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Existential risk as a salient concept for transition studies.

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New concepts for just transitions

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Abstract

Transitions – system changes through natural or sociopolitical forces – have the potential to significantly threaten one’s way of being in the world. In this paper we propose to acknowledge fully this “dark side” of transitions. We posit that transition studies would benefit from cross fertilization with existential risk studies. In order to start exploring such an hybridization, we propose avenues for identifying changes, within human communities’ trajectories, that may threaten their very way of existence. We identify the mourning of immaterial, pangenerational losses as potentially central to such situation of existential threat. We associate these immaterial pangenerational losses to the loss of place, to the loss of ontological security, and to cultural devastation. Finally, we argue that transitions that appear less extreme and dramatic could nevertheless threaten one’s way of being human in the world. As an illustration we use the example of Métabief (France), a ski resort that is currently transitioning to non-snow-based activities.

Introduction

For the past twenty years, a new stream of academic discourse is taking shape in the western scientific world: existential risk studies, aka X-risk studies. This relatively new field focuses on the risks that threaten Humanity’s existence. In this paper, we argue that the concept of existential risk constitutes a salient category for transition studies. Given the definition proposed by Kralik et al. (2006), a *transition* is a forced or chosen change, an inner reorientation, and the disruption of someone’s reality that reshapes the “sense of self.” Such

“transitions” are close to Scheffer’s concept of *critical* transitions in nature and societies: “sharp shifts in systems driven by runaway change toward a contrasting alternative state once a threshold is exceeded” (Scheffer, 2020, p. 105). They are not necessarily positive nor desirable. When a community’s critical values are brutally lost, to such an extent that its way-of-being-human-on-Earth vanishes, it may reveal that an undesirable transition has occurred. In such instances, mobilizing the existential risk discourse could clarify the challenges at hand.

Existential risks in a nutshell

In 2001, Nick Bostrom defined an *existential risk* as a one that is global, catastrophic, associated with potentially terminal events, bringing humanity to extinction or irreversibly impeding its potential (e. g. nuclear world war, deadly pandemic, resource depletion, comet impact, misaligned artificial intelligence, catastrophic global warming...) (Bostrom, 2001; Bostrom & Cirkovic, 2011). The definition of existential risks remains an ongoing subject of debate. For the purpose of this paper, the definition that we privilege is taken from Torres (2019). He recommends, for the specific context of scientific deliberations, the adoption of the definition proposed by Cotton-Barrat and Ord (2015): “An event X is an existential risk if, and only if, X could cause the loss of a large fraction of expected value” (p.3). Torres further recommends that it be made clear that the “value” under consideration may be defined as one sees fit within the context. Finally, a “large fraction” involves loss at a global scale and of a pangenerational nature.

As Torres’ *caveat* indicates, *value* is a relative concept (Morrissey & Oliver-Smith, 2013) which focuses on “personal or societal judgement of what is important and valuable in life” (Adger et al., 2009). Values are socially constructed (Barnett et al. (2016, p. 2)) – the identification of what counts as “value” belongs to, and inform on, the utterer:

Values are constructed through cultural influences and worldviews, narratives that help make sense of places and ways of living, markets and marketing, family and social networks, and people’s lived experiences, relationships with nature, memories and aspirations.

Tschakert et al. (2019) identify 20 values important to people’s lives susceptible to harm, including, non-exhaustively, knowledge, culture and traditions, dignity, identity, human mobility, sense of place, social fabric, sovereignty, and order in the world. In some instances, these harms may be pangenerational and thus potentially perceived as irreversible.

Climate change is already harming important values of many communities around the world (IPCC [H.-O. Pörtner, 2022]). Damages are greater than was assumed previously, and some of these may qualify as pangenerational. In the future, the frequency and magnitude of impacts on both human and natural systems will most probably increase (IPCC [H.-O. Pörtner, 2022]). In this paper we posit that these impacts are of existential nature.

A significant fraction of the existential risk research community (Bostrom & Cirkovic, 2011; Cotton-Barratt & Ord, 2015; Ord, 2020) tend to focus on “sexy” risks such as sudden global catastrophes and extinction-level events (Kuhlemann, 2018). Yet, large fractions of *existing* values are being lost right now at local level, and large fraction of *expected* values will be lost, as consequences of slow-onset, “unsexy” risks associated to environmental degradation. If we were to focus solely on a limited set of existential risks, the field of their studies would present ethical, philosophical and epistemological shortcomings (Schuster and Woods (2021)). One key critic relies on the fact that “this [global existential risk] model regretfully but purposefully ignores the violence and suffering inflicted on *groups of people* in which their existential condition is at stake” (Schuster & Woods, 2021, p. P24). Many local communities have experienced or are currently facing existential-level losses and local terminal situations. Perpetrators of genocides, for instance, actively try to change the human condition by removing some “way of being human on Earth” (ibid, p. 24). This is precisely what a local terminal situation is about: the loss of certain ways of being human on Earth.

