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## **Cryopreserving the present? The climate crisis and the emergence of a politics of suspension**

### **Krioprezerwacja teraźniejszości? Kryzys klimatyczny i powstanie polityki zawieszenia**

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#### **ABSTRACT**

Scholars analyzing contemporary technologies of freezing have recently argued that “cryopolitics” represents an important extension of the classical concept of biopolitics as it operates by the principle to “make live and not let die” (Friedrich 2017; Radin and Kowal 2017). It extends temporal horizons by suspending metabolic processes and establishing a “state of a potentially reversible death” (Neumann 2006).

This article advances this theoretical proposition further by exploring the dimensions of a “politics of suspension” in the light of the climate crisis. It discusses the infrastructural role of cryopreservation and cryobanking technologies in addressing biodiversity loss and the vital challenges of the Anthropocene. These technologies promise to keep future options open by reversing past extinctions in order to address the existential threats of the present. Following this imagination, de-extinction scientists and biologists dream of restoring ancient ecosystems and resurrecting extinct species as a way of responding to the climate crisis. However, this politics of suspension might also contribute to tendencies to preserve the status quo by putting on hold the political and social transformations needed to effectively respond to the climate crisis.

#### **KEY WORDS**

biopolitics, cryopolitics, “politics of suspension”, biodiversity, de-extinction

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## Introduction

In 2021 a team of scientists and entrepreneurs announced the start of Colossal, a company devoted to the vision of genetically resurrecting the woolly mammoth. However, their ambition is not limited to reanimating an extinct species but extends to a future role as ecosystem engineers. Due to global warming, not only the bodily remains of woolly mammoths but also enormous amounts of carbon sequestered in the Siberian and Northern American permafrost are currently thawing, releasing it into the atmosphere and further contributing to the climate crisis. In the light of this challenge, George Church, a well-known biologist and the co-founder of the biotech start up, suggests populating a natural reserve in the Siberian tundra with herds of woolly mammoths and other large herbivores. The idea is that their grassing habits and body weight would help to restore ancient ecosystems and keep the ground to colder temperatures that prevent ice from melting (Church and Regis 2012: 133–150; Roosth 2017: 167–170; Zimmer 2021; Herridge 2021).

It may seem quite ironic to propose to revive extinct animals of the ice age to fight anthropogenic global warming and biodiversity loss today. Also, one might seriously doubt if this idea of resurrecting the past will effectively respond to the profound and urgent need to take action in the present. However, I would like to discuss this proposition within a larger analytic frame that does not focus on the challenges of thawing but on practices of freezing contemporary life forms that are in danger of going extinct. My thesis is that this mode of responding to biodiversity loss and the climate crisis is linked to a particular form of governing the difference between the present and the future that I call “politics of suspension.”

In this article, I will first analyze the increasing establishment of cryobanks that contain animal or plant material in order to preserve biodiversity, keeping it in a liminal biological state, suspended between life and nonlife. The next section will present some crucial elements of a politics of suspension. It allows prolonging the present to keep options open and conceives of cryopreserved organic material as a standing-reserve, to use a Heideggerian term. The conclusion sums up the main argument and briefly points to the social and political repercussions of this mode of governing the future by prolonging the present.

### **Protecting biodiversity, resisting extinction: the establishment of cryobanks for animal and plant material**

In many different societal fields such as reproductive and regenerative technologies, biomedical research, transplantation surgery, and biosecurity preparedness, cryopreservation practices have significantly

affected the concepts of life and death, health and illness and (in)fertility. They are characterized by arresting processes of decay and dying, enabling a form of life beyond life (as we know it) by exposing organisms (or rather bits of their bodies) to a peculiar biological state between life and death: suspended life (Lemke 2022).

