

Part II

Adaptation Challenges

Indigenous Responses to Climate Change in Extreme Environments

The Cases of the Q'eros (Peruvian Andes) and the Gwich'in (Alaska)

Nastassja Martin and Geremia Cometti

Anthropology is currently facing a major problem, one affecting not only its object (the nonmodern and modern societies it is concerned with), but also its methodology: the solid ground on which we all stand is dissolving into the realm of instability and uncertainty. Climate change is not 'metaphorically' affecting people; it is shaking them to such an extent that they are starting to question their own ways of relating to the world. Confronted with animals, plants, rivers, clouds and stars that will not respond to them in the way that they used to, human societies, especially those living on and from the land, are forced to reposition themselves. Here lies our methodological problem: if people themselves can no longer make sense of their own environment or claim that they know what is happening and why, and if they too feel lost in this globalized world that connects beings in strange and unpredictable ways, how are we anthropologists to make sense of indigenous 'ways of relating to the world'? How are we to describe a stabilized cosmology if its principles are already transformed, or destabilized enough, that what is truly 'significant' is not so obvious anymore?

While conducting our fieldwork (Cometti with the Q'eros from Peruvian Andes and Martin with the Gwich'in from northeast Alaska), we have both been confronted with the same situation: the collapse of the world we wanted to comprehend and analyse, and the breakdown of our own theoretical constructions. This initial traumatic situation led us to imagine a new set of questions concerning the loss of control that indigenous people, and ourselves, were experiencing. What happens

in Gwich'in country when hunters' strategies begin to fail, when they pursue animals that inexplicably adopt new behaviours and trajectories, when they cannot predict or even find out where the animals are or will be, because their vision is blurred by a riot of new potentials and beings?¹ What happens in Q'eros' territories when the rain falls excessively during the rainy season and does not fall sufficiently during the dry season, when the quality and productivity of the potatoes maintaining livelihoods decreases and the frost does not come when it is expected, putting the whole subsistence economy at risk? In a similar vein, what happens to us anthropologists and to our own methods when we find out that we can no longer build a system to assemble the fragments of data we have gathered? In fact, the structures we came up with in order to construct the world we wanted to share in the field of anthropology is in a similar situation to the houses standing on the Yukon river banks: collapsing under the pressure of a tumultuous river that no longer responds to our needs and wants.

That being said, do we anthropologists need to let our desire for alterity melt with the glaciers and ice sheets around us, and therefore abandon our meticulous ethnographies, as many indigenous people are facing the exact same environmental catastrophe as us? Or, on the contrary, can we consider that when confronted with major environmental shifts on a day-to-day basis, indigenous people, particularly those living in environments massively affected by ecological transformations, are already laying down a form of response to the changing world as it is happening to them? Moreover, could we also consider that the responses of these collectives, while mostly living at the margins of the state government that rules them, are in all likelihood rather politically subversive, precisely because they are not what is expected by governmental institutions?

With these sets of questions in mind, this chapter will try to confront two ways of responding to climate change in extreme environments, and describe the very specific manner in which Gwich'in and Q'eros people reflect on their world and on their ways of relating to it. In giving them a voice, we are far from tacitly saying that they hold a better solution than our societies to the ecological crisis. Rather, we assume that, concerned as they are with maintaining animated relationships with the rest of the living world and having to deal with these now out-of-control beings, they might have interesting thoughts on our major and shared problem: how to cope with the world's rapid metamorphosis and how to metamorphose ourselves as humans in order to do so.

The Q'eros

The Q'eros are a Quechua-speaking community from the Peruvian Andes situated on the eastern slope of the Cordillera Vilcanota, roughly 100 kilometres outside of Cuzco.² They are around 2,200 people split into five transhumant communities: Hatun Q'ero, Q'ero Totorani, Marcachea, Quico and Japu. They span three ecological levels. The highest, the *puna*, extends between 3,800 and 4,600 metres. It is at this altitude that the alpacas and llamas are bred. On the *qheswa*, the intermediary level between 3,200 and 3,800 metres, the Q'eros cultivate different types of tubers. The *yunga*, the lowest level, between 1,400 and 2,400 metres, is a wooded zone where maize is cultivated.³

Since 2011, Cometti has carried out several pieces of fieldwork among the Q'eros, focusing on their relationship with the changing climate. Climatic and meteorological changes, especially through modifications in the rainfall patterns, are significantly impacting their agricultural production and are endangering the health and existence of their livestock. The unanimous view of the Q'eros farmers is that it rains a lot more during the rainy season and that the level of precipitation during the dry season has also decreased over the last ten years. The second most important phenomena mentioned by the Q'eros concerns frost, which is normally expected to appear during the nights of the dry season, when there are usually few clouds in the night sky. The Q'eros' general impression is that frost is becoming more persistent and the ground more frozen. Other phenomena, such as hail, fog and changing temperatures, are also mentioned.

