beniston, 2003). Every °C increase in temperature, will see the snowline going up by approximately 150m (Beniston, 2003) and will cut the average duration of snowcover with four to six weeks (CIPRA, 2002). As a consequence of the rising snowline are lift companies building higher in the high alpine, glacier world, which is the last preserved natural areas of the Alps (CIPRA, 2002). This is tolerated by locals and authorities as many livelihoods depend on tourism. Locals are not happy with the development as it damages their mountains, however they see the necessity for their own survival. Another way how ski resorts are trying to save the tourist industry and themselves is by using artificial snow. Still although they try very hard are more and more of the lower altitude ski resorts going out of business every year.

§ 3.2 Feelings about climatic change

Like almost every mountain village in the Alps, are most bars and shops in Chamonix adorned with photos, paintings and other representations of the local mountains. This way you can get a good mental picture of how the mountains have looked like in the past and how the mountains have changed over the last centuries. One thing that always catches the eye, is the difference in how white the mountains were in the past, compared to how they look today. These days the mountains have lost a lot of the glaciers and snowfields that once adorned them. For people who do not visit a mountain village every day, the book of Zängl & Hamberger (2004), *Gletscher im Treibhaus*, or the linked website, www.gletscherarchiv.de, will give a very good representation of how things have changed. When I am in the Alps and see how the mountains have changed since the last century, I get a sad feeling, and a feeling of regret that I was not there at that time. To me, the mountains looked more prideful in the past than they do these days, more untamed, wilder, more dangerous and more adventurous. However, as that is my personal opinion, was I wondering how others look upon this and feel about it. And how they think we should care for the mountains.

§ 3.2.1 Personal feelings

“Obvious I am sensitive to the mountains having more or less snow, I like them snowy, cause they are prettier, in the summer when they all dry out, they look like big piles of rubble. They are not that beautiful.” (Andy Parkin),

“Generally climate change has produced a strongly negative personal aesthetic effect. I find the retreat of glaciers profoundly depressing. Visually, the retreat of glaciers and loss of summer snow cover has left huge areas of dirty loose debris, gravel and bare exposed rock slabs. Human scarring from ski developments is fully exposed in summer due to snow retreat. The special beauty of fresh snow cover and an active glacier landscape has diminished in scale and frequency as summers have become hotter and drier. Much of the high Alpine scenery looks dead and decayed in summer. These impressions have strongly persuaded me to seek other places and seasons to go climbing.” (Martin Maron)

The above two quote’s capture the general feeling towards changes in the Alps. Most found the mountains looking less pretty, less attractive, but in contrast many also stated that change is a natural evolution as the mountains have always been changing. Nevertheless, in general can the feelings towards the changes in the mountains, of the alpinist community be divided into two main groups. The first and biggest group, says that they feel sad when looking at the mountains compared to how they used to look in the past.

“So when I look at the pictures and read stories of how it used to be like, there is a degree of sadness, because it didn’t have to change this way. But having said that, change is kind of inevitable and there is not very much you can do about it to prevent it.” (Tania Noakes)

“I think it is sad that the glaciers are disappearing. And I think it is really sad what we are doing to the planet. But there will always be things that will be better, but there also will be things that will be worse.”

The second quote, is from mountain guide Ulrika Asp. Ulrika is a, blond of average height forty-four year old Swedish mountain guide. Although many people think of mountain guide as a male profession, is she far from the only female mountain guide in Chamonix. She came to Chamonix for a ski season, as so many other Swedish people do every year, however she stayed and has now been living in Chamonix since 1989. Over the years she has seen many changes due to climate change. The quote above can be taken apart in two parts, and both parts represent the general opinion of how alpinists feel about the occurring changes. Firstly, are most of the community feeling sad and nostalgic when confronted with the fact that the mountains look so much different from how they looked a century ago. In addition is there also a feeling of helplessness as they can do nothing about it to prevent it from happening. The problem is identified, the consequences are clear, but nobody sees a clear solution to the problem. The second part of the quote is about the fact that the mountains and alpinism have always been changing since it began two centuries ago. These ideas and feelings are shared with the second part of the community, only they approach it a different way. The second group is about twenty percent of the whole research population. This group says, that they, although they preferred how the mountains looked in the past, do not really feel any special feelings when looking at the present condition of the mountains. Because they can not change what is happening, they can not feel responsible or sorry for it. They just have to cope with it and adapt to it. As the 2010 Piolet d'Or award winner, Kazak Denis Urubko puts it;

“If I am able to keep it, then I will be worried. But if I can do nothing, I have no need to be worried”.

Next to it all is there also some fear, due to the global environmental change in mountainous areas. As people find the mountains getting more dangerous, people feel afraid and vulnerable. People feel like there are more alpine accidents happening and that there is a need to be more cautious when being in the mountains.

“It gives me a feeling too, that the Alps and the Les Drus are falling apart, a feeling of apprehension, of fear. A fear that maybe, the mountains are getting more dangerous.” (Anonymous)

§ 3.2.2 Ethical responsibility and Environment

This division between the two groups leads to a question of ethical responsibility. Have alpinists a higher obligation to be more responsible for their environment than other people, as it is their environment which is changing? This question was widely disputed by the research population. It was agreed unanimously that alpinists should do as much as possible to live environmental friendly, however this should not limit their lifestyle. Two informants put it like;

“..either I heat with wood or electricity I don’t know which is the worst and I want to heat my house, I am not going to freeze” (Micheal Silitch),

“It will cross my mind often if something is environmental friendly or not, but it won’t stop me from doing anything. I will shrug my shoulders and do it anyway. I won’t take the train to Beijing next time, just because it is more environmental friendly.” (Bruce Normand).

Nobody would let carbon emissions stop them from taking a plane to go on an expedition in the Himalayas. Alpinists do not stand alone in this as Giddens (2009) shows in his book that the results of attitude surveys point out that “ *most of the public accept that global warming is a threat; yet only a few are willing to alter their lives in any significant way as a result.*” Even though nobody would let carbon emissions change their lifestyle, most admitted that the emissions would cross their mind when going on an expedition. So, although the majority found that alpinists should live environmental friendly lifestyles, there were still two general opinions on how these lifestyles should be compared to other, non-alpinists, individuals’ lifestyles. In short, the first group found that every individual on our earth has the responsibility to live as eco-friendly as possible. The other half of the research population found, that as it are alpinists, who are always out there and it is their direct living environment, that they have the responsibility to live as environmental friendly as possible. For some people this lead to the dilemma that alpinists are contributing, in there own way, to the changing of their own world. Others found that we indeed should live eco-friendly, but did not see why we should be more environmental friendly than other people who chose to live in a city and are not constantly out there. The

main argument put forward is that the alpinist community is such a small social group, that everything we do on an environmental level, both positive and negative, is negligible. British aspirant mountain guide, Tania Noakes puts it as follows;

“You know the expression “pissing in the wind?” I guess my overall feeling is a feeling of helplessness. I would love to do something about it (climate change), but everything that I do is peanuts compared to the big industry, of what I call, normal live back in the UK. The consumers based society.”

