Unearthing Fresh Perspectives? Situating Mining-Induced Displacement and Resettlement (MIDR) in the Cryospheric Multiverse of the Cosmolegal

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Abstract

The cosmolegal proposal is an application of posthumanist theory to both Outer Space and the Arctic. Based "on the hypothesis of profound interrelatedness in the Earth system" (Cirkovic, 2021), it has the potential to add a contextual dimension to the study of Mining-Induced Displacement and Resettlement (MIDR). In both the Third Pole and the Arctic, in which mining and MIDR disrupt human-cryosphere interrelatedness, recognizing the cryosphere's agency may enable a better understanding of this relation. However, this touches upon the question of reconciling posthumanism with the study of human rights, for instance in the context of Social Licences to Operate (SLOs) (Burger & Zaehringer, 2023).

Introduction: Connecting Poles and Peoples

"Mining is both a human and an environmental catastrophe," asserts Dorji Wangdi, leader of the opposition in the National Assembly of Bhutan. Mining causes air pollution, water contamination, damage to homes and crops, as well as infrastructure and road damage (Gyelmo, 2021). In this context, local populations are concerned about the impact of mining on their future and that of their children. These concerns are not limited to Bhutan. Throughout the whole Third Pole, also referred to as the Hindu Kush-Karakoram-Himalayan system (HKKH),[1] human migration is increasing as a result of mining activities. This phenomenon is known as Mining-Induced Displacement and Resettlement (MIDR), which denotes "the involuntary movement of affected people from their original abode and/or socioeconomic activities" [*displacement*], accompanied by "the extensive process of planning and implementing the relocation of people, households and communities" [*resettlement*] (Wilson, 2019).

[1] *For a map, see:* The Third Pole (2012). About. https://www.thethirdpole.net/en/about/.

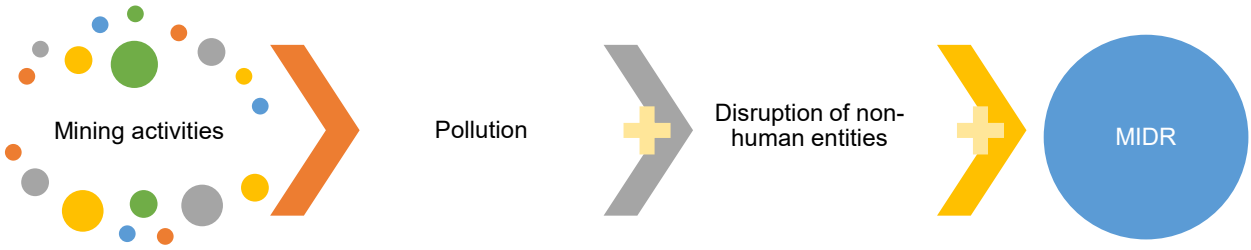

Fig. 3: Mining activities result in pollution, leading to the disturbance of non-human entities, ultimately causing MIDR.

MIDR also extends beyond the Third Pole. For instance, it is observable in the Swedish town of Kiruna, or in Greenland (cf. Hansen et al., 2016). While the scale of MIDR in the Arctic is relatively small, in the Third Pole it is unquestionably large: "As pointed out by Walter Fernandes, in India alone, mining has led to the displacement of more than 1,5 million people over the last fifty years" (Terminski, 2012). However, "even small projects carry risks of major social impacts (…), and have the potential to severely affect the way of life of local indigenous peoples" (Hansen et al., 2016). E.g., in Kiruna, "the relocated railway already cuts through reindeer pasture land", endangering Sámi livelihoods and culture (Szpak, 2019). Thus, both mining activities and their consequence, MIDR, affect Indigenous peoples negatively.

Mining also impacts these regions in their quality of cryospheres. Such an impact, in turn, causes MIDR.

The Cryosphere, the Climate System, and Mining

"Cryosphere", originating from Ancient Greek "κρύος" (*krúos*) for "icy cold, chill, frost," is polysemic, terming both "the part of the earth's surface characterized by the presence of frozen water" and "a region that is part of the earth's cryosphere" (Merriam-Webster). Therefore, the Third Pole and the Arctic are concomitantly *cryospheres* and part of *the* cryosphere. It includes seasonal snow cover, sea ice, permafrost, ice sheets, river and lake ice, mountain glaciers, and small ice caps (Huybrechts, 2009). Notable milestones in cryosphere research include its proposal as the fifth Earth sphere in 1972, accelerated studies since the early 21st century, and the establishment of pivotal initiatives such as the World Climate Research Programme's 'Climate and Cryosphere' (CliC) plans in 2000 (Qin et al., 2018).

Several studies show the sensitivity of the mountain cryosphere (Knight & Harrison, 2022). For instance, Tibetan Plateau glaciers are depleting "faster than

anywhere else on earth" (Palmo, 2019). In 2008, 82% of these glaciers had already receded, with almost 10% of the regional permafrost waned (Qiu, 2008).