The extent to which a sudden and dramatic change in climate patterns can induce a local, societal collapse, remains a fierce debate between scholars, especially in fields such as archeology, history, and paleoclimatology (Dugmore et al., 2012; Middleton, 2012; Orlove, 2005; Weiss & Bradley, 2001). What is clear, however, is that many human communities experience important losses in the context of a changing climate. These can be connected to the material world, to the non-material world, or to both the non-material and the material worlds (Ackerman & Stanton, 2007; Alston et al., 2018; Barnett et al., 2016; Edwards et al., 2009; Hanewinkel et al., 2013; Morrissey & Oliver-Smith, 2013; Preston, 2017; Reguero et al., 2018; Serdeczny et al., 2018; Tschakert et al., 2019). Non material losses, such as place-attachment, knowledge, identity, social relations, are often reduced to psychological harm, which fails to acknowledge the ethical implications of such losses (Preston, 2017).

In the following sections, we will explore the relationships between climate change and local existential losses. We argue that such local terminal situations are better captured through the

gathering of communities' narratives. We shall insist on possible clues that help us to identify those situations in order to better engage into interventions.

Identifying local terminal situations

Listening to people expressing mourning for immaterial, pangenerational, losses

Local terminal situations have both a material dimension, which is the main focus of the risk studies discourse, and an immaterial dimension that we acknowledged earlier. The materialist bias of western science (Kovach, 2017) tends to keep these immaterial dimensions out of sight and thus neglected.

But how can we precisely identify a situation where a community is losing its way of being human in the world? How do we overcome the “invisibility” (Turner et al., 2008) of immaterial losses ? How do we acknowledge them ? Narratives are promising entry points. Generally speaking, narratives are stories:

that include a temporal ordering of events and an effort to make something out of those events: to render, or to signify, the experiences of persons-in-flux in a personally and culturally coherent, plausible manner. (Sandelowski, 1991, p. 162)

It is the way people frame experiences, places, identities, and lives, through a storied form (Josselson, 2011; Moezzi et al., 2017). Narratives inform on how people perceive changes and “assign specific meaning and valuation to social and environmental issues” (Doluisio & Vanderlinden, 2020). Gathering local narratives is a way of giving voice to threatened place-based communities, making the invisible visible, as explained by Turner et al. (2008) : “we are saying: ask the people who were hurt about the nature of their losses” (p.2). First-voice narratives better capture what matters to people, what values and needs are important for a community (Preston, 2017; Tschakert et al., 2019). We argue that, in the context of a local terminal situation, members of communities will mobilize various narratives of loss, evoking a damaged relationship between community and place, a growing sense of ontological insecurity, and the loss of cultural practices indicating a potential cultural devastation.

Furthermore, narratives may be framed as one side of a two-sided coin, the other side being “community.” Indeed, narratives, are also the concrete manifestation of the fabric that allows communities to exist: narratives are the carriers of shared experiences, values, and contexts (de

Fina et al., 2006). This fits Benedict Anderson's concept of "imagined communities," i.e. communities that exist through "imagined" narratives (2020; see also Rommetveit et al., 2013). Human communities exist through the sharing of narratives, which define the very nature of the variety of communities: local communities, for instance, aggregate around narratives of the places they inhabit.

Box 1: Presenting Métabief, our illustrative example

Throughout this paper, we discuss the case of Métabief, a town and ski station located in Jura (France). The case of Métabief is an interesting example of an ongoing, worrying transition that involves a profound change in local narratives and ways of being in the world, but which does not quite close off the possibilities of achieving a desirable future. With this example, we want to show that although some transitions may seem less dramatic than others, they may nonetheless create spaces where a community's way of being in the world is threatened.

Since the 1930's, Métabief and Jura has been deemed for cross-country skiing. Ski-lifts were established after the second world war and have favored the development of alpine skiing. Since then, one of the main local narrative that has prevailed is that Métabief is first and foremost a family and budget-friendly ski resort, the closest ski-station from Paris (Davin, 1967; Douay, 2014). This narrative extends to the whole region : "with its variety of slopes, its altitude and its prices, the Jura is an excellent family ski resort"¹ (Faber, 1971). Snowy winters, with a high quality of snow, has constituted a central components of local narratives, as reported by the local and national press : "A harsh, rigorous winter [...]. For five months the snow covers the land. It is even frequent that it falls during all the months of the year"² (Bole-Richard, 1977). Jura used to receive "heavy snowfall from 1000m upwards" in the 1950's (Balseinte, 1958, p. 142) and has been famous amongst skiers for decades because of "the constant composition of its snow which ensures a good impression of the tracks, thus better guidance of the skis"³ (Tarrago, 1983).

Thus, narratives about snowy winters have thrived for decades, both within the local community and outsiders' representation of the territory ; a "white gold", a tool for the economic development. In the region of Métabief, skiing and winter tourism still represent a significant

¹ « Par la variété de ses pistes, par son altitude, par ses prix, le Jura est par excellence un centre de ski familial. »

² « Un hiver rude, rigoureux [...]. Pendant cinq mois la neige recouvre la terre. Il est même fréquent que celle-ci tombe pendant tous les mois de l'année. »

³ « La composition constante de sa neige qui assure une bonne impression des traces, donc un meilleur guidage des skis. »

part of the revenues and have widely contributed to the development of local infrastructures (Pommier, 2021). Its recent rarefaction has already produced a slight change in narratives. In the 2010's, the station of Métabief praised the quality of its *artificial* snow, described as even better and more resistant than natural snow (France 3, 2017).