And fellow countryman mountain guide Stuart MacDonald says about it;

“We can get really upset about carbon emissions, but then a volcano erupts in Iceland and produces more carbon emissions than the whole planet. Since we are such a tiny drop in the ocean, I don’t know if we have any real effect”.

Together with Stuart and Tania, are many more alpinists feeling this way. Hence, although the alpinist community is divided on the ethical discussion, on two points they agree. One, alpinists should live an environmental lifestyle, but it should not hinder their way of living. And two, every individual on this world has to contribute in his own way, preferably by living as environmental friendly as possible as they can. Most mountain guides are very aware of the climatic changes around them and do not treat the mountains as a consumable thing, something disposable. They try to pass that awareness on to their clients and teach them to manage the mountains sensibly and with respect.

I would like to note on the above, that although it was agreed that alpinists should be concerned about their environment and should live environmental friendly, that there were a lot of comments on other alpinists not being concerned with their environment. This raised the question of who are these other alpinists? Do they mean alpinists from another social space, like the *longer staying tourists*? Or was I provided with socially correct answers on my questions on being environmental friendly, and was not everybody that environmentally concerned as they said?

§ 3.2.3 Natural process

Although a lot of people are saddened by the thought of the changing mountains, everybody accepts that the mountains are changing due to a natural process. More than once a reference was made to the Pyrenees, a mountain range much older than the Alps, and therefore the mountain peaks are much more blunted and lower. As people referred to the Pyrenees, they said that in time the Alps will also look like that. Hence as what is happening is just a natural process (with some anthropogenic help), most people feel that we just have to accept what is happening and adapt to the changes and any new climbing conditions in the mountains. Even the people who do not want to accept what is happening have to adapt, or stop climbing as they can not stop the change that is occurring.

§ 3.2.4 Life experience

Accepting and adapting are the most heard answers when asked how to deal with climate change. But as that was rather vague I asked what they had exactly changed in their climbing, due to climate change, however that question did not seem to be so easy. A lot of the climbers attribute their development in their climbing (style) to life-experiences.

“My climbing changing? I think that will be very difficult to answer as everybody is changing, so you would have to transport me back in to time and have a chat with me than. What I do now is totally depended on the experiences I have gained, if you go back 25years I won’t be the same person”. (Rick Marchant)

Their explanation is very easy, people get older, get more experienced, get a family and they grow more responsible. Their years of experiences have definitely changed their way to look at life and to this they adapted their climbing lifestyle. For most of them this means changing their risk-management, often people who grow into mountaineering decrease their level risk taking. Ulrika Asp illustrates this in a nice way;

”I do less ice climbing, but it is hard to say if that is due to climate change, rather than life just going on. It is very hard to be objective about climate change, compared to what changes in your life as well. There are probably things that I

have said, that have to do with changes in life and climate change as well, it is hard to be objective.”

§ 3.3 What will the future bring for alpinism?

Global warming and melting of the glaciers will continue to happen in the near future. This means that the next generations will continue to witness, experience and has to cope with the consequences of our climate change. How do mountaineers and mountain guides see the future for their climbing, themselves, their way of living and for mountain guiding as a profession?

§ 3.3.1 Future – climbing and mountain guiding

The alpinist community expects that the temperatures in the mountains will continue to increase, which will mean that glaciers will continue to melt, permafrost will continue to melt and overall snow and ice conditions will worsen. As seen in paragraph 3.2, are people feeling sad, helpless and vulnerable about these continuing changes. However, the changes will not stop people from mountain climbing. So people will have adapt to the current conditions. Still in ten, twenty or hundred years, everything can be completely different again. A part of the community is not really concerned for their own future. The main argument is that most mountain guide careers are quite short, which is mostly true for mountain guides from non-alpine countries. Ulrika Asp puts it like this;

“Usually the career for a mountain guide is really short, in 25 years I will probably still be there, but have stopped guiding. So I think it is sad that as a profession it is disappearing, but it is a reality, something we have to deal with”.

Most of mountain guides from non-alpine countries do not acquire a mountain guide diploma before they are in their thirties. For people who are born in a mountain guide family, becoming a mountain guide is a logical step. They acquire the skills from family members early in their life and they grow up in the mountains. So at the age of eighteen these youngsters stream into the mountain guide program and they are full mountain guides several years later. While people not born in the Alps, lack the experience of the early years, and have to catch up much later in their life. Therefore, most of these moun-

tain guides have been doing something else next to acquiring the much needed skills, and therefore had already another profession and become a guide late in life. Although the changes in the Alps are noticeable, they are still often not fast enough to happen in one human life span. As these changes occur slowly are many guides not concerned for their own guiding career. However, it is unclear what the next generation mountain guides should expect from the job. Will there be enough mountain guiding work for everybody? Will there be competition of cheaper rock climbing instructors? Andy Perkins is not too positive about the future;

“I am glad that I don’t have any kids who want to be mountain guides. They won’t have a very long career.” (Andy Perkins)

In a contrast to the concerned part of the community is the other half of the community not really concerned for the future of mountain guiding. They do not expect a problem in this life and they do not expect a problem for future generations. There might be a little bit more competition between guides and people with other qualifications, but as they say, guides do so much more than just towing people on and of glaciers. There were even some who joked, that the climate is unpredictable and it might be getting colder again in the future and that we were being concerned for nothing.

§ 3.3.2 Threats and opportunities

Looking at the previous part it becomes clear that there is no agreement on what the future will bring for the alpinist community. Nevertheless the current changes in the mountains are quite clear. Almost all noticed climatic changes are perceived as negative, except for that small percentage of areas which have now become more accessible. On a rainy, spring day in Chamonix, I had an interesting conversation with all round sport-adict and mountain guide Michael Silitch. Although his origins lay in America, is he based, in the mountaineering capital of the world. When I asked him if he saw any opportunities for (alpine) climbing due to climate change, he had a very short and clear answer ready. He said;

“I have a hard time seeing opportunities in the near future for alpine climbing.”

Michael's view is more or less the general feeling in the alpinist community as more than three-quarter of the research population says that they see climate change purely as a threat for mountaineering. Nevertheless, are there still some people who think that environmental change also has a positive side, as they think that it creates opportunities for their climbing. However when asked which opportunities they really see, the answers are rather vague. None can really give precise examples, except for several glacial spots where it previously was impossible to ski. Going through my research data, I am getting a feeling that the community actually has a general, genuine positive view of looking at life and therefore think that there should also be a positive side to the effects of global warming. Instead of that they are really seeing any future opportunities for alpinism. It will without a doubt be true that there will be some new climbing opportunities, which were impossible before, but this will be unique, separate cases instead of a general rule of law.

*"I think I just adjust. But really new opportunities because of climate change, I would say NO. Because you loose things, you loose more than you will get."
(Gilles Claret Tournier)*

“Ahh, I saw a lot of glacier going up, going up, going up.”

(Stephane Legarde)

Chapter 4) Discussion – Will climate change be the end of alpinism?