Because of these phenomena, especially changes in rainfall patterns, the Q'eros maintain that the production and productivity of different types of potatoes and maize have drastically diminished. Moreover, the quality of the tubers themselves has also declined. According to them, the change in rainfall patterns is responsible for the propagation of *rancha*,⁴ a disease that has been spreading through Q'ero, destroying a good part of the potato production. Atmospheric precipitation variation has also had a significant impact on livestock. During the rainy season, which coincides with the birthing season for alpacas and llamas, the young are particularly vulnerable, and strong and constant rainfall can be fatal. In contrast, pastureland dries out quickly during the dry seasons, reducing the food supply for grazing animals. Around August and September, alpacas and llamas are often underweight and malnourished.

The winter solstice plays a central role in the perception of atmospheric phenomena. The observation of the Pleiades (*Qutu*) is the occasion

for the Q'eros to anticipate seasonal variations. The Q'eros, like other Andean populations, study the luminosity, temporality and size of the Pleiades in order to decide when to seed their different kinds of tubers. In the community of Hatun Q'ero, observing 'the signs of the night' is an annual and rotating function carried out each year by a member of the Hatun Q'ero community and appointed by that same community (other communities having abandoned this practice). The task of this official meteorologist is to observe the signs of future atmospheric variations, such as rain, in order to decide when they have to seed their tubers by empirically observing the Pleiades. The *arariwa* is not just a meteorologist; he also must be able to provoke rain or bring the frost when necessary, by means of certain specific offerings made to the *apu* (the mountain spirit) and the Pachamama (Mother Earth). The *arariwa* thus serves as a connector between the community of Hatun Q'ero and these divinities (and, by extension, the atmospheric phenomena), and is required to satisfy the agricultural and pastoral needs of his community. Poor harvests are interpreted as the consequence of his failure to assume this role of intercessor. In times of climate change, this role is becoming increasingly difficult to fulfil.

The *arariwa*'s problems in dealing with atmospheric phenomena have helped Cometti understand why the Q'eros thought they were losing control over other beings. In the last two decades, they have recognized that they were losing their power to communicate and influence non-human entities such as meteorological and climate phenomena. If the Q'eros' interpretations of atmospheric and climatic changes are complex and heterogeneous, there is nonetheless a common denominator. In a somewhat reductive manner, one could sum this up as 'degradations of the relationship between the Q'eros and the nonhuman entities, in particular the divinities, *apu* and the Pachamama' (Cometti 2015: 215). There is a reciprocal relationship between the Q'eros and other entities that inhabit their social world. For the Q'eros, what unites humans to other beings (humans or nonhumans) is a vital flow. According to Cometti's interlocutors, there is not a common term to define this vital flow. They speak of the prevalence of *samay*.⁵ In the Q'eros social universe, different entities live according to a hierarchy that depends upon their importance: *apu* and Pachamama dominate this hierarchy, then humans, and then alpacas and llamas. The ancestors, or *machula*, also occupy an important place in this hierarchy.

Through their ceremonies, the Q'eros are able to transfer this vital flow to different entities, which are constitutive of their social universe. In other words, by abandoning some of these practices or by undertaking them with less rigour and participation, the Q'eros have degraded their

reciprocal link with *apu* and Pachamama. Thus, the rainfalls are more profuse than ever during the rainy season and do not provide enough moisture during the dry season. As a consequence, the practice of cultivating crops and breeding animals is becoming more and more difficult in Q'eros:

Santos, one of Cometti's most important informants, shared his concern:

Our grand-parents were wiser. In those days, all the *paqu*⁶ would congregate and organize huge ceremonies for the entire community in order to have something to eat and allow everybody to live well. Today a lot of us only think about earning money. It's our own fault if we've lost our beliefs. All the Q'eros you see in Cuzco 'selling themselves' as if they were real *paqu* are liars. They have no power. (Charkapata, Hatun Q'ero community, February 2012)

