Globalising challenges of well-being in the Finnish North

Tim Luoto[1], Hannu I. Heikkinen[2], Arja Rautio[3]
[1]PhD Student of Cultural Anthropology, University of Oulu
[2]Professor of Cultural Anthropology, University of Oulu
[3]Research Professor of Arctic Medicine, University of Oulu

Abstract: The processes related to the globalization and climate change are challenging the well-being in Finnish North. The aim of this article is to identify the factors related to the global change which will affect the well-being of people in Finnish North, and to discuss the possible means of adjustment and adaptation as response to the emerging new settings. We have reviewed the recent scientific literature considering climate change, globalization and well-being. According to our research, the global change impacts the well-being of individuals and society on many fronts: The processes of global economy renders the local economies unpredictable. Such changes will also alter the cultural and socio-economic composition of communities, fundamentally changing the traditional ways of life. In addition, the climate change is further challenging the society: the changes in natural environments can impair the physical security in small peripheral communities. However, the recent advancements in communication technology may help individuals and communities to adapt in a rapidly changing world.

Keywords: Well-being, changing environment, adaptation, northern communities

Introduction

The circumpolar North is experiencing changes in many fronts. The accelerating processes of globalisation and climate change affects the sociocultural and ecological structures, causing multiplying impact on human health and well-being (ACIA 2004; AHDR 2004; ASI 2012). It also includes demographical questions such as aging of population (Emelyanova & Rautio 2012), migration (Lankila *et al.* 2013) and migration based possibilities of conflict (Reuveny 2007).

Changes create challenges as the established and traditional ways of life are shaped towards urban, industrially and economically dependent basis (Nuttall & Callaghan 2000). Changes set pressure upon both individuals and society to adjust in the emerging context. The impacts of globalization and climate change vary between regions and therefore locally contextualized assessment is required (ACIA 2004; Tietäväinen *et al.* 2010).

This article focuses on the recent or emerging challenges and their potential impacts on well-being regarding Finnish North. It covers issues such as environmental and population changes, well-being and adaptability and it is based on the review of recent scientific literature.

Well-being and emerging challenges in Finnish North

Well-being can be understood in multiple terms by different individuals and in different cultures (Helman 2000). According to Mathews and Izquierdo (2008, 5) well-being is an optimal state of individual, community and society encompassing the living environment. Thus well-being does not merely mean the absence of disease (physical or mental), but it also contains aspects such as the feeling of physical and economic security and the possibility to influence the various aspects of life (empowerment). Well-being is understood in a cultural context, which consists of physical, mental and socio-economic factors which are overlapping and interrelated (Figure 1). Well-being can be understood as a good quality of life.

We conceptualise well-being through a holistic model (Figure 1) where the outer sphere of culture is the underlying matrix defining the understanding of good life. It contains norms, such as normality and how different people are classified as sick or abnormal (Helman 2000; Mathews & Izquierdo 2008). In the middle there are three culturally bound dimension:

1. The physical well-being underlines the absence of maladies, the feeling of physical security, the availability of medical services and safe and clean environment.
2. The socio-economic well-being relates to adequate social relationships and income, sufficient to support the well-being.
3. The mental well-being underlines the absence of mental illnesses, and includes elements such as positive attitude towards life, happiness and feeling of control over one's life.

The arching bidirectional arrows represent the interrelations of the components: If all the spheres are positively balanced, the individual is likely to feel *well*, while disturbances degrade the overall well-being. However, even severe disturbances in one sphere do not make an individual necessarily unhappy (Diener *et al.* 1999).

Our model of well-being allows wider subjective variation regarding the individual well-being compared to the model suggested by Dahlgren & Whitehead (1991) since it does not include culturally normative factors, such as unemployment as determinants of health. The subjective well-being (SWB) is based on individual personality, although external factors such as income, security and social factors (like family relationships) may have significant impact to it.

Our research focuses on Finnish North, or Finnish Arctic, depending on definition (see Nuttall & Callaghan 2000; ACIA 2004, ASI 2010; AMAP 2014). It encompasses roughly the county of Lapland, although the study area expands to the neighbouring counties, due to the environmental and societal conditions as well as administrative arrangements. Population (182,514 in 2013, Statistics Finland 2013) in Finnish North is mainly Finnish and Sámi, although minorities of Swedish, Russian and Romani are present.