Glaciers have always dominated the landscape of the Mont Blanc valley. For the alpinist community is climate change a solid reality, as glaciers have already been receding since the second half of the 19th century (Alcamo, 2007; EEA, 2009) The alpinist community, feels sad and vulnerable as they are concerned and involved to the changes that are happening to their living spaces and their beloved mountains. As a consequence they need to adapt, as the environmental space which they have perceived into existence is changing (Foucault, 1984; Ingold, 2000; MacFarlane, 2003; Ness, 2011). In that way, they are not so different from other communities and indigenous peoples which are threatened in their lifestyle and cultural survival by environmental changes. In chapter 2.4.1 I argued that the alpinist community are actually the indigenous peoples of the Alps, as they are the first to “live” in the high alpine environment. They have developed their own lifestyle, culture and traditional alpinist environmental knowledge (AEK). The biggest difference with other indigenous peoples is that the alpinist community is a community of individuals which have chosen to be part of the alpinist community and chooses themselves to go into the mountains. By their own choices, they choose to expose themselves to the consequences of climatic change. Alpinists will always have the option to stop climbing. However, in doing so they will loose exactly that, what makes their identity and the community will go “extinct” just as well. Nevertheless, by being able to choose, they are different from other ecological refugees, like for example, the islanders of Tuvalu. Rising sea levels, will make Tuvalu uninhabitable¹⁴ in the near future (Greenpeace, 2006; Lazrus, 2009). Both the alpinist life-world, and the life-world of the islanders of Tuvalu are being greatly, irreversible influenced. The islanders also have to adapt to environmental change, however they do not have the option to just not to “go” anymore. As they life constantly in their environmental changed life-world, while mountaineers have the option of going in and out of their mountainous environment. Having the option not to go, raises the question of how the alpinist community fits as ecological victims? Can you label them as

¹⁴ The Tuvaluan islands have an average elevation of less than three meters above sea level.

ecological victims at all, as it is their own choice to go into the mountains? Other communities and cultures, which are threatened by climate changes have no choice. Nonetheless, how you may label them, how much the mountains will change, mountaineers will never stop climbing. These changes in the Alps may sadden the alpine community, but they know that the changes are irreversible on the short run and nobody knows for sure what will happen on the long run. So, the community accepts the fact that their life-world is changing and looks for a way to cope with these changes. Will this mean an end to alpinism as we know it? Definitely not, as alpinists have always challenged the mountains. Equipment and techniques have evolved into what they are today, making hard climbs, much more accessible. This resilience of alpinists shows that they will always find a way to go into the Alps. However the current climatic changes will assure that some (classic) climbs will not be possible anymore in the future. But there will also be new climbing options. Alpinists have to learn to adapt to the climatic changes that they are experiencing. In the next paragraph I try to explain how alpinists in general and mountain guides in their profession are changing and adapting their climbing and their AEK to new environmental situations.

§ 4.1 Discussion - Adaptation and consequences

§ 4.1.1 Adaptation by the general alpinist community

There is a maximum to the hours one can climb and the amount of energy one can spend in one day. Climbing tours are changing due to changing conditions of the mountains. Trips used to be day-trips years, are now longer and more dangerous, as the amount of time, distance and altitude meters to cross have increased. New, sometimes dangerous, situations, require of alpinists that they take a detour. Glaciers have been receding for some time now, lower glaciers are already disappearing fast. A first change can be anticipated in the areas climbers choose to go climbing, or actually a shift in what kind of climbing is possible in which areas. In lower areas, ice and mixed climbing will no longer be possible, there will only be rock climbing and hiking. This is not to say that alpinism will disappear, yet it will become completely different. Alpinism has always been marked by snow, ice and glaciers. When these are gone, then alpinism will really need to fundamentally change. Certain lower alpine areas have already fallen victim to the massive

disappearance of ice, snow and glaciers. Nevertheless, is it impossible to take these areas as case studies, as alpinists are not bound to a specific area. Hence, when looking at specific areas, and trying to analyse if there might be more hiking and rock climbing these days and less alpinism, then it will not be possible to conclude that, that it is a direct consequence of change in the alpine community culture. As the glacier shrinks, moraines are growing and smooth rock is revealed. Moraines ad tens of altitude metres to a tour and require mountaineers to cross a loose rock slope. The revealed smooth rock, which needs to be climbed to reach the initial climbing route, is much harder to climb and to protect. Due to higher average day temperatures becomes the snow earlier slushy and snow-bridges in general are more unstable. To evade these problems, alpinists are adjusting their AEK. This will undoubtedly have an influence on the alpinism culture, still how this will change alpinism can only be speculated. Climbing tours have to be adjusted in which exact way to take, what time to get up, what gear to take, etc. So how do alpinists cope with these new challenges in their routes? American mountain guide Micheal Silitch thinks that alpinists should *“try to find a different access points or just don’t climb it anymore.”* This means that (classic) climbing routes are changed or not climbed anymore as it can be impossible to reach the beginning of the route.

“Obviously you measure your awareness of climate change here by looking at the glaciers. So it is impossible to not to notice the retreat of the glaciers in the Chamonix valley.” (Rick Marchant)

Although receding glaciers are the clearest consequence of climate change, is melting in general a big problem, as rockfall released by melting permafrost makes many places more dangerous. As mentioned in chapter 3, was rockfall responsible for the closing of the route to the summit of the Mont Banc. This example showed that both alpinists (and local authorities) adapt to the higher temperatures in the mountains by not climbing everything anymore, at anytime. Although the summer of 2003 was an unique extreme case, have several respondents mentioned that they would not go and climb certain climbing routes anymore at certain times of the year. Mountain guides refuse clients them and advised to do something else or to come back at another time. Some alpinists are even

more radical and say, that increasing average annual temperatures and constant high summer temperatures means, that they will not climb anymore at certain periods or if the 0°C isotherm passes a certain altitude. Traditionally there has always been much climbing during the summer months, and mostly during the summer holidays. Mountaineering, as we know it, is changing, but not threatened. Just like there are some routes, which have become impossible to reach throughout the year, are there also routes which are impossible to reach just some part of the year. Often this will be caused by a big bergschrund which needs to be crossed. People who still want to climb these routes have to adapt their time of climbing. They should climb these routes in winter or spring, instead of in the summer. To summarize it, alpinists are (in need of) changing their moment of when, to climb what. In addition, there are alpinists who might have to let go of personal principles, they have to loosen up if they still want to be able to do some climbing, as the rules of play have changed. It is very difficult to predict in what ways the alpinist culture will exactly be influenced. When the alpinist community was asked how they thought about their future there was no uniform answer. There was however agreement on the fact that there will be change, that alpinists will become increasingly affected by global warming and that they have to adapt to whatever may come. Most expect that the ongoing change will mean a decrease in the snow and ice, and an increase in rock terrain in the high mountains in the future. This shift will influence all facets of alpinism and the alpine community.

§ 4.1.2 Mountain guides

Mountain guides currently hold the monopoly on working in the high alpine environment, as they are the only ones legally allowed to take people on glaciers and work in the high mountains. On other aspects of climbing, like rock climbing, they do not hold a monopoly and so they have some competition from cheaper (rock) climbing instructors. When the glaciers will have disappeared completely, it is possible that more competition will arise. However, this will still taken some decades to happen. Mountain guiding is expected to become harder and more dangerous in the near future, as conditions keep changing. The rapid changing conditions require mountain guides to update their knowledge of their surroundings almost constantly. Could they in the past rely on last years

information, these days they need more recent information as changes happen quickly. This need for updated information is reflected back in the information exchange in the social space, as alpinists have to rely more on information of others. Mountain guides are even more concerned than other alpinists with the changes that take place in the mountains, as their livelihood depends on it and their clients are often unskilled individuals. They will do less classic tours, and previous one-day-tours can take up to two days. In addition will they have less days to climb themselves, as the amount of good condition climbing days decreases. Working conditions become more dangerous as there are more rock- and crevasse falls. Which are even more dangerous for mountain guides, as they are also responsible for the safety of their clients.