Although climate change is a primary factor, mining activities are also contributing to this deterioration. E.g., in China, mining activities have led to substantial glacier retreat (Europe Asia Foundation, 2022). Besides, mining-induced pollution contributes to climate change, and therefore to cryosphere disruption, initiating a perilous cycle. For instance, the melting of glaciers contributes to sea level rise (Rush, 2019).

A Cosmolegal Methodology for MIDR?

This section discusses the cosmolegal proposal's relevance as a "research methodology" (Ulmer, 2017) to explore MIDR in the cryosphere.

There is a growing call in International Relations (IR) to consider non-humans. E.g., the Planet Politics manifesto declares that State-centric IR "is failing the reality of the planet" (Burke et al., 2016). However, there is an unresolved debate surrounding "human rights in a posthuman world" (Baxi, 2008). The query "What would human rights with the posthuman become?" (Godin, 2018) still holds relevance.

Indeed, at first glance, posthumanist approaches seem incompatible with MIDR. Posthumanism is often synonymous with anti-anthropocentrism, as it "questions a world order where humans are at the top" (*Hanken*, 2021). The cosmolegal proposal, an application of posthumanism to space law, suggests that space law's anthropocentrism is failing the reality of the cosmos. It argues "for a move beyond the centrality, for law, of the human subject that acts upon the world (cosmos), as its object" (Cirkovic, 2021). Accordingly, it advocates a paradigm shift in governance and legal frameworks, recognising the agency and unpredictability of non-humans, both cosmic and Arctic. The study of MIDR, as a human rights issue (Terminski, 2012), cannot exclude humans. Therefore, there seems to be an incompatibility.

However, it can be argued that the cosmolegal englobes humans—albeit without mentioning their *rights*. Both outer space and Arctic pollution "have the capacity to affect all planetary life" (Cirkovic, 2020)—thereby including humans. The objective is not to exclude humans but to "recognise and incorporate non-human agency in international law", with a significant 'non-human agent' being the *cryosphere*.

The cosmolegal proposal recognises the cryospheric nature of the Arctic and the impact of gases such as methane (CH_4) and other GHGs released due to the thawing of the permafrost, which consequently "accelerate future warming". As for agency, Cirkovic (2020) clarifies that the

agency of entities such as GHGs lies "in the manner in which they can affect other entities", rather than their (hypothetical) intent.

In this context, Cirkovic argues that the "current dominant conceptualization of law" adopts a deterministic stance towards the notion that "humanity has an endless capacity to adapt and thrive through scientific and technological inventions, even in the context of environmental degradation". Cirkovic contests this developmentalist outlook by promoting the unpredictability of outcomes in "extreme spaces, which are not inherently friendly to human life". The recognition of this indeterminacy by the cosmolegal aligns with the wider global phenomenon of 'un-ness' discussed by Aradau (2014).

Towards a Cosmolegal Methodology?

Following Ferrando's (2014) statement "towards a posthumanist methodology," Ulmer (2017) focuses on "posthumanism as research methodology" in education sciences. This study serves as inspiration for the following inquiry: Can the cosmolegal proposal serve as a methodology that can adequately assess mining and MIDR in the cryosphere? Burger (2023) contends that sustainable mining requires context-specific dimensions. To make progress towards this goal, it is crucial to consider both the intricate interconnectedness of Earth's environments and the relationship between humans and the cryosphere. This brings us to the question of how the issue of MIDR fits into this context as a matter of human rights.

MIDR as a Human Rights Crisis in a More-than-Human Context

Mining in the Arctic is an integral part of the region's economic landscape (Hossain & Roncero, 2023), as it is in the Third Pole. Infrastructure development is intricately linked to industrial activities like mining, including both direct and indirect infrastructure, e.g., roads, railways, and telecommunications. However, balancing both social and environmental sustainability with development is a critical concern.

The human and environmental effects are considerably interrelated in MIDR contexts. For instance, in Greenland, land acquisition that triggers MIDR might potentially cause human rights violations alongside social and environmental impacts. Besides, these environmental impacts "have consequent major impacts on people through their use of ecosystem services" (Hansen et al., 2016).

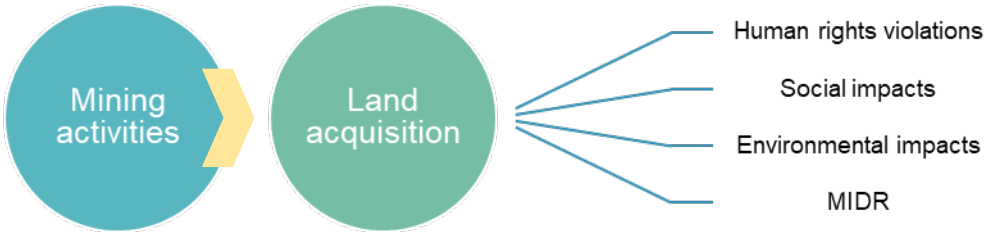

Fig. 2: Land acquisition triggering MIDR might cause human rights violations alongside social and environmental impacts.