Santos' words illustrate one of the most widespread ideas among the Q'eros: the near-abandonment of ceremonial practices typical of their ancestors. According to them, in previous decades there existed a range of different ceremonies for the rain, animals, maize, potato and so forth.⁷ Today, according to the elders, the new generation only thinks about money, and most Q'eros are no longer capable of carrying out effective ceremonies. There are, on the one hand, some Q'eros who are uninterested in ceremonies and move to Cuzco in search of employment, especially in the construction sector. On the other hand, one can find Q'eros who practise shamanism as their professional activity. In fact, for the last ten years, an important part of the Q'eros population started migrating to the Cuzco region to practise shamanic ceremonies for the inhabitants of the city and for tourists, using their romantic reputation the 'last Inca community alive' (Le Borgne 2003: 146), and in fact that they are still viewed as the most powerful shamans in Peruvian Andes.

Moreover, the presence of evangelical churches, in particular the Maranata church, was mentioned on several occasions, as Marcelino, an old farmer from Q'ero, shows: 'The "prayers" divided us into two trends when the Maranata arrived. Even more than a thousand prayers made by the Maranata would never have the same effect than one offer made to the *apu*. From now on, everything has changed, we stopped living just like our ancestors, we don't have confidence in anything anymore.'

Therefore, atmospheric and climatic changes are mainly explained by the abandonment of rituals, due to the fact that part of the population converted to religions that condemn practices such as the chewing of coca leaves or the conducting of ceremonies for divinities. In other words, climate change is imputed to a degradation of the reciprocal relationships maintained between the Q'eros and nonhuman entities, in particular their divinities. This interpretation tends to make the Q'eros feel guilty,

especially for having changed religion or for thinking only of commercializing their ceremonies for the inhabitants and the tourists of Cuzco.

The Gwich'in

The Gwich'in people Martin has encountered, on the other hand, don't seem to feel as personally responsible for the fast-changing climate within their region. They instead feel flooded, affected by a pollution coming from 'outside', invaded by newcomers, humans and nonhumans, who did not belong there before.

We are in Fort Yukon, Alaska. Gwichyaa Zhee (the Gwich'in name of the settlement, which translates as 'house of the flats') is the homeland of roughly 600 Gwichyaa Gwich'in ('people of the flats'). The village stands 13 kilometres north of the Arctic Circle, in the midst of the Yukon Flats in the northeast corner of Alaska, where the 2,000 kilometre-long Yukon River meets the Porcupine River coming from Canada, and is surrounded by subarctic taiga. The very first impression that struck Martin when arriving in Gwich'in country was not the vivid presence of a different ontology, but rather a general sense of despair. She was straight away confronted with a situation of massive ecological change, over which nobody had any control or any solution, and the wreckage left by modernity. Humans, animals, plants and rivers all seemed to be taken into this great transformation movement, in which the known land and solid ground tended to disappear, along with all the certainties about 'what is what', 'who is who' and 'what is going to happen'.

Speaking about environmental metamorphosis is not a rhetorical manner of referring to subtle changes that only experienced hunters are starting to notice; it refers to very obvious ecological modifications that tend to intensify every year: sudden break-ups followed by huge river floods, massive forest fires, collapsing river banks due to the melting permafrost, animals changing their migratory route in unexpected and unpredictable ways, new animals coming into the country, polar bears moving south and cougars moving north in Alaska, people falling through the river ice during the winter in places where 'it always held' and so forth.

What modernity has left behind is not only alcohol, drugs, rusting heavy equipment and old snow machines; it is also a dualistic, reversible and external way of thinking about the environment, especially in the case of Alaska, where nature was transformed into an exploitable reservoir of natural resources on the one hand and into a wilderness sanctuary on the other hand, casting away all other forms of relations to the land

that did not fit this pattern. Last but not least, the phenomenon of pollution in arctic and subarctic regions is now of great concern for people. What is a hunter supposed to think when he opens up the caribou he just killed and finds its intestines infected by the lichens it had eaten, which themselves are contaminated by acid rain? Not much, apart from saying: 'See, we get everybody's pollution. The Chinese pollute over there and the caribou die right here.'