§ 4.1.3 Tourists and local inhabitants

The Alps are not only a symbol for Europe, they are also one of the biggest tourist attractions of the continent. Chamonix was an unknown village before mountain tourism started in the 1800's. Since then it has developed into the mountain tourism capital it is today. Throughout the Alps have the most lucrative and popular alpine tourist attractions always been the glaciers, mountain viewing points and famous mountains like Mont Blanc, Matterhorn and Eiger. However, top attractions like the glaciers are disappearing. This will have a big impact on the whole mountainous tourism industry. Millions of people will be affected in choosing their future holiday destinations. In the winter will more and more of the lower ski resorts have trouble in guaranteeing snowcover. As tourists attractions will disappear, so will a big part of the alpine tourist industry. Problems with both summer and winter tourism will directly influencing local inhabitants. The Alps are more than only climbers, skiers and mountain bikers who are enjoying the mountains. All these people need facilities. They need bread, a place to stay, they use cable cars, want to go for a drink and they inquire at the tourism information. A decrease in tourism will not only influence the amount of work, mountain guides will have. It will influence all layers of alpine society as the inhabitants of alpine villages are depending on tourists to bring money to the valleys. When snow, and therefore tourism will stay away. Then many ski resorts, mountain villages, hotels and campsites will have to close down. The local inhabitants will have no longer a livelihood and look elsewhere for work. This will most

likely result in the moving away from (young) people and the greying of mountain villages. In several decades will many mountain villages be deserted as it will become impossible to provide in a livelihood. Of course this is a worst case scenario, but some of the lower ski resorts and farther away mountain villages are already experiencing an exodus of inhabitants. So only a small increase in temperature can have a big influence on a lot of people, on alpinist, local inhabitants and tourists. Climatic change affects different layers of socialization. It affects mountaineers directly as it changes their life-world. With a small delay it also affects, the rest of the valley inhabitants as it will also affect tourism numbers, and of course the tourists themselves, as they are deprived of an attraction. Still, Chamonix can be counted among the lucky ones, as the valley ski slopes are all at a high altitude.

§ 4.2 Conclusion

The future will bring more unavoidable, climatic change to the mountains. For mountaineers, the Alps are their living environment, the place they relate to, a place they belong to, a home, as they are the alpine indigenous peoples. For me myself, I feel some sort of longing and belonging to the Alps. When coming back to the Alps I get a feeling of relieve, of coming home. Alpinism is a way of living, but alpinism will fundamentally change in the future, due to the disappearance of glaciers. As a consequence will the alpinist community be vulnerable for some time. The spaces of the alpinist community will be under pressure and altered, as an important aspect of the mountains, the glaciers, are disappearing. Adaptation to the new circumstances will be the only way to reduce this vulnerability. Alpinists feel mostly powerless in turning this tide of change. They know they can only accept the change and that they should adapt their AEK, skills, techniques and equipment to these changes, as alpinists have done since the beginning of alpinism. Still there are some idealists who are trying to do as much as possible to counter the changes, knowing that they are just one small drip in the pond.

Most climbs have always been on traditional, classic climbs, as these are the most famous. However, most of these classic climbs are affected by climate change. Routes are constantly changing and are become less safe. Glaciers have disappeared revealing smooth bare rock and moraines. There is more rockfall and parts of routes are collapsing

due to melting permafrost. Seracs more frequently collapse, crevasses and bergschrunds are become bigger and are staying open for longer, due to less snow and a higher average temperatures. These consequences of climate change will have a huge impact on all the alpinists who only climb classic routes on classic faces and summits. The list of deteriorated climbs is long and growing each climbing season. In the beginning of alpine climbing, it was the equipment and techniques which limited the possibility to climb a mountain. These days every mountain in the Alps has been climbed and is it the increasing glacial receding (inc. bigger bergschrunds) and rockfall dangers which limit climbing options. There will be a need to change the attitude in this culture. New routes have to be opened, existing routes will be altered and other routes have to be marked as “new” classics. Maybe we should just say that the classic routes have become “outdated”.

In the end, the goal of this research was to show how the Alpinist community is feeling the consequences of climatic changes in the mountains. To my knowledge there is almost no documentation on the alpinist community, which is a shame as it is a highly specialized, unique community, composed of international individuals with very different background stories, forming together one community, for the sole reason of experiencing the mountainous environment. Many different changes are being experienced by the alpinist community. Although these changes are seen as imminent they are also seen as unavoidable and are therefore being accepted. The mountains have been changing since the birth of modern alpinism. At that same time the glaciers started to recede (Schwörer, 2002). Hence, although the pace of glacial receding is now quickening, is it seen as being a (partly) natural phenomenon by alpinists. Climate change in the mountains is no new phenomenon, as these changes have been going on for more than 150 years already. However, it has never been a real issue, also it has never been so noticeable and never been so much discussed as it is current days. In recent years have climatic changes in the mountains gain more attention in both media (Economist, 2009; Moerland, 2009) and scientific books (Zängl & Hamberger, 2004; Balog, 2009; Strauss, 2009) and articles (Haeberli and Beniston, 1998; Farinotti et al., 2009). There has not only been more media cover, but also as the pace of the changes has been increasing over the last decades, so alpinists have been more and more feeling the consequences of climate change. The changes that are occurring are mostly creating a change in when specific climbing routes

and which mountains are being climbed. Climate change is now a new player which alpinists have to take into account when they are making plans for when to go climbing. Most of the research population mentioned that they now try to shift their climbing to earlier in the season than before, as the summers are getting to hot, and therefore, in their eyes, more dangerous. The consequences mentioned in chapter 3 is what is being experienced at this moment in time, however the bigger question is what are the consequences of the ongoing global warming for the future of the glaciers, the mountains and alpine climbing. As mentioned before, most glaciers will probably have disappeared between the year 2050 (Latif, 2004; Greenpeace, 2006; Alcamo et al, 2007) and the end of this century (Haeberli and Beniston, 1998). The complete disappearance of the glaciers will have an unimaginable impact on both the mountains and all the facets connected to mountaineering. The United Nations declared 2002 as the International Year of the Mountains. The overall aim of the International Year of the Mountains was to ensure the present and future well-being of mountain communities, promoting the conservation and sustainable development of mountain regions and celebrating the cultures and heritage of mountain peoples.