In general arctic is perceived as politically and socially stable region although there is

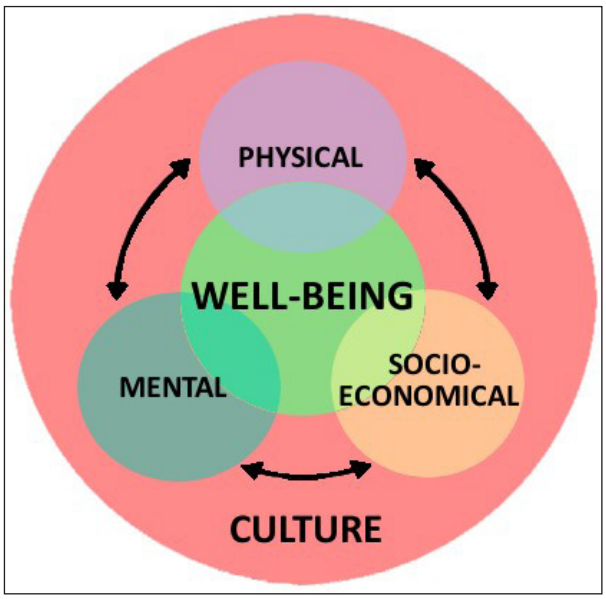

Figure 1. The holistic model of well-being.

some social and environmental problems due to excessive industrialisation and exploitation of natural resources (see e.g. Nilsson 2010; Suopajärvi 2013; Sandlos & Keeling 2012). One of the most decisive factors affecting the circumpolar North is the rapid climate change (ACIA 2004; AHDR 2004; ASI 2012): The annual temperatures in arctic have increased nearly twice the rate as in the rest of the globe and the winter temperatures are high above the long-time averages and the precipitation in Arctic has increased approximately 8% on average over past century (ACIA 2004, 10–13). In Finland, the annual mean temperature has increased approximately 1°C during the hundred year period (1909–2008) and especially springs have been warmer (1.59°C during the period). When observing the last 30 years (1979–2008), there has been 4.28°C increase in winter mean temperatures (Tietäväinen *et al.* 2010).

The negative impacts of warming are experienced foremost by the communities that have traditionally relied on cold winter (Brubaker *et al.* 2011). Furthermore, if the global warming accelerates, there may be other consequences, such as invasive species, including bacteria and infectious diseases (Parkinson & Butler 2005). The warming climate also bears possibilities: the growing season may extend and the possibilities to harness new raw materials may appear (Heininen 2014). Estimations include increases in storms and precipitation affecting transportation and sanitation due to the flooding and thawing of permafrost. The indirect consequences may create problems with water and food security, livelihoods and contaminants (ACIA 2004; ASI 2010).

Climate change is in a way part of the puzzle called globalisation. In their comprehensive overview of the discord in scientific discourse considering the globalisation, Al-Rodhan and Stoudmann (2006) coined following definition of globalisation: *[P]rocess that encompasses the causes, course, and consequences of transnational and transcultural integration of human and non-human activities.* In short, globalisation means an international and intercultural exchange of things, information, people, products and capital – all aspects that are allegedly "shrinking the world" by integrating and binding together formerly distinct places, cultures, nations and people. For example, sociologist Anthony Giddens (1990) defined that *[g]lobalization can thus be defined as the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa.*

We use the concept of globalisation to refer specifically to developments accelerated by contemporary factors such as emergence international legislation (e.g. *Kyoto protocol*), international political-economic alliances, the development of transportation and telecommunications. It is useful to include prefixes such as *cultural* (or *social*), *political* or *economic* globalisation in order to specify the aspects of globalization. While referring to various aspects of globalization we emphasize that they are often interrelated and simultaneous.

The focal concept merging the preceding discussion is adaptation. The accelerating processes of globalisation and climate change – many times expressed as global change – challenges individuals and societies to adjust to the emerging new context. However, adaptation is not only about technology but is also related to psychological and cultural properties of individuals and societies (Bennett 2005). It has been suggested that the capability for social learning (e.g. education) is the most decisive factor enabling human adaptation (Boyd & Richerson 1995). Even though education plays critical role in enhancing adaptive capabilities, an incautious application can also serve as means of assimilation of, for example, indigenous peoples or as tools of colonisation (Juutilainen *et al.* 2014; Omolewa 2006; Gaski 2013; Kuokkanen 2008).