In terms of climate, longer summers and shorter winters have been noticed, along with early and more sudden ice break-ups, bringing massive floods into the villages. In Gwichyaa Zhee in 2009, this phenomenon washed away many houses built nearby the Yukon River, when the sandbanks collapsed. Later that same summer, very large fires started in the Yukon Flats, preventing contact with the outside world. Indeed, the melting of the permafrost is drying the soils, which combined with the effects of a proliferation of pine beetles, leave a lot of dead standing trees susceptible to fire with the slightest spark. That summer, fires did not stop until the end of August. A very thick smoke obscured the air and sometimes we could not even see the other side of the Yukon River. A raw burning smell filled the village, the inside of houses, and the inside of people's minds and bodies. At the time, for everyone there, this precarious situation was strongly tainted with a feeling of 'imminent disaster'.

The animals, for their part, seem to be modifying their migration patterns so much that it becomes very hard to follow their trajectories or to predict from where they are coming and when they are going back. Geese have a tendency to adjust their routes in the spring: from people's accounts, they have a difficult time recognizing their safe landing zones due to the drying of the peat bogs. Caribous are staying longer in the Arctic coastal plain and migrate later to the subarctic forests. Very skinny polar bears are leaving the great north and crossing the Brooks Range in order to find food. Cougars, never seen in subarctic regions in the past, are appearing more and more, following rabbits, who have been following the grass that is now regrowing much faster on the Yukon Flats' burnt soil.

What is first quite obvious is that these northern environments can no longer be considered as 'renewable', as no hunter knows for sure if the animals are going to come back the following season and, alas for Marshal Sahlins (1972), there is now a very vivid conception of scarcity in these hunting-gathering societies. Indeed, the way the 'cycle of return' is conceived by the indigenous people is no longer so cyclic (Brightman 1993). Similarly, the animals that are supposed to 'give themselves' to the hunter (Brower 2004; Fiennup 2003; Nelson 1983), following the general pattern of northern animism, have lately been showing strong signs

of resistance instead. Willerslev's (2007) idea – according to which the manipulating power that is present in hunters' imitation of prey rests in their dual capacity to incorporate its 'Otherness' while profoundly remaining the same – does not quite fit the current physical realm of concrete interspecies interactions. Of course, mimesis, seduction and all the other aspects of hunting in the subarctic that have been thoroughly described in ethnographies are still practised. However, hunters' ability to keep up a 'double perspective' in order to achieve a successful hunt often fails, for the very reason that the animals are themselves, as 'people' (*dinji*, as they are called in Gwich'in), making their own decisions and choosing their own nontraditional paths according to the environmental metamorphosis they are experiencing.

Even salmon, animals that have always found their way back to their birthplace, are behaving in strange and unpredictable ways. As Simon Francis, Fort Yukon's oldest hunter, told Martin one day while pulling the net out of the water:

We don't know. Every year it's different. Last year they went up the Chandalar. They've never done this before. They change every year. They smell the water and decide where to go. They have their own ways. But if the water smells different like it does now, they too can get lost (Simon Francis, Fort Yukon, Alaska, May 2010)

Wildlife biologists explain the salmon's behavioural modifications by the presence of minerals coming from the massive melting of the ice sheet up north, which disturb the salmon's orientation capacities. Simon, for his part, expresses his concern in a very poetic way: 'They are in the fog, like us in the smoke. They've lost their way.'

The supposed 'common sense' of northern hunters is no longer so common, and what used to work in the past, and what people used to know about the animals they prey on, is being disrupted by the increasingly uncertain state of animals. Instability might have been occasional in the past; today it is becoming the norm. Interestingly enough, the actual situation in subarctic Alaska resonates with origin myths found there: Gwich'in people often said they felt like they were 'floating around' in a world where the boundaries between beings had blurred. Pushed back onto the raft that held a small animal and a lonely man at the origin of times, drifting away on an endless sea with no land to be seen, it feels like we have gone from speciation and differentiation back to the mythical origin of time, where places and beings were not clearly defined yet, where every living form was yet to be identified. However, there is a very significant difference: the unique, common and shared language between all living things is now nowhere to be found (Martin 2016).