In this study I presented the case of how the alpinist community in the Mont Blanc region is experiencing climatic changes in the mountains. While my research was initially mainly focused on the global warming experiences in Mont Blanc region, the international nature of the alpinists community gave me an insight in the environmental changes which are occurring on a worldwide scale in mountainous areas. Weather and climate are being experienced as peaking more extreme; higher average temperature, which has rockfall and general melting as a consequence; and changing conditions, which change the climbing season and can sometimes make climbs impossible. Without a doubt the biggest indicator for climate change is glacial retreatment, this is noticed on a worldwide scale and by everyone, even by none-alpinists. The last decade saw more and more attention for climate change in general, but also for the consequences of climate change on the Alps and on our alpine resources. Was climate change first a thing which only was affecting third-world countries, is it nowadays more and more close to home and beginning to affect every one and every facet of life. The West is not inviolable, and is itself mostly responsible for what is happening. It will be horrible for mountaineers if the

mountains keep changing. It will be terrible for all people who depend for their livelihood on alpine tourism. But the consequences for the inhabitants of Europe will be unimaginable disastrous if first the rivers keep flooding, due to glacier melting and a decade(s) later it will even be worse as the rivers will dry out, due to the complete disappearance of glaciers. Alarms bells are ringing for some time already, still it seems that nobody is hearing them. It is not too late to start doing something, but it will be if we keep ignoring the signs that the mountains are giving us.



Picture 20. Alpinists going down the ridge from Aiguille de Midi to the Vallee Blanche.
Picture by Wouter-Dirk Huitzing

“You have to accept that at a certain time in the year, you shouldn’t climb at certain places. Otherwise the risk will be to high.” (Gilles Claret Tournier)

Afterword – A wake-up call with a light in the dark

The points and thoughts that I have tried to raise in the above all lead to the same conclusion. It shows that not only far-away communities in third world countries are falling victim to climate change. But that also we, the West are becoming victims of our own way of living. On the other hand, maybe that is just the wake-up call that we, the West, needs. The West needs to see that they are not inviolable. Western politics and views need to change, to stop the continuous temperature increase and the connected climate change. In the end the piper must always be paid, so we better assure ourselves that we keep the damage to a minimum.

Luckily there are also some lights in the dark times of global warming. Throughout Chamonix whispers and rumours can be heard for a call to be more green, to be more eco friendly in the valley. Since several years there is a ski school in Chamonix with the slogan, *“Ride and respect the earth”*. The ski school is founded by local French Chamonian Stephane Legarde and is called, ecoriders. According to Stephane, is his ski school the first green ski school with carbon free activity in the world, or as he likes to say it; *“the first ski school which fights against global warming”*. Stephane founded ecoriders as he had an ideal, to make a difference and offer people a green alternative. Ecoriders is not the only green projects in the valley. Several hotels have received or are trying hard to get a green label, tourists get a card for free public transport, and the town of Chamonix itself has developed a *“Plan Climate”*. More and more people in the Chamonix valley are concerned with what climate change will do with “their” glaciers and mountains, and how that will influence themselves, their work, their homes and their social environment. People’s mindset has changed from consuming and using the nature to a way of more cooperating with nature. Nature is no longer owned, but it is regarded as a partner. The greening of Chamonix might be just one very small step, but it is a first step, and every (climbing) trip starts with a first step.

References

Books & articles

Alcamo, J., J.M. Moreno, B. Nováky, M. Bindi, R. Corobov, R.J.N. Devoy, C. Giannakopoulos, E. Martin, J.E. Olesen, A. Shvidenko, 2007, *Europe. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 541 - 580.

Anderson, B., 2006, *Imagined Communities*, Verso London - New York, original 1983 new revised edition 2006

Balog, J., 2009, *Extreme Ice Now – Vanishing Glaciers and Changing Climate: A Progress Report*, Focal Point, National Geographic Society, Washington D.C.

Beniston, M., 2003, *Climatic Change in Mountain Regions: A Review of Possible Impacts*, Climatic Change, Kluwer Academic Publishers, vol. 59, pg 5 - 31

Brooke, T., 2005, *The Early Jesuits and the Late Ming Border: The Chinese Search for Accommodation*, In: *Encounters and Dialogues: Changing Perspectives on Chinese-Western Exchanges from the Sixteenth to Eighteenth Centuries*, ed. Xiaoxin Wu, pp. 19-38. Sankt Augustin: Monumenta Serica

Cebon. P., U. Dahinden, H. Davies, D.M. Imboden & C.C. Jaeger, 1998, *Views from the Alps – Regional perspectives on Climate Change*, The MIT press, Cambridge, Massachusetts, London, England

CIPRA, 2002, *Klimawandel und Alpen – ein Hintergrundbericht*, CIPRA international, alpmedia.net, vol. March

Crate, S. A. & M. Nutall, 2009, *Anthropology and climate change: from encounters to actions*, Left Coast Press, California

Cruikshank, J., 2001, *Glaciers and Climate Change: Perspectives from Oral Tradition*, Arctic, vol. 54 No. 4, pg. 377 – 393

Echeverri, J.A., 2008, *The impact of changes in seasonality and increased temperatures on indigenous peoples in the Amazon*, Universidad Nacional de Colombia, Sede

EEA, 2009, *Regional climate change and adaptation – The Alps facing the challenge of changing water resources*, European Environment Agency Report, vol. 8, Copenhagen

Farinotti, D., M. Huss, A. Bauder & M. Funk, 2009, *An estimate of the glacier ice volume in the Swiss Alps*, Global and Planetary Change, vol. 68, pg 225 - 231

Ferguson, R.B., 1995, *Yanomami Warfare: a political history*, School of American Research Press, Sante Fe

Friedl, J., 1974, *Kippel: A Changing Village in the Alps*, Holt Rinehart and Winston inc.

Foucault, M., 1984, *Space, Knowledge, and Power*, in: Rabinow, P. (ed.), 1984, *The Foucault Reader*, Pantheon Books, New York, pg 239 - 256

Giddens, A., 2009, *The Politics of Climate Change*, Polity Press, Cambridge

Green, D., & G. Raygorodetsky, 2010, *Indigenous knowledge of a changing climate*, Climatic Change, vol. 100, pg 239 – 242.

Greenpeace, 2006, *Alarm für die Gletscher – Erderwärmung lässt ewiges Eis im Rekordtempo schmelzen. Zeit zum Handeln!*, Greenpeace report, Greenpeace e.V., Hamburg

Haeberli, W. & M. Beniston, 1998, *Climate Change and its impacts on glaciers and permafrost in the Alps*, *Ambio*, vol. 27, pg 258 – 265

Henshaw, A., 2009, *Sea Ice: The Sociocultural Dimensions of a Melting Environment in the Arctic*, in; Crate, S. A. & M. Nutall, 2009, *Anthropology and climate change: from encounters to actions*, Left Coast Press, California, CH 6, pg 153 - 165

Hitchcock, R.K., 2009, *From Local to Global: Perceptions and Realities of Environmental Change Among Kalahari San*, in; Crate, S. A. & M. Nutall, 2009, *Anthropology and climate change: from encounters to actions*, Left Coast Press, California, CH 15, pg 250 – 264

Hulme, M., 2009, *Why we Disagree about Climate Change – Understanding Controversy, Inaction and Opportunity*, Cambridge University Press

Ingold, T., 2000, *The perception of the environment – Essays in livelihood, dwelling and skill*, Routledge London and New York