Challenges on physical well-being

In the holistic model of well-being (Figure 1), determinants of physical well-being include aspects such as physical health, security and environment. Regarding the circumpolar communities, their adaptation capabilities to the impacts of global changes depends largely on the technology, wealth, institutions, infrastructure and human resources (Larsen 2010). In this respect Finland has advantage as a politically stable and wealthy state, with advanced technology and developed infrastructure and educational systems (Heikkilä & Laukkanen 2012). Regardless of this, the Finnish North is facing the aging of population, whose health status is often poorer than the people of southern regions (Emelyanova & Rautio 2012). In addition, the expenditures of healthcare tend to be higher in arctic regions, not correlating with health indicators (Mendez *et al.* 2012).

Among the greatest health related menaces in North Finland are the diseases of the circulatory system. In 2009 there were approximately 4884 deaths in the city of Oulu and Lapland together, of which 48% were estimated to be related to diseases of circulatory system (Emelyanova & Rautio 2012).

However physical health includes also aspects such as the good physical fitness. Maintaining and promoting physical fitness could also significantly reduce cardiovascular diseases. Especially among the children and adolescents, physical fitness has been linked to significantly reduced risk of various ailments of both body and mind, such as cardiovascular diseases and depression (Ortega *et al.* 2008). Previously we mentioned technology and education as a key means of adaptation. However, they tend also to increase the sedentary lifestyle: automated and physically less demanding work in a combination with extended education are increasing the time people spend sitting. Increasingly sedentary lifestyle requires new means for adaptation. For example, Ortega *et al.* (2008) suggest intervention via promoting positive health behaviour, and Helajärvi *et al.* (2013) proposes technological solutions to have more importance in health management in future.

The physical well-being is further challenged by the globalising economy. The rapid transfers of capital and production makes planning difficult for societies and individuals; regional infrastructures and social structures may face rabid changes due to "fly in, fly out" economies of multinational industries; services, such as healthcare and emergency services, may be rendered over or under scaled according to the given economic and demographical situation. To alleviate such problems, in Finland for example, corporations are obligated to carry out *Environmental Impact Assessment* (EIA) including *Social Impact Assessment* (SIA) prior to the initiation of large scale industrial projects. Considering the case of northern Finland and Lapland, EIAs and SIAs have been recently carried out due to the mining projects. However, as Suopajärvi (2013) pointed out, SIAs are often superficial and demands improvement in practices and methodology. According to her, "there is a strong demand for emancipatory knowledge and an emphasis on fair, equal, transparent and participatory processes". Also there is need for qualitative methods and hermeneutic approach, since the quantitative nature of SIAs cannot adequately acknowledge the complexity of local communities, the differences between people and their cultures.

Global politics is an important factor contributing to the physical security of individuals and societies. Arctic regions are politically relative stable, although some alarming developments have emerged. Russia has been increasing its military presence in high arctic, particularly in the Barents Sea. Åtland and Pedersen (2014) noted that the tensions between NATO and Russia have not been settled. For example, Russia considers Svalbard (Spitsbergen) as a security threat since it belongs to Norway which is a member of NATO. The doubts about Russian's geopolitical motives gained new impetus due the Russian occupation in Crimean during the crisis in Ukraine in 2014.

Challenges on mental well-being

The mental well-being refers to psychological state without of mental disorders, consistent identity, self-esteem and the attitude towards one's life and the world in general. Mental well-being is often fundamentally related to the physical and socio-economical well-being. Just as the physical well-being, mental well-being can be observed at the levels of individuals and societies. Certain social structures, practices and traditions, such as norms, do determine the mental well-being of given society. For instance, how indulgent are the norms that determine what is normal and what abnormal, and how minorities are treated within the society (Helman 2000; Mathews & Izqueirdo 2008).

Considering the Arctic in general, as well as the northern Finland, the small rural and pastoral communities have traditionally been relatively self-sufficient. However, the historical assimilation policies throughout the Arctic have diminished the independency of these communities, resulting in acculturation and dependency on socio-economic structures of colonizers (Lehti *et al.* 2009). Such policies have caused acculturative stress often resulting in detrimental consequences regarding one's identity. For instance, if essential elements of the original culture are lost, it may result in with identity loss, alienation and confusion (Harvald & Hansen 2000; Juutilainen *et al.* 2014).