Metamorphoses in an Instable World

A first assessment of these case studies shows two rather opposed ways of relating to climate change. As we have seen, the Q'eros explain meteorological and climatic changes through a degradation of relationships between themselves and nonhuman entities, in particular their divinities. This interpretation tends to make them feel guilty, particularly with regard to the commercializing of their ceremonies for Cuzco's inhabitants and tourists. On the other hand, in Alaska, Gwich'in people do not consider that the abandonment of their ritual practices has provoked the changes, but rather that the land is being invaded by external entities, both human and nonhuman, blurring the boundaries between territories, beings and species. There, ecological transformations are directly linked to the existence of 'another humanity', modern and industrial, provoking, from a distance, the phenomena currently observed in these regions, such as pollution, erosion, melting of the ice sheet, animals changing their migratory routes, floods and forest fires.

In other words, while the Q'eros blame themselves for the transformations they are experiencing in the Peruvian Andes, in the Alaskan taiga Gwich'in people are pointing at the 'outside' world to explain the massive changes confronting them. This difference in the attribution of causes can partly be explained by the different historical relations that Q'eros and Gwich'in maintain with the Western world, and these would probably require a specific study in order to clarify them. But beyond questioning who or what is responsible for these climatic and meteorological changes, we now discuss the analogies that can be made between these two ways of responding to climate change in extreme environments.

The disappearance of 'dreamers' and powerful shamans⁸ is something that we both have noticed in our fieldwork, as have other anthropologists (Pedersen 2011). In Alaska nobody seems to be able to tell what the animals are going to do, as the subtle environmental clues that hunters used are now undergoing great transformations, and because the land is getting crowded, as they say there, by the invasive practices of other humans. Both Q'eros and Gwich'in are facing instability and uncertainty, embodied in climate change, and they both seem to have lost their power to communicate with nonhuman beings. This idea is widespread among the Q'eros. For example, on a foggy day, when Cometti was helping some people to pasture their alpacas, a young *paqu* told him the following story:

One day, one of the most powerful Q'ero *paqu*, an *altumisayuc*,⁹ decided to sit down outside his house and look at his sacred mountains, but an intense fog prevented him from seeing them. He started to chew some coca leaves and

exhaled in the direction of *apu*. The *altumisayuq* politely asked the fog to move so that he could again see his sacred mountains. The fog did not move. He tried again. But the fog still did not move. It was the first time the fog did not follow his request. That day the fog stopped listening to us and the *altumisayuq* realised that something had changed in Q'ero. (Charkapata, Hatun Q'ero community, May 2011)

Sitting on the Yukon River bank with Clarence, former tribal chief of Fort Yukon, watching the icebergs go by during river break-up time one afternoon, he made the following comment: 'People are dying, from diseases, cancer. Animals are dying too, for the same reasons. There's got to be something in the land, the water, the air, something that's killing us.' It was by focusing on the liminal zone, where the 'something that is killing us' dwelled, that everything shifted in Martin's approach to Gwich'in cosmology in the actual situation. She suddenly stopped viewing these discourses as depressing statements acknowledging the overwhelming presence of an invasive Western world stressed by unstoppable ecological modifications. She realized they conveyed a profound recognition from the Gwich'in that they had lost control.

Such recognitions from the people we study led us to a deep transformation of our initial problematic, and a new set of questions emerged. Is there something unseen in the Gwich'in and Q'eros practices that allows them to be more informed than was previously the case? How is it that in Q'ero, despite the fact that people are abandoning some rituals, the majority of them continue to acknowledge and honour their divinities through different kind of ceremonies? How is it that in this state of ecological and political crisis, some Gwich'in in Alaska continue to leave their villages, houses and jobs, and go back to the forest to engage in relationships with these out-of-control beings?

The Q'ero certainly used to live with instability and uncertainty in the past, as Nicolas, a farmer from Q'ero, described:

One January, when I was a child, the rain did not want to fall. After various ceremonies without success, the elders of the village ordered the younger ones to go down into the *yunga* to pick up some frogs and toads from the rivers. We got down and collected a large number of amphibians. The day after the rain begun to fall. Frogs and toads live a large part of their lives in the water and therefore they have a very close reciprocal relationship with the rain. They know how to call the water. (Espadilla, Marcachea community, August 2011)

This account shows that even in the past, they did not always have control over nonhuman beings. Climate change is certainly increasing the uncertainty, but nevertheless the majority of Q'eros still maintain reciprocal relationships with *apu* and Pachamama.

