



Cultural landscapes at risk: Exploring the meaning of place in a sacred valley of Nepal



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ABSTRACT

Mountain peoples are increasingly impacted by environmental changes, including the rapid retreat of glaciers and the growth of dangerous glacial lakes that can breach their natural dams and flood downstream communities. Despite considerable research assessing glacial lake hazards, there have been relatively few attempts to explore the socio-cultural and psychological dimensions of this type of risk. Further, environmental changes become intermeshed with other types of broad-scale changes that have local scale implications in the lived experience of rural mountain communities. This paper examines risk through the lens of those who are directly impacted by such processes. Ethnographic techniques were used, including interviews with community members from the case study in a sacred valley of Nepal that lies downstream from a large and potentially dangerous glacial lake, Tsho Rolpa. The Rolwaling Sherpa community's enduring attachment to their valley and their desire for cultural continuity amidst social, economic, and environmental changes have influenced their interpretations of risk and shaped their responses in complex ways. Findings indicate that threats to their landscape also constitute threats to their self-understanding and their subjective notions of well-being, which are bound up in the meaning of their place. This case study demonstrates the additional insight that can come from contextualizing disaster risk in a way that acknowledges local people's subjective interpretations, priorities, and values. This is expected to be especially critical in cases where sacred or culturally significant landscapes are threatened by global environmental changes.

1. Introduction

Mountain communities are increasingly threatened by climate change-induced fluctuations in Earth's snow- and ice-covered areas (Intergovernmental Panel on Climate Change [IPCC], 2012). These changes have led to the rapid retreat of glaciers, and the subsequent pooling of meltwater that can develop into large glacial lakes. When structural weaknesses around glacial lakes fail, the water can drain out and quickly inundate valleys below. In the Himalayan region, this type of hazardous event is commonly referred to as a glacial lake outburst flood (GLOF). While GLOFs are not a new phenomenon, temperature rise in the sensitive Himalayan region has led to increases in the number and size of glacial lakes, as well as increased likelihood of outbursts (Clague and O'connor, 2014; International Centre for Integrated Mountain Development [ICIMOD], 2011).

Despite a growing body of research on dangerous glacial lakes, there have been relatively few attempts to explore the social, cultural, and

psychological aspects of GLOF risk (Carey et al., 2012; Watanabe et al., 2016). This is especially problematic given that policy and decision making about mountain hazards often reside with governments, organisations, and individuals far removed from the places and people at risk. There are likely to be significant differences in the processes of attribution, perception, and valuation of glaciated landscapes between local people and outside decision makers (Carey, 2007; Gagné et al., 2014). As Williams and Golovnev (2015) warn, 'the Euro-Western climate science-to-policy paradigm oppresses alternative worldviews and paralyzes public agency' in these contexts (p. 207). It follows that efforts to effectively address the risks posed by glacial lakes and other climate change-induced hazards will require insights into the meaning of places at risk and the narratives of risk held by the people at risk, especially in spiritually or symbolically laden landscapes. This is because context matters: that is, people living in different places have divergent views about and experiences of life on earth (Castree et al., 2014).

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The research presented here uses a case study in a sacred valley of Nepal to examine local perspective of GLOF risk, while acknowledging the wider cultural context within which risks are identified and experienced by a community. We begin with an overview of current approaches to disaster risk, arguing that risk is socially constructed through a complex web of interrelated drivers, including those associated to culture and place. Then, we describe the GLOF hazard and the threatened community selected for the case study – the Rolwaling Sherpa community of Nepal. We locate GLOF risk amongst other threats that make the community members feel vulnerable, including broad-scale forces of social and economic change that have led to de-population of this and many other mountain communities in the Himalaya. Attachment to place emerged as relevant to understanding how participants perceived their own vulnerability, especially because of their place-based identity. Results demonstrate how and why socio-cultural and psychological dimensions of place influence who is at risk, what is at risk, and community capacities for responding to risk. We discuss these findings in terms of other relevant studies that have explored people's experiences at the forefront of environmental change, and suggest it is critical to understand societal values, perspectives, and priorities to appropriately assess and respond to threats. The results presented here were gathered during a broader research project exploring the links between culture and vulnerability in Nepal (Sherry, 2017).

2. Literature review

It is widely acknowledged today that disaster risk reduction cannot be achieved without understanding and addressing the underlying drivers and root causes of risk (Gall et al., 2014; *Integrated Research on Disaster Risk*, 2011; United Nations Office for Disaster Risk Reduction (UNISDR), 2015; Zakour and Gillespie, 2013). Disaster risk is now conceptualised as a convolution of vulnerable conditions of people and hazardous conditions of their environment (Cardona, 2003; Wisner et al., 2004). Indeed, influential works since the 1970s have promoted the examination of disaster causation through the rubric of *vulnerability* (e.g. Blaikie et al., 1994; Chambers, 1989; Hewitt, 1983). Vulnerability deals with those characteristics of a person or group and their situation that influence their propensity to suffer loss, as well as their abilities to react or respond to threats (McEntire, 2012; Wisner et al., 2004).