But recent climate simulation by ClimateSnow indicates that artificial snow will not be sufficient to compensate for future decrease in snow cover due to climate change. The viability of the station is not guaranteed. In 2020, the station and the municipality have therefore decided to close the alpine ski lifts by 2030-2035, in a hope that they will have enough time to develop new economic activities, initiate a change in local narratives and transform the community's identity. This decision may be an interesting example of a community which has identified an emerging risk for its own existence and has decided to anticipate and bifurcate.

Mourning the loss of a place

As we presented above, we understand *community* as a group of people sharing common narratives and imaginaries. Although we acknowledge the existence of a great diversity of *communities*, not necessarily bonded by attachment to place, we purposefully focus on place-based, or local, communities in this paper.

Climate change is increasingly destabilizing the connection between communities and their place and pose a serious threat to “the values those places embody as a result of being lived in and transformed into sites of human significance” (Nomikos, 2018). Our understanding of place-based communities is therefore close to Jean-François Médard's who defines community as “both a place, people living in that place, the interaction between those people, the feelings that arise from that interaction, the common life they share and the institutions that regulate that life” (as quoted in Jacquier, 2011, p. 39). Community and their components are not fixed, they evolve through time, especially in the long run (Jacquier, 2011). We therefore use the term “community”, but imply “place-based community” all along this article.

Faulkner et al. (2018) emphasize *place-attachment* as the keystone for (place-based) community's resilience, acting as a catalyst for common experience, the “backbone supporting interactions between other individual capacities” (Faulkner et al., 2018, p. 6). Even in extremely hazardous conditions, some communities can decide to voluntarily remain on site in order to preserve their identities, way of life, and being in the world, as shown by some coastal

communities' voluntary immobility (Adger et al., 2009; Farbotko, 2019; Jamero et al., 2017; Pörtner et al., 2022; Simms, 2021).

Arto Haapala defines *place* as “the ‘area’ in which the everyday is realized” (as quoted in Nomikos, 2018, p. 454). The impaired relationship between community members and place has been explored through the concept of *solastalgia*, “the distress experienced when one’s sense of place is under assault due to degrading environmental conditions of a home region” (Simms, 2021, p. 3), a feeling of powerlessness, a loss of familiarity with the place. Displacement, forced migration, or the loss of places can indeed be felt as a “forfeiture” of a certain way of life, and lead to the dislocation of social networks (Simms, 2021). It is not so different from what Pearson et al. (2021) frame as “feeling homesick while still being at home” (p.13). Indeed, the world, as Francisco Varela points out, is something we engage in “by moving, touching, breathing, eating” (as quoted in Escobar, 2020, p. 22), something we can feel. In *Pluriversal Politics*, Arturo Escobar emphasizes the importance of *sentipensar* (feel-think), because communities and human beings are deeply committed *to* and part *of* their environment (Escobar, 2020, p. 22):

For Maturana and Varela, an uninterrupted coincidence exists between our being, our doing, and our knowing; the corollary is that “we confront the problem of understanding how our experience — the praxis of our living — is coupled to a surrounding world which appears filled with regularities that are at every instant the result of our biological and social histories” (1987, 241).

Climate change modifies the environment, i. e. this continuum between a community and its place, disrupting the social-ecological system. When important places with cultural, ontological and spiritual significance such as burial grounds, landscapes, homes, religious buildings, or historical monuments are destroyed, people suffer both from physical impacts (i. e. the material conditions of survival), the “erosion of *self*”, destabilized connection to the *place* (Alston et al., 2018), and the disruption of political subjectivity (Farbotko, 2019). Climate change is a threat to communities' values and relationship with place which creates space for potential loss of meaning at a community scale and, therefore, the disruption of the “foundational building blocks of social coordination” (Morrissey & Oliver-Smith, 2013). As Nomikos (2018) states (p. 457) :

Drastic and unexpected changes can make it too “hard to define the thread of continuity or stability in life” and cause a disruption to place attachment that is both alienating and hard to

recover from. When living in an era characterized by rapid environmental change, the power of place over our lives is no small matter.

Therefore, we consider the disruption of place-attachment as a potential indicator of a local terminal situation at community's scale.

Box 2: Is place attachment in Métabief under threat?