In Alaska, Martin started to look for situations where people were experiencing this 'loss of control' and places where hybridity and movement were overriding identity and stability. What if, she asked herself, the very unstable and uncertain state of things was exactly what was reproducing their desire to connect with (through hunting practices) their nonhuman neighbours? And if this was the case, how would we anthropologists have to reframe our way of talking about the situation of indigenous collectives in environments greatly affected by climate change? She began searching for details within their oral stories that would express failure rather than success, doubt rather than certainty. The idea was to figure out how they dealt with the fact that the general structure of their stories no longer quite fit their incarnated interactions with other living beings. She wanted to know if there was something within their own cosmology, rarely spoken of, that prepared them for the rather unstable state of things and that enabled them to keep relating to it ingeniously. She started to look for winks, smiles on the side, ironic comments and jokes about the stories they were telling. She hunted down any detail that showed that even though they talked about their relationship to the land in a rather homogeneous way, there was something else, something more to it, that had to happen 'on the side' and on an ambiguous level, for these blurry zones were the only ones that could welcome these uncertainties and inject them back into the general pattern. For example, the important part in a traditional story like 'Dinjik Dinjii Dilkwaii' ('how a moose killed a man') is not only about the fact that the hunter failed to kill his prey and instead got killed by the moose he was pursuing. Nor is it entirely about the reflexivity and distance brought by this story, which warns people to reconsider their actions and reposition themselves with a better understanding of the situation. What is important, in a much simpler way, is the fact that there always is a risk, an uncertainty, a peril in any hunt, that it has always been like this and that this is the very thing every hunter should keep in mind.

Back in Q'eros, the increasing uncertainty might be explained by the abandonment of several rituals; nevertheless, it is also because of this uncertainty, because of the elements not answering to the Q'eros in the way they did before, that numerous people are performing rituals and making offerings to their divinities. People are now fully acknowledging that a concrete reciprocal relationship rather than a phantasmagorical human control over nonhumans can make the difference (the nonhumans are showing them their power and resistance). The previous approach has been proved wrong by the rest of the living beings, who have chosen their own paths while they are responding to climate change. In other words, the Q'eros are aware that they might not have the same power

as their ancestors, but they nonetheless still understand that opening a line of communication with nonhuman entities through rituals is the only way to survive climate change. For instance, during the carnival celebration, the Q'eros' families are still trying to re-establish or perpetuate a reciprocal relationship with *apu* and Pachamama. A good example is the *phallchay* (which takes its name from the gentian flower, *phallcha*), a propitiatory ritual for the reproduction of Andean camelids. During this ritual, the Q'eros ask the sacred forces for protection, multiplication and fertility of their alpacas.

In northern Alaska, Gwich'in have, as we have presented, an efficient and creative way of answering the global eco-human crisis, drawing their power from the ongoing state of instability at play in subarctic environments nowadays. It turns out that Gwich'in are subversive towards the outside world primarily because they are also subversive about themselves and they understand that there is always more to what they state. This 'more', in which lies the doubt, makes a creative future possible. In this light, the resistance to the Western world and its collateral damages does not come from an instituted ontology that is by essence different and opposable to it, but in humans' ability to dwell in these uncertainties and re-create new forms of relationships with new beings on a daily basis. The northern animistic world, if we want to call it that, restores itself in the very alteration it undergoes.

Conclusion

Approaching indigenous collectives from the perspective of their fragmentation rather than their established structure and of their uncertainties rather than their instituted and stabilized statements does constitute a significant turn, especially in the context of a drastically transforming environment. Cornelius Osgood, one of the first Gwich'in ethnographers, was very concerned in the 1930s as he was wrapping up his fieldwork. He confessed in his monograph that he failed to embrace the whole Gwich'in culture and that he only could access 'remains' of the ancient culture he sought, as it had already been washed away or destroyed by their encounters with Westerners (Osgood 1970). He deplored the fact that all he could talk about were parts of myths and stories, chunks of hunting times, fragments of a different way of relating to the world than his own. The whole story, the unaltered cosmology, had already vanished. But could there be another version to this story – one in which those 'fragments of ancient thought', as he called them, are what has always been there, lying underneath the surface of the lakes and stories,

with details of relationships with other living beings generally forgotten and only occasionally exhumed when a collective imperatively needs to rethink its relations to a transforming world? Climate change, in this light, is reminding us of the modern failure to organize and categorize the human and nonhuman in cosmologies and as species. The incredible point about this pressing contemporary actuality is that these uncertainties have already been thought and formalized in the distant mythical times of the indigenous societies we work with. In those times, before speciation or while it was happening, nobody was truly themselves yet, but everybody was, for this very reason, intensely, assiduously becoming themselves. Then, while the process of individuation was happening for every being all the time and in all directions, identity was almost a 'non-sense'. Then, hybrids (such as the *naa'in* for the *Gwich'in*) were proliferating and challenging humans on how a common world could be built to live in.