While Arctic communities are remarkably well adapted to the changes in climate and varying weather conditions, the current pace and extent of the changes is challenging the adaptive capability of Arctic (Hovelsrud *et al.* 2012; Rasmussen 2010; Reinert *et al.* 2010). The global changes can't be met with the traditional ways of adaption (see e.g. Reinert *et al.* 2010). The increasing urbanisation, migration and dependency on global economy alongside with the "unavoidable" climate change might inflict individuals, families and communities with the sense of powerlessness (Hovelsrud *et al.* 2012). These changes in social and economic fabric may ultimately increase various mental problems, such as tendency to suicide, domestic violence and addiction to harmful substances (Ford 2012; Lehti *et al.* 2009; Silviken *et al.* 2006).

Challenges on socio-economic well-being

While the physical and mental dimensions are important for well-being, the socio-economic dimension may be the most decisive of the three. Economic fluctuations easily limit the amount of social and economic resources available to prevent and overcome possible disturbances. The lack of resources is constantly challenging the welfare states – the functioning of healthcare, social security and social services. Equal and just healthcare system is an important single factor contributing to the overall well-being. In Finland, the health expenditures have raised approximately by 6 billion euros in 1995–2012 (Matveinen & Knape 2014), and will increase further because of the aging of population (Emelyanova & Rautio 2012). According to Emelyanova and Rautio (2012) Lapland and Kainuu are among the most rapidly aging areas in Barents Euro-Arctic region, with only Norrbotten in

Sweden surpassing them. The share of over 65 year old people is between 20–30% in somewhat half of the northern and eastern Finland (Statistics Finland 2014).

The unpredictability in global economy is further stressing the well-being in Finland. Although it should be acknowledged that merely being a risk, the liberal market economy could be also a possibility for local communities and society. While there are negative examples of the impacts caused by the liberal competition economy, for instance, the shutdown of multiple paper and pulp factories in 2006–2011 and the rundown and divestment of Nokia Corporation, there are also recent success stories of Finnish know-how. This reminds about the probably most valuable asset of Finland in adapting challenges of globalisation, the human capital, which is mostly due to high level and comparably equal educational systems, which has guaranteed success for example in international education assessments, such as in PISA tests. Unsolved issue is although how this high level of human capital can support the equal development in country wide.

The global change also contributes on increased migration and urbanisation. Gaps between regions are expanding. Employment and education possibilities are focusing on large urban centres drawing people from rural areas. Considering emerging migration related challenges, for example, Rafael Reuveny (2007) has suggested that if and when the impacts of the climate change render the conditions too harsh in less developed countries – for example due to the food and water insecurity – people will be forced to migrate to more stable regions. Reuveny estimates that this will also increase the possibility of conflicts, ethnic tensions and competition (Reuveny 2007). In the case of Finland, Reuveny's estimations raise some concerns, since Finland is rather homogenous nation, but anyhow ethnic tensions are already visible (Ervasti 2004).

Facing the challenges of global changes

We have identified several emerging challenges set by the global changes for society and individual well-being. In this chapter we will examine some possibilities to alleviate the emerging risks. The global change related challenges of well-being requires a new emphasis in northern adaptation research. These challenges are a combination of demographic (the aging of population, increasing diseases of affluence), employment (fluctuations in economy, risks in new occupations in arctic), social (continuing and equal security and health-care services) and environmental (degradation, pollution risks in unstable situation) problems.

Population change

The population in Finnish North is aging and this is combined with very post-modern well-being phenomenon, the diseases of affluence (obesity, cardiovascular diseases). Also in general northern populations tend to have poorer health status and healthcare services compared to the people living in south. Low population densities, harsh

climatic conditions and long distances along with sparse and small settlement structure have direct consequences on the effectiveness and costs of healthcare services. In case of emergency (delivery, heart attack, accidents), the only way to get to healthcare services is by helicopter – which is also subjected to increasingly varying weather conditions.

While the demands for adequate and equal healthcare services regarding northern regions are justified, resources to deliver required services are often lacking. One viable solution alleviating this problem may be on contemporary communication and monitoring technology by employing tele-presence of medical professionals in remote places (Hild 2003). For example, Mendez *et al.* (2013) demonstrated how the use of remote presence for health care delivery in a northern Inuit community significantly reduced the need for air transport: it was required only in 40% of the cases that would have been otherwise transported normally. While remote presence is not sufficient in cases of severe seizures and accidents, it helps in assessing the need of transportation in non-urgent cases and could also be utilized in basic healthcare procedures, such as examination of patients and drug prescription. Another possible mean to reduce costs caused by transportation while increasing patient comfort is to apply the methods of self-care taking place at patient's home (Ådahl 2012).