Because skiing is a significant aspect of the local history, the closing of the ski lifts in Métabief will redefine the local community's identity. Métral (2021) explains that “these ski areas have had a profound effect on the territories and their inhabitants. If the transition proves to be a way out for these places, it is also a heartbreak for many” (par. 29). We believe that the process of slow transition that has been decided in Métabief offers possibilities to transform community's narratives of the place. A more dramatic and sudden closing would have potentially harmed the community's sense of place. In that sense, we think that Métabief offers an interesting example of a transition that could act as “a bridge [between two worlds], an improved union that recreates, reinforces, or revives the value of place”, as Métral (2021) defines it (par. 29)

Mourning the loss of one's way of being-in-the-world

Local terminal situations imply a threat to the ontological security of community's members. Ontological security “refers to the confidence that most humans beings have in the continuity of their self-identity and in the constancy of the surrounding social and material environments of action” (Giddens, 1990, p. 92). It is the security of “being” (Dupuis & Thorns, 1998; Farbotko, 2019) and being-in-the-world, the possibility to rely on and trust familiar places, relationships and objects. Ontological *insecurity* is often linked with the loss of the social fabric, and a sense of loss for the people and places that represented that security (Hawkins & Maurer, 2011). As Hawkins and Maurer (2011) note, quoting a resident of New Orleans after hurricane Katrina: “Even when New Orleans is back it will never be back” (p. 150).

Scholars from environmental sociology and queer studies have since then made a critical analysis of the original concept. Its initial definition relies on a form of conservatism (reluctance to change), binarism (we are either ontologically secure or insecure), and it fails to question the political power-structure which determines *whose* identity matters (Banham, 2020; Rosedale, 2015). However, Banham (2020) emphasizes the possibilities this concept offers if it is not limited to self-interests and self-preservation, but also includes the wellbeing of other humans and non-humans beings. Her definition is as followed:

I define ontological security as a subjunctive state of being; an experience emerging at the point of contact with that which symbolizes a reflexive acceptance of the past and an assurance of the future. This acceptance and assurance contribute to emotional experiences of ease, hope, comfort, and confidence. Ontological insecurity is not the opposite or absence of security but rather, the experience of the diminishment (whether through relational, cultural, and/or material processes) of these qualities of acceptance and assurance. This diminishment contributes to emotional experiences of grief, anxiety, and fear. (Banham, 2020, p. 3)

She then establishes a framework to operationalize ontological security and describes how Tasmanian forests help residents framing and materializing time, create a sense of home and familiarity, embody the possibilities of the future, and serve as a way of “locating oneself as human amidst a bigger network” (p. 7) of life, connections and responsibilities. Hence, ontological security is a continuum, and does not simply mean feeling safe. It is the capacity to rely on our experience and knowledge of the past, and the confidence in the possibilities of the future. In that sense, the loss of ontological security can indicate a local terminal situation, especially because ontological security can shape and be shaped by connection to place, as Nomikos (2018) puts (p.459) :

The ordinary aesthetic of everyday life, connected to sense of place and linked to positive emotions, favors stability, ontological security and subjective well-being.

Box 3: Is the ontological security of Métabief’s community members at threat?

If skiing is no longer an option in Métabief, it will threaten specific jobs, skills, and incomes of many inhabitants – thus eroding their ontological security. In a 2006 study, Foltête and Masson (2006) asked a panel of inhabitants of the Haut-Doubs (the region in which Métabief is located) “how can we delimitate the Haut-Doubs?”. They found out that more than 50% of participants (inhabitants from the region) identified the mountains as the main identity factor, followed by gastronomy (~45%), fauna and flora (~38%), and climate (~37%). Two subgroups of narratives coexisted, one specifically linked to the physical aspects of the region, and the other one on human aspects. In the area of Métabief and Pontarlier, the dominant narrative was that “Haut-Doubs is first of all a high land where the winter is harsh and the landscapes are specific” (p. 15). Hence, warmer winter, decrease in snow cover, and change in vegetation patterns question what it *means* to be from Haut-Doubs. We can hypothesize that this transition is impairing the relationship between community and place, a potential driver of ontological insecurity. Had Métabief not decided to initiate a 10 years transition period, the region would have most

probably face tough times in the 2030's and experience a brutal closure of the ski lifts at the end of the decade. Thus, how would inhabitants have secured a “reflexive acceptance of their past” if the present implies a dramatic disconnection from the past ? How could they have kept an “assurance of the future” if the future brings financial losses, uncertainty, grief, and a disruption of their identity ?

“Perhaps the bull of winter will no longer be”: mourning cultural devastation

Cultures are “shared and patterned meanings held by members of social groups” (Thomas et al., 2019), embodied in daily practices which are locally specific. Thomas et al. (2019) tie the “intangible aspects of social life” to the preservation of one’s place. Relocation and displacement act as uprooting processes that can harm cultural way of life:

there may be no equivalents to the territory with important mythic associations, the fishery that supported culturally salient livelihoods, or simply the sense of place that provided an emotional and spiritual foundation for multiple generations. (Thomas et al., 2019, p. 10)

This pangenerational loss of access to significant places illustrates how tangible losses have intangible consequences on cultural way of life. Cultures are mostly anchored in a specific place. A weakened link between the two, because of displacement or dramatic changes in the environment which severs these emotional and spiritual ties, can have “devastating repercussions for individuals and societies” (Adger et al., 2009, p. 349). These ties vary in space and time, and between cultures.