This brings us to the specific responses that indigenous people in changing environments can provide to the transforming ecologies and politics in which they are immersed. If the *Q'eros* and the *Gwich'in* have different ways to articulate the reasons and responsibilities attached to the ongoing changes, they share an equal awareness regarding this new form of instability challenging their power to communicate with the beings they use to dwell with. Their renewed thoughts and patterns of actions are ways of responding to a world that has become out of control.

The *Q'eros* interpret environmental changes through a degradation of relationships between themselves and nonhuman entities, blaming themselves for the transformations they are experiencing in the Peruvian Andes. In *Q'ero*, climate change is a constant threat that manifests itself in a variety of forms and whose origin can appear intangible. Despite the introduction of new techniques in order to face environmental changes, the majority of them still carry on making offerings to the divinities and maintaining a reciprocal relationship with the territory in which they dwell, even through challenging uncertainties.

In the Alaskan taiga, *Gwich'in* hunters recognize on an everyday basis that the forces required to change a situation or to access a new level of understanding are to be gathered in the realm of other beings. This is at the core of almost every northern story: in times of crisis, one needs to seek the help of the other who lives in a mysterious territory usually not accessible to humans. If one survives this process, one comes back as a transformed being, enhanced by what was received. For instance, the loon brings the blind man under the surface of the lake and helps him recover his vision. He is now able to face his human life as a renewed man. The muskrat helps the man by diving deep down to the bottom of the sea

and gathering dirt in his claws; with this, they create a land to walk on. This process, which can be described as a way to encompass some of the qualities of another in oneself, whomever this 'other' has become, is not only mythical; indeed, it is what Gwich'in hunters do when they walk in the liminal zone of the encounter with the animal they pursue. Whether the hunt is successful or not is not important; whether the animal is truly himself or is already transformed by what has been happening around him – a dramatically fast-changing climate, for example – does not stop the process either; it enhances it, as the animal becomes even more unpredictable. This unknown about the other, the unknown about the outcome of the encounter is part of what makes it so desirable. It is what takes the necessity of hunting to a whole new level; it is what a hunter has to deal with, facing somebody that might face him in return.

This voyage is in itself one of the most powerful responses to the Western world as well as to ecological alterations. Under the water, in the darkness of the forest, on the foggy mountain tops or in the gloomy northern sky, this travel process is more than ever becoming a necessity, not only because it helps in terms of meeting the forces needed to face the upcoming challenges, but also because the whole idea is to connect different beings in order to create something that does not yet exist, something that still pertains to the realm of the unknown.

Nastassja Martin has a Ph.D. in social anthropology and graduated from EHESS Paris, specializing in arctic societies (nastafaride@hotmail.com). She worked among the Gwich'in of Alaska for her Ph.D. and has subsequently conducted new research in Kamchatka among the Even people as a postdoctoral fellow at Fyssen University in Aberdeen. She is now working on a comparative study focusing on the impact of climate change and governmental politics on indigenous people on both sides of the Bering Strait. She is the author of two books, the first about Alaska, *Les âmes sauvages* (La Découverte, 2016) and the second about Kamchatka, *Croire aux fauves* (Verticales, 2019).

Geremia Cometti has a Ph.D. in Anthropology from the Graduate Institute in Geneva. He is Associate Professor in Anthropology and the Director of the Institute of Anthropology at the University of Strasbourg (cometti@unstra.fr). Previously, he was a Swiss National Science Foundation (SNSF) postdoctoral fellow at the Laboratoire d'Anthropologie Sociale (Paris) and SNSF fellow in the UCL Anthropology Department (London). His most recent publications include: 'El Antropoceno puesto a prueba en el campo: cambio climático y crisis de las relaciones de reciprocidad entre los q'ero de los Andes peruanos', *Antípoda. Revista de Antropología*

y *Arqueología* 38 (2020): 3–23; and ‘Non-humain, trop non-humain ?’, in Geremia Cometti, Pierre Le Roux, Tiziana Manicone and Nastassja Martin (eds), *Au seuil de la forêt. Hommage à Philippe Descola, l’anthropologue de la nature* (Tautem, 2019), pp. 211–28.