More specifically, Su et al. (2019) highlight the importance of *cryospheric services* for human well-being. Nevertheless, the MIDR scholarship seems to lack proper consideration of the cryosphere. Additionally, the legal literature on protecting the Third Pole only briefly touches on the subject, even though Arctic governance is highlighted as a potential source of inspiration for the Third Pole, e.g., due to the regions' similarities in terms of hydrological geography (Marsden, 2016a; Koivurova et al., 2015). Besides, both the Arctic and the Third Pole are home to Indigenous populations who are affected by mining activities leading to MIDR. As highlighted by Downing already in 2002, MIDR poses "major risks to societal sustainability", the severity of which was acknowledged by the World Bank Group's policy on involuntary resettlement (Operational Policy 4.12, approved 23 October 2001):

"[…] involuntary resettlement under development projects, if unmitigated, often gives rise to severe economic, social and environmental risks[:] people face impoverishment […]; kin groups are dispersed; and cultural identity, traditional authority, and the potential for mutual help are diminished or lost."

MIDR is more specifically an Indigenous rights issue leading to a positive obligation from States. Article 8(2)(b) of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), adopted in 2007, affirms:

> "States shall provide effective mechanisms for prevention of, and redress for [any] action which has the aim or effect of dispossessing [Indigenous peoples and individuals] of their lands, territories or resources".

Article 8(2)(c) affirms the State's obligation to provide such mechanisms for "Any form of forced population transfer which has the aim or effect of violating or undermining any of their rights". Moreover, Article 10 reaffirms the principle of "free, prior and informed consent" (FPIC) of indigenous peoples and the compulsoriness of an "agreement on just and fair compensation" for removal from land.

However, Bangladesh, Bhutan, and Russia abstained from the vote leading to the UNDRIP's adoption; Canada and the U.S.A. initially voted against; and India offered a reservation, guided by the assumption that since "all Indians are indigenous", "any reference" to Indigenous rights such as self-governance is void (SPRF, 2021).

In the MIDR context, *before* MIDR, FPIC is seldom fulfilled; and *after*, compensation is ineffective, notably for "erratic water supply and increased food insecurity" (Prakash, 2022) caused by changes to the water cycle. Can the UNDRIP enable to hold mining companies and States accountable therefor?

Echoing a cosmolegal argument, this article argues that current governance "precedes an understanding" (Cirkovic, 2020) of the cryosphere, while arguing, as per Biermann's quote (2021), that we must not "throw the baby out with the bathwater"—that is, not discard humanity when critiquing humanism. Posthumanism signifies exploring beyond the focus on human beings that is embedded in humanism. Putting a bigger emphasis on the cryosphere as an *agent*, at least one *equal* to humans, has potential to enable a bigger emphasis on matters of *relationality*, thereby benefiting both humans and non-humans.

Therefore, the cosmolegal proposal could serve as a theoretical framework to study the disruption in human-cryosphere relations in a MIDR context. Could it, however, fulfil concrete research gaps such as the need to conduct context-specific case studies of Social Licences to Operate (SLOs) (Burger, 2023)?

Social Licenses to Operate (SLOs)

Burger & Zaehringer (2023) discuss SLOs in the mining context, stressing the need for context-specific case studies. SLOs are described as unwritten agreements between companies and communities for social acceptance of a project. While some argue that SLOs should be legally binding, "the main goal should be to study the conditions under which decentralization and participation can facilitate democratic control over natural resources" (Burger & Zaehringer, 2023, relying on Costanza, 2016). Democratic resource control, a human rights issue, is essential to avoid MIDR or mitigate its effects. Therefore, studying SLOs is relevant to investigate cosmolegality's suitability to studying MIDR.

Conclusion: Challenges and Implications

Adopting a posthumanist stance means reflecting on "what it means to do research in an epoch in which humans are a geological force with planetary impact" (Ulmer, 2017). This article explores the links between MIDR, humans, and a 'non-

human' central in both the Third Pole and the Arctic: the cryosphere.

Posthumanism is pertinent in studying the link between humans and their environment, including in the context of MIDR in cryospheric environments. A comprehensive and holistic approach is needed to comprehend the intricate relationship between humans, the cryosphere, and mining operations. Thus, this article considers the cosmolegal proposal as a potentially suitable theoretical framework for studying the disruption of human-cryosphere relations. The present article suggests that the proposal's potential as a MIDR research methodology can be tested through case studies of mining-related SLOs (cf. Burger, 2023) both in the Arctic and in the Third Pole, grounded in a cosmolegal theoretical basis.

Other research areas could include assessing the potential influence of cosmolegality on policymaking and governance. There is a need to advocate *informedly* for the integration of posthumanist principles in mining operations, promoting a comprehensive and sustainable approach to mitigating mining-related effects such as MIDR, and involving Indigenous communities in decision-making processes in an innovative way—especially when the UN's usefulness is being debated (*Courrier international*, 2023).

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