Indigenous cultures are often founded on particular bonds to their land and show a strong sense of place (Farbotko, 2019; Lear, 2006; Morrissey & Oliver-Smith, 2013; Schwarz, 1997; Simms, 2021; Zickgraf, 2021). Schwarz (1997) vividly depicts how the Navajo people experienced the Land Settlement Act of 1974 as a disaster and a “breach of personhood” (p. 44). In the Navajo culture, parents bury the umbilical cord of their newborn in specific places – thus symbolically and spiritually anchoring their children to the land. This “anchoring cord” constitutes an indissociable part of the definition of being human, as a member of the tribe explains: “Are you trying to kill us? Moving away from here would be dying a slow death” (Kammer (1980) as quoted in (Schwarz, 1997, p. 50)). In the context of climate change, Tschakert et al. (2019) comes to the same conclusion for the Tikigaḡmiut (Inupiat) people, an arctic Indigenous community losing its land to sea level rise and erosion. In Siberia, Susan Crate analyses how climate change affects the Sakha people’s culture. Permafrost melting, for example, impacts

alaas, symbolic places that have both a material and cosmological importance (Crate, 2021). She also quotes Jyl Oghuha, a Sakha elder worried about warmer winters:

The bull of winter is a legendary Sakha creature whose presence explains the turning from the frigid winter to the warming spring. The legend tells that the bull of winter, who keeps the cold in winter, loses his first horn at the end of January as the cold begins to let go to warmth; then his second horn melts off at the end of February, and finally, by the end of March, he loses his head, as spring is sure to have arrived. It seems that now with the warming, perhaps the bull of winter will no longer be. (Crate, 2008, as quoted by Pearson et al., 2021)

This loss of “cultural keystone places” (Cuerrier et al., 2015) threatens cultural identities, wellbeing, and can generate a form of cultural trauma, i. e. the disruption of “the cultural basis of social order” (Brulle & Norgaard, 2019). Although place constitutes a critical aspect of cultural identities, the loss of other important symbols (objects, practices, knowledge, people) may also endanger the “cultural integrity of a community” (Morrissey & Oliver-Smith, 2013). In *Radical Hope: Ethics in the face of cultural devastation*, Lear (2006) describes how the disappearance of buffalos and the end of the traditional warrior practice of counting-coup contributed to the collapse of what it meant to be a Crow in the late 19th century. When the US government forbade warfare and that hunting was no longer possible, Crow people experienced a loss of meaning. More than a cultural trauma, Lear qualifies this process as cultural *devastation*. He quotes a grand-mother: “I’m living a life I don’t understand” (p. 62). Because a culture cannot conceive its own devastation, it also lacks the concepts to fully understand new worlds, where being the best individual in one’s culture – in the Crow way, being an outstanding warrior – does not mean being able to efficiently confront the challenges of “a radically new future”(Lear, 2006, p. 64). What Lear describes can be linked to what Brulle and Norgaard (2019) mean when they analyze how climate change, by disrupting communities’ routine, narratives, social relations and habitus, creates a sense of cultural trauma in “WEIRD” (Western Educated Industrialized Rich and Democratic) societies.

Box 4: Do cultural changes in Métabief qualify as manifestations of cultural devastation?

The current changes are most probably not sufficient to provoke a *cultural devastation* in Métabief such as the one that have occurred for many Indigenous people and other communities. Skiing is an important part of the local community’s culture, but it is not the sole. Whereas being an outstanding Crow meant being the best warrior, being an outstanding inhabitant of Métabief does not necessarily mean being the best alpine skier. Members of the

community will presumably not face a situation in which they can no longer understand the world they inhabit. Decrease in snow cover and change in vegetation will be progressive and will not threaten, for example, the existence of the mountains. The important cultural practice of skiing and the narratives of a “white gold” will simply evolve into something different : a new relationship with the mountain and the landscape.

Conclusion. Radical transition and transformative adaptation

Important and irreplaceable values vary amongst individuals, communities, cultures and social-ecological systems. Narratives connected to ontological security, solastalgia, communities attachment to places, cultural keystone places, cultural trauma and devastation, constitute discursive clues, in the form of mourning, to potentially uncover local terminal situations and existential risks. A community’s existence is at risk when it faces a threat over its key values, its crucial bonding to a place, and when its members are threatened in their unique way of *being human in the world*. Communities can face local, terminal situations, which implies that there is no prospect of recovery and no possibility to adapt to dramatic changes, resulting in existential-level losses. In that sense, climate change may constitute a new, critical pressure on communities and social-ecological systems that may produce local existential risks. Thus, existential risks and local terminal situation constitute interesting categories for transition studies to explore.

Nonetheless, we can make the hypothesis that existential risks and local terminal situations do not always coexist. Other radical and transformative pathways could lead to locally desirable outcomes and reinforce the resilience of communities. Facing cultural devastation, the Crow people ended-up reinventing what it meant to be a Crow. They did so through traditional ways of understanding the world – dreams and myths. It did not attenuate the losses and harms that their culture experienced, but it showed that transformation can occur from within and redefine a community’s or a culture’s way of being human. This is what Lear (2006) calls “radical hope”.