Isoard, S., 2009, *The European Alps adapt to changing water resources*, *Change magazine*, vol. 3, pg 31 – 35

Latif, M., 2004, *Der globale Klimawandel*, in: Zängl, W. & S. Hamberger, 2004, *Gletscher im Treibhaus – Eine fotografische Zeitreise in die alpine Eiswelt*, Tecklenborg Verlag, Steinfurt, pg 220 - 227

Lazrus, H., 2009, *The Governance of Vulnerability: Climate Change and Agency in Tuvalu, South Pacific*, in; Crate, S. A. & M. Nutall, 2009, *Anthropology and climate change: from encounters to actions*, Left Coast Press, California, CH 14, pg 240 - 249

MacFarlane, R., 2003, *Mountains of the mind – A history of a Fascination*, Granta Books, London

Malinowski, B., 1922, *Argonauts of the Western Pacific*, Waveland Press, Inc

Milton, K. (ed), 1993, *Environmentalism: the view from anthropology*, Routledge London and New York

Milton, K., 1996, *Environmentalism and Cultural Theory – exploring the role of anthropology in environmental discourse*, Routledge London and New York

Ness, S.A., 2011, *Bouldering in Yosemite: Emergent Signs of Place and Landscape*, *American Anthropologist*, vol. 113, Issue 1, pg 71 - 87

Netting, R.M, 1981, *Balancing on a Alp; Ecological change & Continuity in a Swiss mountain community*, Cambridge University Press

Piola, M., *The Aiguilles Rouges*, Mont Blanc Guide Book, City Offset Geneva

Raven, D., 2008, *Globalia – Een reisverslag*, Thela Thesis, Amsterdam

Ravanel. L., F. Allignol, P. Deline, S. Gruber & M. Ravello, 2010, *Recent Landslides - Rock Falls in the Mont Blanc Massif in 2007 and 2008*, Springer-Verlag

Ravanel, L. & P. Deline, 2008, *La Face ouest des Drus (massif du Mont Blanc): évolution de l'instabilité d'une paroi rocheuse dans la haute montagne alpine depuis la fin de petit âge glaciaire*, *Géomorphologie: relief, processus, environnement*, vol. 4, pg 261 - 272

Roncoli, C., T. Crane & B. Orlove, 2009, *Fielding Climate Change in Cultural Anthropology*, in; Crate, S. A. & M. Nutall, 2009, *Anthropology and climate change: from encounters to actions*, Left Coast Press, California, CH 14, pg 240 - 249

Schwörer, D., 2002, *Klimaänderung und Alpinismus – Überlegungen zur Veränderung der alpinen Naturlandschaft aufgrund der globalen Erwärmung*, Berg & Steigen, Vol. 3, pag. 18 - 21

Stratmann, 2004, *Alarm für die Gletscher – Erderwärmung lässt ewiges Eis im Rekordtempo schmelzen, Zeit zum Handeln!-*, Greenpeace e.V., Hamburg, Germany

Strauss, S., 2009, *Global Models, Local Risks: Responding to Climate Change in the Swiss Alps*, in; Crate, S. A. & M. Nutall, 2009, *Anthropology and climate change: from encounters to actions*, Left Coast Press, California, CH 7, pg 166 - 174

Stremlow, M., 2004, *Grenzraum Gletscher*, in: Zängl, W. & S. Hamberger, 2004, *Gletscher im Treibhaus – Eine fotografische Zeitreise in die alpine Eisswelt*, Tecklenborg Verlag, Steinfurt, pg 220 - 227

Tierney, P., 2001, *Darkness in El Dorado: How scientists and journalists devastated the Amazon*, Norton, New York

Turner, J.N., I.J. Davidson-Hunt & M. O’Flaherty, 2003, *Living on the Edge: Ecological and Cultural Edges as Sources of Diversity for Social-Ecological Resilience*, Human Ecology, Vol. 31, No. 3, pg. 439 – 461

United Nations, 1997, *The rights of indigenous peoples* (Human Rights Fact Sheet 9), New York and Geneva, United Nations

Verlag Schweizer Lexikon, 1993, *Gletscher Schnee und Eis – Das Lexikon zu Glaziologie Schnee- und Lawinenforschung der Schweiz*, Mengis + Ziehr, Luzern

Wimmer, A., 2002, *Nationalist Exclusion and Ethnic Conflict – Shadows of Modernity*, Cambridge University Press, Cambridge

Zängl, W. & S. Hamberger, 2004, *Gletscher im Treibhaus – Eine fotografische Zeitreise in die alpine Eisswelt*, Tecklenborg Verlag, Steinfurt

Websites

- <http://www.andypmountainguide.com/>
- <http://www.chamonix.net>, viewed on 22/09/2010,
<http://www.chamonix.net/english/information/index.htm>
- <http://www.ecorider.org/index-en.html>
- <http://www.gletscherarchiv.de>

Newspaper articles, magazine articles & information leaflets

Economist, the., 2009, A movable border – How global warming can shrink glaciers and alter frontiers, 18/04/09

Moerland, R., 2009, Grindelwald verliest zijn gletsjers – Nu te veel smeltwater, straks te weinig, NRC Handelsblad, 27/11/09

Moreau, L., year of publication unknown, *Mer du Glace, A lively glacier*, leaflet, Compagnie du Mont Blanc

Appendix

Appendix I: Research demarcations and methods

Basic fieldwork outline

I did my ethnographic study on the alpinist community in the Mont Blanc region, Haute-Savoie, France. The Mont Blanc is with 4810m the highest mountain of West-Europe. The Mont Blanc massif is also the border area of the three countries France, Italy and Switzerland. In the France part, at the base of the Mont Blanc, lays the small village of Chamonix du Mont Blanc. I lived in the Chamonix valley, from the beginning of February 2010 until the end of July 2010. There are many small villages throughout the valley, however two bigger towns clearly dominate the upper part of the valley, namely Chamonix du Mont Blanc and Argentiere. In the months February and March I lived in Les Bossons, in April, March and May I lived in Les Grassonnets and the last month, July I stayed in Argentiere. Even though I had been living in the valley for six months, I only did my research from the first of March until the first of July. February was used to lay basic contacts, to find a place to stay and to do some skiing and climbing.

Chamonix has always attracted many climbers from all over the world, as they see it as the capital of mountaineering. Many of the earlier alpine heroes have lived in Chamonix to climb and do first ascents in the Mont Blanc area. These days, still many of the worlds most experienced alpinists coming to Chamonix to climb (classic) routes. Chamonix is attracting, binding and holding alpinists from all nationalities. This made it an ideal place to do my research on how alpinists experience climate change in the mountains. I purposely decided not to start directly with my research as most of the alpinism takes place at the end of spring and in the summer months. To be honest, it was still not the best time to do this study. It would have been better to start in April or even May, as the months July and August are the most popular climbing months. Nevertheless I interviewed most of my mountain guide informants in May, the traditional low season month, the month between the ski-touring season and early alpinism season. Would I have done my research in the high season months, I would have probably reached a lot more non-professional alpinists, but also probably fewer mountain guides as these then are busy working.