While expanded understanding of vulnerability has yielded some important gains in combating worldwide disaster losses, scholars continue to question why there has been little progress in reducing the impacts of socio-natural disasters, especially in low-income countries (Burton, 2015; Oliver-Smith, 2013). In most instances, it seems that disaster vulnerability continues to be assessed as a set of objective facts or circumstances, especially concerned with exposure and the socio-economic and political dimensions of risk. As a result, many institutional and political disaster risk responses rely on corrective risk management, using interventions that are primarily structural and technological in nature. This approach has appropriated vulnerability as a technocratic and bureaucratic concept, thereby overlooking more deeply rooted social and cultural influences on the construction of risk (Burton, 2015; Oliver-Smith et al., 2016).

It must be recognised that people do not necessarily fail to react appropriately to risks because they are irrational or ignorant. Instead, their choices reflect a complex web of interpersonal, psychological, cultural, and structural characteristics and processes that enable or constrain various risk responses (Eiser et al., 2012; Oliver-Smith et al., 2016). Perceptions of the threats from, causes of, and responsibility for environmental change phenomena are tied to the understandings people have of their relationship to nature (Heyd and Brooks, 2009; Jurt et al., 2015). Research from many mountainous regions of the world suggests that environmental changes like glacial retreat and its associated hazards are perceived by mountain peoples through historical and cultural lenses that may differ from those of scientists and

policy-makers, and that failure to recognise these differences can lead to increased risk and vulnerability (Byg and Salick, 2009; Carey, 2005; Oliver-Smith, 1986; Carey et al., 2014a,b).

People make trade-offs based on their interpretations of risks and benefits, which can include living in familiar, desirable, or meaningful places (Adger et al., 2012; Cannon, 2008). *Attachment to place* refers broadly to the physical and social bonds people develop with places, which are formed through a complex process of meaning-making (Lewicka, 2011; Scannell and Gifford, 2010; Stedman, 2003). For many communities, connections to place cultivate a sense of self, or *identity* (Brown and Perkins, 1992). Environmental surroundings shape people's understanding of who they are as individuals and as members of a group (Adger et al., 2012). Personal and social identities are therefore threatened by environmental events that change those surroundings or force people to move away from them (Allison, 2015; Heyd, 2014).

Social relationships also play a role in and complement the development of attachment to a place (Tartaglia, 2006). *Sense of community* can develop when people feel an emotional connection to their surrounding social group, based on shared history, interests, and concerns (Perkins and Long, 2002). Factors like ancestral ties and belonging, or 'insider' status within a group, can determine the intensity of bonds to the social dimensions of place (Hay, 1998). Place attachment, place identity, and sense of community foster the development of a social group in all of its physical, social, cultural, political, and economic aspects (Lewicka, 2011; Manzo and Perkins, 2006).

Recognising the bonds between people and particular localities can contribute to deeper understanding of the cultural influences on disaster risk because these bonds can influence how risk is socially constructed and responded to (Allison, 2015; Hess et al., 2008; Manzo and Perkins, 2006). For example, attachment to place can be a critical influence on who is exposed to a hazard, including through migration decisions that determine who moves in and out of hazardous areas (Adger et al., 2011). Person-place bonds also have a role in strategies for managing or reducing risk, because attachment phenomena can determine capacities for responding to threats, as well as influence motivations for protecting a particular place (Hess et al., 2008; Lewicka, 2011; Manzo and Perkins, 2006). Thus, more place-based research is needed to enrich discussions of the causes, impacts, and responses to global environmental changes, and to shed light on the cultural influences at work in the construction of disaster vulnerability (Gagné et al., 2014; Oliver-Smith et al., 2016).

3. Context of GLOF risk

GLOF hazards present an appropriate context for disaster risk and climate change researchers seeking to advance understanding of the socio-cultural dimensions of risk because glacial change is directly observable and subject to cultural framings by a variety of actors at various scales (Cruikshank, 2005; Gagné et al., 2014; Orlove et al., 2008). Tsho Rolpa glacial lake in the Dolakha District of North-central Nepal (Image 1) was selected as the case study hazard for this research. As with many glacial change phenomena in Nepal and other mountainous regions, previous efforts to study Tsho Rolpa have been primarily hazard-focused, with few investigations of what risk means more broadly for the people who are threatened.

Evidence suggests that the lake began to form in the 1950's when a number of small supra-glacial ponds on the Trakarding Glacier coalesced into a single body of water (ICIMOD, 2011; Richardson and Reynolds, 2000). One of the most recent assessments estimated the volume of the lake to be 86 million m³, growing by 0.43 m in depth per year (ICIMOD, 2011). Several hazard and exposure-focused risk assessments have identified this as one of the largest and most potentially dangerous glacial lakes in the Himalaya (ICIMOD, 2011; Iturrizaga, 2011; Shrestha and Nakagawa, 2014). An outburst flood from Tsho Rolpa is predicted to impact the area between the lake and up to 100 km downstream, causing destruction to settlements, cultivated

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