Another, rather less dramatic example that we used in this article is the city of Métabief, in France. The decision to close the ski lifts by 2035 constitutes a radical transition for the territory and an attempt to transform its identity. It is possible that this decision to opt for transformative adaptation will give enough time for the community to grieve and recreate local narratives, cultural practices, and sense-of-place. Rather than waiting for fifteen years, and potentially facing a terminal situation – the brutal closing of the ski station, job losses, the sudden

disruption of local identity – the community might be able to mitigate the existential risk through a transition toward a more desirable outcome.

Finally, we may claim that research about existential risks would benefit from reflections about which *apocalypse* matters, for whom, and who should be given a voice? Who has the capacity to leave a *trace* about their existence and their losses? “Roughly speaking, it can be said that victors and elites tend to leave more traces than defeated and dominated groups”, writes Bernardot (2011, p. 5). If cultural trauma is constructed and institutionalized through a long social process that includes the appropriation of trauma narratives by the media (Alexander, 2004), there is a risk that the devastation experienced by marginalized communities and dominated groups remains unseen, invisible to a larger audience such as the scientific community. Following the same logic, dominant groups can establish narratives that do not fit the reality of the lived experience of communities facing terminal situations. We must be vigilant to the instrumentalization of the *trace*, as described by Foucault, which implies the “dispossession of the narrative agentivity of the scriptors” (Rouge, 2015, p. 58). Identifying existential risks and local terminal situations might simply be “a matter of letting people speak and make them speak” (ibid. p 59) and accompany the narratives with silence.

- Ackerman, F., & Stanton, E. A. (2007). The cost of climate change: what we'll pay if global warming continues unchecked. *The cost of climate change: what we'll pay if global warming continues unchecked*.
- Adger, W. N., Dessai, S., Goulden, M., Hulme, M., Lorenzoni, I., Nelson, D. R., Naess, L. O., Wolf, J., & Wreford, A. (2009). Are there social limits to adaptation to climate change? *Climatic Change*, 93(3), 335-354.
- Alexander, J. C. (2004). Toward a Theory. *Cultural trauma and collective identity*, 1.
- Alston, M., Hargreaves, D., & Hazeleger, T. (2018). Postdisaster social work: Reflections on the nature of place and loss. *Australian Social Work*, 71(4), 405-416.
- Anderson, B. (2020). Imagined communities: reflections on the origin and spread of nationalism. In *The new social theory reader* (pp. 282-288). Routledge.
- Balseinte, R. (1958). Les stations de sports d'hiver en France. *Revue de Géographie Alpine*, 129-180. https://www.persee.fr/doc/rga_0035-1121_1958_num_46_1_1819
- Banham, R. (2020). Emotion, vulnerability, ontology: operationalising 'ontological security' for qualitative environmental sociology. *Environmental Sociology*, 6(2), 132-142.
- Barnett, J., Tschakert, P., Head, L., & Adger, W. N. (2016). A science of loss. *Nature Climate Change*, 6(11), 976-978. <https://doi.org/10.1038/nclimate3140>
- Bernardot, M. (2011). À la recherche des sans-trace: cultures, espaces et citoyenneté. *L'Homme trace: perspectives anthropologiques des traces contemporaines*, Paris, CNRS Éditions, 331-347.
- Bole-Richard, M. (1977). Le massif jurassien : les gens du haut. *Le Monde*. https://www.lemonde.fr/archives/article/1977/04/23/le-massif-jurassien-les-gens-du-haut_2859253_1819218.html
- Bostrom, N. (2001). Analyzing human extinction scenarios and related hazards.
- Bostrom, N., & Cirkovic, M. M. (2011). *Global catastrophic risks*. Oxford University Press.
- Brulle, R. J., & Norgaard, K. M. (2019). Avoiding cultural trauma: Climate change and social inertia. *Environmental Politics*.
- Cotton-Barratt, O., & Ord, T. (2015). Existential risk and existential hope: definitions. *Future of Humanity Institute: Technical Report*, 1(2015), 78.
- Crate, S. A. (2021). Sakha and Alaas: Place Attachment and Cultural Identity in a Time of Climate Change. *Anthropology and Humanism*.
- Cuerrier, A., Turner, N. J., Gomes, T. C., Garibaldi, A., & Downing, A. (2015). Cultural Keystone Places: Conservation and Restoration in Cultural Landscapes. *Journal of Ethnobiology*, 35(3), 427-448, 422. <https://doi.org/10.2993/0278-0771-35.3.427>
- Davin, M. (1967). *La station de sports d'hiver de Métabief*. INA. <https://www.ina.fr/ina-eclairer-actu/video/lxf04006730/la-station-de-sports-d-hiver-de-metabief>
- de Fina, A., Schiffrin, D., & Bamberg, M. (2006). *Discourse and identity* [doi:10.1017/CBO9780511584459]. Cambridge University Press. <https://doi.org/10.1017/CBO9780511584459>
- Doliosio, N., & Vanderlinden, J.-P. (2020). The perception of permafrost thaw in the Sakha Republic (Russia): Narratives, culture and risk in the face of climate change. *Polar Science*, 26, 100589. <https://doi.org/https://doi.org/10.1016/j.polar.2020.100589>
- Douay, A. (2014). *Grand Direct à Métabief : les activités des stations franc-comtoises*. <https://www.youtube.com/watch?v=nE-Z46sYhMQ>
- Dugmore, A. J., McGovern, T. H., Vésteinsson, O., Arneborg, J., Streeter, R., & Keller, C. (2012). Cultural adaptation, compounding vulnerabilities and conjunctures in Norse Greenland. *Proceedings of the National Academy of Sciences of the United States of America*, 109(10), 3658-3663. <https://doi.org/10.1073/pnas.1115292109>
- Dupuis, A., & Thorns, D. C. (1998). Home, home ownership and the search for ontological security. *The sociological review*, 46(1), 24-47.