Research population - Alpinists and Mountain Guides

For this research it was important that the informants were first of all experienced mountaineers. A second criterion was that they were well known with the mountains in the Mont Blanc region. And thirdly, that they had been climbing for quite some time, to be able to have seen some changes. These three criteria often led to informants who were mountain guides. However being a mountain guide was not a demand. Except for the definition given in the introduction have I not made any exclusion for people from different nationalities¹⁵ or gender in my research. Respondent alpinists for my study were from all kinds of different nationalities and from both gender. By interviewing respondents from different nationalities and gender I hoped to deepen the value of this research. I was wondering to see if different nationalities or people from different gender experience climate change in different ways. I have chosen the alpinist community as I see them as a special, unique community which is experiencing climate change every day. As a community they are constantly in the mountains all over the world. Therefore this group is very direct in contact with the effects of climatic changes which occur in the mountains. The success or failure of most alpine climbing tours depends greatly on the conditions of both weather and the conditions of the mountain. As both the weather and conditions seem to change because of climate change, alpinists are most likely to notice and influenced by these changes.

After explaining where, who and why, I would like to spent some words on my final research population. At the end of my fieldwork I had done twenty-two interviews from which one was a double interview, so I interviewed twenty-three people. The research population consisted out of; eight Brits, four French, three Americans, three Dutch, two Icelandic's, one Swede, one Belgian and one Kazakh. Next to these interviews informants did I also receive back three filled in questionnaires. All of these questionnaire respondents were British.

¹⁵ See appendix III for any extra notes on nationality and gender.

A critical note on the research population

On point of discussion that must not be missed, is the fact that my research population¹⁶ was quite “young”. The research population was between their end twenties and begin fifties. As mentioned in this report, is the human life span nothing compared to climatic changes or the life span of the earth or a glacier. So it can be questioned, how good of a research population my informants were. What kind of data would I have received if I had only interviewed retired mountain guides or the local town elders? Their experiences would have gone back much further. So why did I not interview them? There are two very easy answers for that. First of all, almost all of the older French guides do not speak English and my French was not of that level that I could have interviewed them on the topic of global warming. And the retired foreign guides, who all speak English, leave Chamonix after retirement. And secondly, it is very hard to create a social environment with these people. I could connect with my current research population, which made talking and interviewing easy. Something which I could not achieve with the older group. Therefore it can be questioned what the results of this research would have been, had I been able to interview an older research population.

Interviewing – open interviewing, semi-structured and informal conversations

I established my contacts by email or telephone. I found some of the informants on the internet, as most mountain guides have their own website and other informants I just met (like on the Piolet d’Or climbing festival, on which I did voluntary work) or someone else gave me a name. After having established a contact I explained to my contact what I was doing here in Chamonix. Previous to the interview I explained what my research was comprehending and asked my respondents to start with telling who they were, how long they had been climbing and how they experienced climate change in the mountains. Usually that got a conversation going in which it was possible to use the open interviewing method. The respondents told me about how they experienced, they felt about, and how they were coping with and how they saw the future, all with regards to climate change. This methods lead in most cases to interesting monologs from the respondent side, in which I now and then made a comment or asked a question to steer the interview a little

¹⁶ See appendix I for more information on the research population.

bit. I prefer to use open interviewing as I find that with other ways of interviewing the respondents can not really tell their own stories, as they are always bound to the questions of the interviewer. However in some cases it was hard to get the interview going, in these cases I used a questionnaire to steer the conversation and to keep it going. Although I had made a complete questionnaire, I preferred, to just letting respondents tell their story on how they experienced climate change and then elaborate on their stories. During the interviews I made notes on interesting things the respondents said. I used these notes to come back to any specific points, in the case that the respondents did not elaborate on the subject themselves. In addition I made notes if I thought that people missed something and asked them about it. Not only did I make notes during the interview, I also used a digital tape recorder to tape the whole conversation. Before every interview I asked permission to make use of the tape recorder and in every case was the taping of the conversation no problem. In addition I asked if people wanted to be kept anonymous, which in some cases people preferred to be kept. After the interview was done, I used both the notes and the recorded interview to write down the complete interview. Not only did I write down every interview, I also categorized all the interesting points from every interview in a document per subject.

One note must be said on the interviews. Between the interviews there was a big difference in length and in useful information, which made them incomparable. Some interviews are more useful than others and some are almost useless. I have thought about discarding some or all of the useless interviews, however in the end I decided against it, as this might give a distorted view of the way alpinists experience climate change. In addition every respondent said at least some interesting point which gave me thoughts to think about on how alpinists are experiencing climate change. For these reasons, although some interviews are short or of a bad quality, have I used all of the interviews in this study.

I explicitly mentioned earlier that all the people that I interviewed agreed on a formal interview. I mentioned this as next to these interviews I had several informal conversations with climbers and guides which I met in cable cars, in bars, at the Piolet d'Or festival, the Maison du Montagne (House of the Mountains, kind of tourist information for alpinists), shops and more. I have not used these conversations in my research di-

rectly, but of course did these conversations help in constructing the bigger picture and therefore are they definitely indirectly part of this study.

Questionnaire

Next to the use of several interview techniques did I use a questionnaire. I used this questionnaire in different ways. First, if I was establishing a first contact with an informant by email, I send the questionnaire as an enclosure. I did this as a lot of the informants asked on forehand what I wanted to know and what kind of questions they needed to expect from the interview. I suspect that the level of education, as most had an academic degree, was the reason for this. Secondly, one of my first informants suggested that I would make a questionnaire and he would than forward that email to al British mountain guides. The idea really appealed to me, so I let him forward my questionnaire, however in the end did only two people reply on this email. A third way of using the questionnaire, was sending the questionnaire to some people I had met on the Piolet d'Or festival, but once again was the reply rate really low as I only got one reply.

Personal log

Next to open interviewing and writing down the interviews, was I also keeping a log on my daily life in Chamonix. In my log I wrote down what I had been doing every day, with whom I did it, any new people I had met and other interesting things, for both myself and my research.

Appendix II: Influence of gender and nationality

Differences in gender

Both genders are not equally present in Chamonix. There are clearly more males than females. This can be seen everywhere in Chamonix, at the supermarket, at the bars, at the climbing spots, in the mountain cabins, everywhere. The discrepancy in the male-female ratio is most likely caused by the, earlier mentioned group of the, *temporarily staying internationals*, as Chamonix attracts a lot of alpinists and seasonal skiers, both these groups are male dominated. It is expected that the local inhabitants, be more or less equally divided as they will follow a normal birth and death patron. From the third distinguished group, the *tourists*, it can be again expected that from normal tourists the male and female ration is fifty-fifty, while the alpinists tourists will have a much higher male-female ratio.