While internet-based technology may alleviate the burdens of remote northern conditions, it also creates ethical questions related on data security and responsibility. Patient data is sensitive and should be protected appropriately. However, contemporary political discourse emphasises the importance of self-care and ailments prevention which are pushing the responsibility regarding health towards the individual via health promotion campaigns. This trend with expanding remote monitoring and self-care applications depends on people's trust in such systems, but also to reliability of new technology in harsh environmental conditions.

Occupational change

Working in Arctic conditions is often difficult and show elevated rates of occupational injuries, main risk factor being cold (Harvald & Hansen 2000). Another factor which may be considered is the continuous light of arctic summer and the prevailing darkness during wintertime which might result for example various sleep deficits (Leger *et al.* 2011). Sleep deprivation is acknowledged occupational risk, comparable to alcohol intoxication (Williamson & Feyer 2000). The stress factors caused by such extreme conditions are an obvious risk regarding occupational safety and well-being. While northern indigenous populations are accustomed to local environmental and climatic conditions, immigrant workers may be seriously affected. Especially in shift-work, such factors could have cumulative adverse effects (Foster & Roenneberg 2008).

Some duties are safety sensitive in respect that they require high vigilance from employees, yet maintaining such alertness in Arctic conditions is challenging. Due to the increasing competition in markets, there is additional stress in work which reduces

chances for sufficient recovery. In such duties it might be reasonable to monitor and asses the condition of employees for example by utilizing non-invasive body area network (BAN) monitoring (see e.g. Jovanov *et al.* 2003) and by determining reliable set of physiological stress-related signals, yet acceptable and not distracting the employee. For instance, such signals may include measuring heart rate, heart rate variability and systolic blood pressure (Vrijkotte *et al.* 2000).

Such monitoring technology bears a series of questions, including ethical issues, and the questions regarding usability, appropriation and reliability of such technologies in arctic environment which needs further research: considering portable devices batteries are vulnerable in cold conditions. Also human physiological signals in cold may be different to those in milder climate, requiring further studying in order to be appropriately applied in such environment. Finally, people may feel reluctant to wear additional and burdensome gear that may impair their mobility or distract attention. Therefore such device should be easy to use and wearable just as normal clothes.

Environmental changes

Finnish North is renown of its clean and unique natural environments. Due to reckless extraction of natural resources or industrial production, pollution has been still mostly local (Sarala 2012). Regardless it should be stressed that Arctic environment is very vulnerable to various kinds of pollution as well as erosion. Also northern people tend to have close relationship towards local nature and it means for them the totality of living environment with embedded cultural and aesthetic meanings (Hartig *et al.* 2011; Kaltenborn 1996; Williams 2001). Alongside with this, clean environment is essential for rural and indigenous livelihoods which often rely on agriculture, hunting, fishing and herding. It is also vital for tourism, the most important economic activity of Finnish North (Nieminen 2012).

Although serene natural environments has been recognized enhancing well-being of humans for a long time, contemporary science is beginning re-value the significance of nature in respect of well-being (see e.g. Hartig *et al.* 2011; Rautio & Tourula 2014). Besides of delivering people with supposedly clean and healthy natural products, berries and game for example, serene natural settings also contribute to the mental and physical well-being of people (Tourula & Rautio 2014). Further, the acknowledging of the connection between the well-being of nature and humans has led already to the development of ecosystem services concept and related approaches (MA 2005).

However it seems obvious that the relationship between environmental and human well-being needs even more attention, research and innovative approaches. For instance, it is long known that certain environmental contaminants accumulate in food chain and finally can end up to humans. Generally, the trends in levels of pollution in Lapland have been decreasing since 2000's (Peltola & Sarala 2012; Anttila 2012; Ylipieti 2012), suggesting that pollution prevention has been efficient

and should be continued in the future. On the other hand, adaptation regarding climate change seems to need revising of approaches: one solution which might serve the adaptation purposes in complex and changing environmental situation could come by developing more holistic approaches where different dimension of well-being could be assessed together. Here the development could be focusing on enhancing for instance ecosystem service approaches, or in more practical level, environmental impact assessments to tangle broader way human-nature related complex well-being issues (Suopajärvi 2013).

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