Polar Worlds International Conference 2011

The papers published in this issue of *Polar Record* were first given at the Polar Worlds International Conference: Environmental and Social Sciences which took place in Paris in January 2011 and was organised by the GDR Mutations polaires (GDR 3062). A research group hosted by the National Centre for Scientific Research (CNRS), the GDR brings together social and environmental scientists. It has been promoting on-site data collection and interdisciplinary projects in Arctic studies for 30 years.

Convinced from our experience of the value of crossed perspectives to understand polar regions our goal was to create an opportunity to share it with colleagues from various fields and countries. We are grateful to be able to carry the experiment further, publishing in this journal a panel of papers coming from very different scientific horizons.

To debate over certainties and uncertainties of Arctic science, the conference invited presentations to focus on observed recent changes (within the last 100 years or less). More than a hundred researchers from 15 different countries answered our call and gathered together in Paris. Eight guest speakers as well as two members of Canadian first nations (Cree Nation and Inuit people) were invited to give an overview of recent changes in polar regions. More than 60 papers were presented, mainly in plenary sessions in accordance with the interdisciplinary scope of the conference. Presentations displayed an amazing variety of subjects. The good balance between senior and junior researchers illustrates the vitality of polar science today.

Understanding recent changes implies extensive observation and critical analysis of the observed. Even for the most contemporary changes, appropriate observation is the problem. An elementary meteorological parameter, air temperature, already raises many issues. Data really observed, recorded, reliable and available are very rare. The earliest ones date from the 19th century, they are the southernmost ones and are riddled with gaps. For the high Arctic, the longest data series available are for Svalbard and start in 1917. Old data suffer from non-systematic acquisition protocols. Since the 2000s, weather stations have been automated. More data is being recorded but new problems appear due to a lack of continuous on-site human supervision.

Likewise, many presentations, such as those relating to permafrost or polar bears, stressed the lack of extensive observations and the need to develop further a dialogue with the indigenous people, the only long term inhabitants of the Arctic world. They have developed highly valuable knowledge about the dynamics at work in many fields and at many spatio-temporal scales that are still not fully understood by western science.

Another important issue related to changes in the polar worlds is that of adaptation and adaptability. Arctic people have long been admired for their capacity to adapt to the high variability of their environment and yet, paradoxically, they are often depicted as powerless victims lacking agency to cope with the rapid changes occurring on their lands.

When discussing contemporary changes, Inuit people, for example, continuously emphasise their ability and willingness to adapt. Many, not all, think of climate change in terms of new opportunities for economic development and, as a consequence, for political empowerment. On-site research also reveals the need to widen our understanding of adaptation and adaptability, as it is not only a matter of people adapting to the environment, of culture abiding to nature. The environment itself is also continuously adapting, so that change is both a cause and a result of a general system that encompasses natural and human dynamics. Accordingly when Arctic people talk about adaptation, their concept of change is a global one, in which the natural and the human are tightly intertwined and cannot be separated. Indeed, the main concern of many reindeer herders of Siberia is not climate change but social, economic and political change. Similarly the Inuit often stress how government regulations of hunting activities make it impossible for them to respond - adapt - to changes in ice and weather conditions and in animals' behaviour. Climate is not the problem, politics are.

The conference aimed at highlighting certainties and uncertainties regarding changes. Among these climate change was often mentioned but almost always to ponder its potential consequences on polar environments and populations. Permafrost thawing and ice caps melting were clearly referred to as processes that will occur slowly enough to allow for societies to adapt. The crucial importance of spatio-temporal scales when observing changes of any kind was stressed. Indeed there is a huge gap between global and local, long term and short term observations. Similarly, measured and perceived changes can be quite different. Processes measured might go unnoticed, changes perceived might not be measurable. Beyond what we learned, what did we achieve? This conference was a bet. Gathering very different people for a meeting is one thing. Having them truly listening to one another, debating over each other's research questions and methodologies is something else. But it worked. And as one of our guest speakers commented: 'You created a template. You need to bring it forward.'

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