- Edwards, B., Gray, M., & Hunter, B. (2009). *A Sunburnt Country: The Economic and Financial Impact of Drought on Rural and Regional Families in Australia in an Era of Climate Change* (Vol. 12). Curtin University of Technology. <https://doi.org/10.3316/ielapa.929928050111615>
- Escobar, A. (2020). *Pluriversal politics: The real and the possible*. Duke University Press.
- Faber, P. (1971). L'HIVER DANS LES VOSGES ET LE JURA : des hôteliers avec leur rouleau à peindre. *Le Monde*. https://www.lemonde.fr/archives/article/1971/11/13/l-hiver-dans-les-vosges-et-le-jura-jura-des-hoteliers-avec-leur-rouleau-a-peindre_3062278_1819218.html
- Farbotko, C. (2019). Climate change displacement: Towards ontological security. *Dealing with climate change on small islands: Towards effective and sustainable adaptation*, 251-266.
- Faulkner, L., Brown, K., & Quinn, T. (2018). Analyzing community resilience as an emergent property of dynamic social-ecological systems. *Ecology and Society*, 23(1), Article 24. <https://doi.org/10.5751/ES-09784-230124>
- Foltête, J.-C., & Masson, F. (2006). Délimiter le Haut-Doubs : entre représentations mentales et limites physiques. *Images de Franche-Comté*(33), 14-17. <https://hal.archives-ouvertes.fr/hal-00756167>
- France 3, U. r. (2017). Haut-Doubs - La station de Métabief tente de sauver la neige. *Bourgogne-Franche-Comté France 3*.
- Giddens, A. (1990). *The Consequences of Modernity* (P. Press, Ed.).
- Hanewinkel, M., Cullmann, D. A., Schelhaas, M.-J., Nabuurs, G.-J., & Zimmermann, N. E. (2013). Climate change may cause severe loss in the economic value of European forest land. *Nature Climate Change*, 3(3), 203-207. <https://doi.org/10.1038/nclimate1687>
- Hawkins, R. L., & Maurer, K. (2011). 'You fix my community, you have fixed my life': the disruption and rebuilding of ontological security in New Orleans. *Disasters*, 35(1), 143-159.
- IPCC [H.-O. Pörtner, D. C. R., E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Lössche, V. Möller, A. Okem (eds.). (2022). Summary for Policymakers. Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. *Cambridge University Press*. In Press.
- Jacquier, C. (2011). Qu'est-ce qu'une communauté? En quoi cette notion peut-elle être utile aujourd'hui? *Vie sociale*(2), 33-48.
- Jamero, L., Onuki, M., Esteban, M., Billones-Sensano, X. K., Tan, N., Nellas, A., Takagi, H., Thao, N. D., & Valenzuela, V. P. (2017). Small-island communities in the Philippines prefer local measures to relocation in response to sea-level rise. *Nature Climate Change*, 7(8), 581-586.
- Josselson, R. (2011). Narrative research: Constructing, deconstructing, and reconstructing story. *Five ways of doing qualitative analysis: Phenomenological psychology, grounded theory, discourse analysis, narrative research, and intuitive inquiry*, 224-242.
- Kammer, J. (1980). *The second long walk: The Navajo-Hopi land dispute*. Albuquerque: University of New Mexico Press.
- Kovach, M. (2017). Doing indigenous methodologies. *The SAGE handbook of qualitative research*, 383-406.
- Kralik, D., Visentin, K., & van Loon, A. (2006). Transition: a literature review. *J Adv Nurs*, 55(3), 320-329. <https://doi.org/10.1111/j.1365-2648.2006.03899.x>
- Kuhlemann, K. (2018). Complexity, creeping normalcy and conceit: sexy and unsexy catastrophic risks. *Foresight*.
- Lear, J. (2006). *Radical hope: Ethics in the face of cultural devastation*. Harvard University Press.
- Métral, P.-A. (2021). Les trajectoires de reconversion post-touristiques des stations de ski fermées françaises. *Géocarrefour*, 95(95/2).
- Middleton, G. D. (2012). Nothing lasts forever: Environmental discourses on the collapse of past societies. *Journal of Archaeological Research*, 20(3), 257-307.
- Moezzi, M., Janda, K. B., & Rotmann, S. (2017). Using stories, narratives, and storytelling in energy and climate change research. *Energy Research & Social Science*, 31, 1-10.