Notes

1. Following Philippe Descola’s terminology (2013), we use the word ‘being’ as a general term that includes every possible entity, from human beings to natural beings (plants, animals, stones) or even supernatural beings (spirits, ancestors, divinities).
2. For more information about the Q’eros, see Cometti (2015); Flores Ochoa and Nuñez del Prado (2005).
3. However, due to the poor harvests of recent years and the fact that the heavy rain ruined the path to reach the places in which maize is cultivated, most have now abandoned this type of crop.
4. ‘Rancha’ is a potato disease caused by the parasite *Phytophthora infestans*. This disease is colloquially known as ‘potato blight’.
5. Regarding the use in the Andes of the term *samay* and other terms related to this vital flow as *sami animu* and *kallpa*, see also Allen (2008); La Riva González (2005).
6. *Paqu* is the general term used for a shaman in Q’ero.
7. According to him, they abandoned several ceremonies, like the *llaqta hampiy* (taking care of the village), *papa hampiy* (taking care of the potato) and *sara hampiy* (taking care of the maize).
8. We talked about the disappearance of ‘powerful shamans’ and not simply ‘shamans’, as actually in Q’eros, for instance, the number of self-proclaimed ‘shamans’ has increased within the city, though they are not recognized in the mountain settlements. A similar phenomenon is happening in Alaska, where numerous ‘medicine men’ can be found in the cities of Fairbanks and Anchorage, though in the villages they would be called ‘down-river Indians’, a stereotype massively affected by Hollywood and its ideas and trends, or ‘apple Indians’, red on the outside and white on the inside, and so forth.
9. *Altumisayuyq* refers to the highest position in the shaman hierarchy of the Andes.

References

- Allen, C.J. 2008. *La Coca Sabe: Coca e Identidad Cultural en una Comunidad andina*. Cusco: Centro Bartolomé de Las Casas.
- Brightman, R.A. 1993. *Grateful Prey: Rock Cree Human–Animal Relationships*. Berkeley: University of California Press.
- Brower, P. 2004. *The Whales, They Give Themselves: Conversations with Harry Brower, Sr.* Fairbanks: University of Alaska Press.

- Cometti, G. 2015. *Lorsque le Brouillard a Cessé de Nous Écouter : Changement Climatique et Migrations chez les Q'eros des Andes Péruviennes*. Bern: Peter Lang.
- Descola, P. 2013. *Beyond Nature and Culture*, trans. J. Lloyd. Chicago: University of Chicago Press.
- Fiennup, R.A. 2003. *Hunting Tradition in a Changing World*. New Brunswick, NJ: Rutgers University Press.
- Flores Ochoa, J., and J. Nuñez del Prado (eds). 2005 [1983]. *Q'ero, el Ultimo Ayllu Inka*. Lima: Instituto Nacional de Cultura and Universidad Nacional Mayor de San Marcos.
- La Riva González, P. 2005. 'Las Representaciones del *Animu* en los Andes del Sur Peruano', *Revista Andina* 41: 63–88.
- Le Borgne, Y. 2003. 'Evolution de l'Indigénisme dans la Société Péruvienne. Le Traitement du Groupe Ethnique Q'ero', *Ateliers* 25: 141–59.
- Martin, N. 2016. *Les Âmes Sauvages: Face à l'Occident, la Résistance d'un Peuple d'Alaska*. Paris: La Découverte.
- Nelson, R.K. 1983. *Make Prayers to the Raven: A Koyukon View of the Northern Forest*. Chicago: University of Chicago Press.
- Osgood, C. 1970. *Contributions to the Ethnography of the Kutchin*. New Haven: Yale University Press.
- Pedersen, M. 2011. *Not Quite Shamans: Spirit Worlds and Political Lives in Northern Mongolia after Socialism*. Ithaca: Cornell University Press.
- Sahlins, M. 1972. *Stone Age Economics*. Chicago: Aldine-Atherton.
- Willerslev, R. 2007. *Soul Hunters: Hunting, Animism, and Personhood among the Siberian Yukaghirs*. Los Angeles: University of California Press.