Although the alpinist culture is mainly male dominated, this study aimed at also incorporating female respondents to its research population. However as the male, female alpinists ratio is far below fifty-fifty, this study also aimed at a higher proportion of male respondents. As being an alpinist is not thoroughly recorded in demographic records, it is not known how the male-female ratio is exactly divided in alpinist culture. Therefore I had to make a guess for this study to the amount of representative female mountaineers. Looking at my own experiences I think that the alpinist male-female ratio is probably under one to twenty, but to only interview one female alpinist, didn't seem representative to me. So therefore I decided to aim at a quarter of my research population to be female, to have at least some different female opinions. However in reality I interviewed everybody who gave me the option for an interview. In the end, this meant that my research population had indeed about one quarter of female respondents¹⁷. So what did this all mean for the study? From the twenty-three people interviewed, five of the respondents were female. It is not unexpected that their direct experiences with climate change in the Alps are the same as their male counterparts. However there was a change that female alpinists would have another way of dealing with these changes, they might feel different about it or that they would have another way of looking at the future for their own climbing or their guiding. After analysing all the collected data for the whole research popula-

¹⁷ See the list of respondents in appendix V for details.

tion, it can not be said that there is a significant difference between gender on what they feel, how they deal with it or how they see their future. In general their stories and answers were on one line with the stories and answers of the male respondents. Looking at all the twenty-three interviews, it can even be said that the stories from the male respondents were sometimes farther apart from each other, than the female interviews. The female interviews fit perfectly within the male interviews. If you would take all the interviews anonymous, it will be impossible to identify individual interview as male or female.

From the above I concluded that there is no significant difference in the way that male and female mountaineers experience climate change in the Alps. Not for how they feel about the changes they see and experience, not for how they deal with climate change in the Alps and not for what they expect from the future. Any noted differences between female and male respondents, can be appointed to normal differences in individual life experiences.

Differences in nationality

As mentioned earlier is the Chamonix valley very international, it is even so international that English is the main language before French. As the alpinist culture in Chamonix is so international I was not only interested in how mountaineers experience climate change, but also to see if alpinists from different nationalities experience the consequences of climate change in different ways. In the end, my research population consisted out of seven different nationalities; eight British, four French, three Americans, three Dutch, two Icelandic's, one Swede, one Belgian and one Kazakh. Looking at the total number of respondents, and how the research population is divided over the different nationalities, it is easy to see that the distribution is not equal (example, eight Brits and only one Swede). This unequal distribution makes it very hard to say anything on differences in nationality, as the opinion of an individual can easily deviate from the general opinion. However when there is only looked at just this research population it can be said that there are no clear disparities between the way mountaineers from different nationalities experience climate change in the Alps. There are as many different opinions and experiences between mountaineers from the same nationality as with mountaineers from other nationalities.

ties. Nationality is no factor in determining how somebody will experience and cope with climate change in the Alps.

Appendix III: Consequences for Europe of melting glaciers in the 21st century

In 2002, a four pages article in the alpine magazine “Berg und Steigen”, addressed the impact from climate change on alpinism (Schwörer, 2002). Recently more and more media attention is given to (Economist, 2009; Moerland, 2009), and asked for (Greenpeace, 2006) the consequences of the impact of climate change on the Alps. Nowadays the climate change impacts of melting glaciers are studied by researchers throughout the Alps. The glaciers of the Alps provide fresh water resources for most of Europe. Several studies show that these glacial fresh water resources will be melting very quickly in the near future, thereby causing river flooding throughout Europe (Stratmann, 2004; EEA, 2009). Farther ahead in the future it is expected that many glaciers will have disappeared, according to Haeberli and Beniston (1998) this will be at the end of this century, but other scientists think that it may already be by the year 2050 (Latif, 2004; Greenpeace, 2006; Alcamo et al, 2007, Farinotti et al., 2009). Flooding will be one of the first, but will not be the last consequence, of the receding glaciers. After the period of flooding will come drought as the glaciers have almost completely disappeared. Rivers like the Rhine, Po, Danube and Rhône will dry out (EEA, 2009) and will no longer hold enough water in the summer months to allow transport ships (Isoard, 2009). Next to problems in transport there will also be problems with drinking water and irrigation water for crops as many European countries depended on the rivers for their (drinking) water (EEA, 2009; Isoard, 2009; Moerland, 2009). At the end of this century this will be a very big problem as about forty percent of the European fresh water resources comes directly from the Alps. Still this will not only become a European problem, as countries worldwide are depending on glacial melt water to feed their rivers (EEA, 2009).

Appendix IV: List of respondents

#, Name, Gender, Nationality, Job

- 1 Andy Parkin, Male, British, Artist
- 2 Andy Perkins, Male, British, Mountain guide
- 3 Bruce Normand, Male, Scottish, Scientist/ Award winner Piolet d'Or festival 2010
- 4 David Falt, Male, American, Alpinist magazine journalist
- 5 Denis Urubko, Male, Kazakh, Award winner Piolet d'Or festival 2010
- 6 Gilles Claret Tournier, Male, French, Mountain guide
- 7 Halli Gudmundsson, Male, Icelandic
- 8 *Kathy Murphy, Female, British, Mountain guide*
- 9 Lars Vanhaelewyck, Male, Belgian, Mountain guide
- 10 Luc Moreau, Male, French, Glaciologist
- 11 Martijn van Staveren, Male, Dutch
- 12 Michiel Engelsman, Male, Dutch, Mountain guide
- 13 Michael Silitch, Male, American, Mountain guide
- 14 *Nathalie Hagenmuller, Female, French, Mountain guide*
- 15 Nick Bullock, Male, British, Nominee Piolet d'Or festival 2010
- 16 Rick Marchant, Male, British, Mountain guide
- 17 Robert Thor Haraldson, Male, Icelandic, Icelandic mountain guide/ Professor.
- 18 Roeland van Oss, Male, Dutch, Aspirant mountain guide
- 19 Stephane Legarde, Male, French, Ski instructor
- 20 Stuart MacDonald, Male, British, Mountain guide
- 21 *Tania Noakes, Female, British, Aspirant mountain guide*
- 22 *Ulrika Asp, Female, Swedish, Mountain guide*
- 23 *Zoë Hart, Female, American, Mountain guide*

Questionnaire respondents:

- 24 Lindsay Griffin, Male, British, Jury member Piolet d'Or festival 2010
- 25 Martin Maron, Male, Scottish, Mountain guide

Appendix V: Map of Mont Blanc valley



Picture 22. Map of the Mont Blanc valley. Source:<http://www.chamonix.net>

The Chamonix Valley stretches from Servoz to Barberine on the Swiss border. The main towns (working up the Valley from Servoz) are Servoz, Les Houches, Les Bossons, Chamonix, Les Praz, Argentiere, Le Tour, and Vallorcine. Next to these main towns there are a lot of small villages in the valley.

Appendix VI: Further options for research

- What is the attraction of the mountains? What connects people from all over the world to go climbing? Or even want to spend their lives in the mountains. Why are people immigrating to mountain villages? Why do people go and climb and risk their lives under harsh circumstances?
- What will happen to the inhabitants of ski resorts and mountain villages as tourism will stay away in the future due to the consequences of climate change? How will the demography look like? Will villages grey and eventually be deserted?
- Melting glaciers will have a huge impact on the European rivers which are depending on melting water, how will social relations between nations and other authorities be affected? And what about the millions of people living next to the rivers? First it is expected that there will be more floods, followed some decades later by times of drought.
- It will be very interesting to take a closer look how the different Chamonian communities live together and cooperate, while at the same time keeping social spaces between them. In addition it might be worth looking at other mountain villages with the same kind of tourist attraction like Grindelwald, Zermatt or Saas Fee to see if the same is occurring there.