- Morrissey, J., & Oliver-Smith, A. (2013). Perspectives on non-economic loss and damage: understanding values at risk from climate change. *Loss and damage in vulnerable countries initiative report*.
- Nomikos, A. (2018). Place matters. *The Journal of Aesthetics and Art Criticism*, 76(4), 453-462.
- Ord, T. (2020). *The precipice: Existential risk and the future of humanity*. Hachette Books.
- Orlove, B. (2005). Human adaptation to climate change: a review of three historical cases and some general perspectives. *Environmental Science & Policy*, 8, 589-600.
- Pearson, J., Jackson, G., & McNamara, K. E. (2021). Climate-driven losses to Indigenous and local knowledge and cultural heritage. *The Anthropocene Review*, 20530196211005482.
- Pommier, R. (2021). Réchauffement climatique : fin du ski pour la moyenne montagne en 2030 ? Le cas d'école de Métabief
- Interview d'Olivier Erard, le directeur du Syndicat Mixte du Mont d'Or. *Tourmag.com*.
https://www.tourmag.com/Rechauffement-climatique-fin-du-ski-pour-la-moyenne-montagne-en-2030-Le-cas-d-ecole-de-Metabief_a108268.html
- Pörtner, H. O., Roberts, D. C., Adams, H., Adler, C., Aldunce, P., Ali, E., Begum, R. A., Betts, R., Kerr, R. B., & Biesbroek, R. (2022). Climate change 2022: impacts, adaptation and vulnerability.
- Preston, C. J. (2017). Challenges and opportunities for understanding non-economic loss and damage. *Ethics, Policy & Environment*, 20(2), 143-155.
- Reguero, B. G., Beck, M. W., Bresch, D. N., Calil, J., & Meliane, I. (2018). Comparing the cost effectiveness of nature-based and coastal adaptation: A case study from the Gulf Coast of the United States. *PLoS One*, 13(4), e0192132.
- Rommetveit, K., Gunnarsdóttir, K., Jepsen, K. S., Bertelsson, M., Verax, F., & Strand, R. (2013). The TECHNOLIFE project: an experimental approach to new ethical frameworks for emerging science and technology. *International Journal of Sustainable Development*, 16(1-2), 23-45.
- Rossdale, C. (2015). Enclosing critique: the limits of ontological security. *International political sociology*, 9(4), 369-386.
- Rouge, R. (2015). Foucault et les politiques du récit: les traces de l'infâme. *Encyclo. Revue de l'école doctorale ED 382*(7).
- Sandelowski, M. (1991). Telling stories: Narrative approaches in qualitative research. *Image: the journal of nursing scholarship*, 23(3), 161-166.
- Scheffer, M. (2020). *Critical transitions in nature and society*. Princeton University Press.
- Schuster, J., & Woods, D. (2021). *Calamity Theory: Three Critiques of Existential Risk*. U of Minnesota Press.
- Schwarz, M. T. (1997). Unraveling the anchoring cord: Navajo relocation, 1974 to 1996. *American anthropologist*, 99(1), 43-55.
- Serdeczny, O. M., Bauer, S., & Huq, S. (2018). Non-economic losses from climate change: opportunities for policy-oriented research. *Climate and Development*, 10(2), 97-101.
- Simms, J. (2021). Solastalgic Landscapes: Prospects of Relocation in Coastal Louisiana. *Frontiers in Environmental Science*, 9. <https://doi.org/10.3389/fenvs.2021.578724>
- Tarrago, L. (1983). Ski de fond : le Jura à l'heure du T.G.V. *Le Monde*.
https://www.lemonde.fr/archives/article/1983/11/26/ski-de-fond-le-jura-a-l-heure-du-t-g-v_2846682_1819218.html
- Thomas, K., Hardy, R. D., Lazrus, H., Mendez, M., Orlove, B., Rivera-Collazo, I., Roberts, J. T., Rockman, M., Warner, B. P., & Winthrop, R. (2019). Explaining differential vulnerability to climate change: A social science review. *WIREs Climate Change*, 10(2), e565.
<https://doi.org/https://doi.org/10.1002/wcc.565>
- Torres, P. (2019). Existential risks: a philosophical analysis. *Inquiry*, 1-26.
- Tschakert, P., Ellis, N. R., Anderson, C., Kelly, A., & Obeng, J. (2019). One thousand ways to experience loss: A systematic analysis of climate-related intangible harm from around the world. *Global Environmental Change*, 55, 58-72.

- Turner, N. J., Gregory, R., Brooks, C., Failing, L., & Satterfield, T. (2008). From invisibility to transparency: identifying the implications. *Ecology and Society*, 13(2).
- Weiss, H., & Bradley, R. S. (2001). What Drives Societal Collapse? *Science*, 291(5504), 609-610.
<https://doi.org/doi:10.1126/science.1058775>
- Zickgraf, C. (2021). Theorizing (im) mobility in the face of environmental change. *Regional Environmental Change*, 21(4), 1-11.