The use of artificial cold has also significantly shaped the practices of conservation biology and our understanding of biodiversity. In recent decades, the accelerating extinction of species has led to an enormous effort to collect and store gametes, tissue or DNA of plants and animals, relying on cryotechnological procedures. The aim is to preserve biodiversity by deep-freezing organic material of endangered or extinct species. These cryobanks are more than sites of conservation and storage, since they also provide the material resources for the potential resurrection of extinct species. These strategies of reanimation – known as “resurrection biology” (O’Connor 2015) or “de-extinction science” (Shapiro 2015) – are intended to “bring back to life” species that are already extinct or might go extinct in the near future by the use of reproductive and genetic technologies (e.g. embryo transfer, intergeneric surrogacy) (Friese 2009, 2013; Chrulew 2011; Fletcher 2014; Saragusty et al. 2016).

Cryobanks that seek to preserve endangered animal species are commonly called “frozen zoos” (Corley-Smith and Brandhorst 1999; Lanza et al. 2000). One important initiative in this field is the Frozen Ark project coordinated at the University of Nottingham in the UK (Clarke 2009). The Ark’s consortium is a network of research and conservation bodies, including zoos, aquariums, natural history museums, universities and research laboratories around the world, including institutions in several European countries. The consortium has developed protocols for storing material, implemented a catalogued repository of animal specimens, and carried out scientific research. So far, 48,000 samples of endangered animals have been collected, representing more than 5,000 species ([www.frozenark.org](http://www.frozenark.org); Comizzoli 2017).

In their ethnographic study of the Frozen Ark project in the UK, Esther Breithoff and Rodney Harrison note that the practice of freezing and storing genetic samples of endangered animals has undergone a significant shift in strategy. While this practice was once based on the narrative of acting as a pure and passive repository to safeguard the DNA of threatened species into an uncertain future, it now assumes “a more active function which acknowledges their potential for reanimation of genetic material in future de-extinction programmes” (Breithoff and Harrison 2018: 2). The Frozen Ark project, which originally saw its role primarily in collecting and storing biomaterial from animals, has mutated into an experimental site that provides the resources and raw material for scientific research to explore the possible reanimation of extinct species.

Matthew Chrulew (2011; 2017) and others have observed a strange dynamics of securing and destroying in the cryobanking of animal and plant material. The increasing disappearance of species and the hitherto unprecedented flurry of collecting and deep freezing biological material are not isolated phenomena where one simply follows the other. Rather, there seems to be a complementary, even complicit relationship between the two. Instead of breaking away from the patterns of global production and consumption that have led to the ecological crisis and environmental destruction, this frenzy of collecting and freezing risks preserving and expanding them. The diversity of plants and animals is not being protected in a way that ensures their existence and survival “in the wild.” Instead, the focus is entirely on securing the existence of “suspended” life forms as isolated and identifiable entities that can be stripped of their natural environment, technically processed, preserved and transferred to other contexts.

### Elements of a Politics of Suspension

The increasing establishment of cryobanks to preserve biodiversity is part of a more comprehensive government of suspended life. It is not restricted to conservation biology but extends to other fields of cryopreservation, such as reproductive technologies or regenerative medicine. The politics of suspension cryopreservation practices enact differs in important aspects from most strategies of preparedness or modes of preemption. They do not just take action ahead of time but also work directly on temporal horizons by maintain options and keeping events reversible. Unlike e.g. predictive policing or material stockpiling (Folkers 2019), practices that anticipate future events by taking measures in the present, cryopreservation practices seek to prolong the present in the light of the future. Thus, they enact a form of “chronopolitics” which seeks to govern “the difference between the future and the present” (Kaiser 2015: 166). They not only “buy time” but rather rearrange temporal pathways and developmental processes. The politics of suspension operates by what I call “the principle of whenever” (Lemke 2021). It keeps events in limbo, postponing (or not) decisions on the concrete “when” of the “whenever” and determining when the present is due to become the past.

An instructive example of this politics of suspension is provided by Leon Wolff in his study of the *Svalbard Global Seed Vault* (SGSV), which serves as backup for a large number of plant research institutes and agricultural gene banks around the world. Wolff argues that this planetary seed bank stretches the duration of the present to address the danger of extinction and other catastrophic events. In the light of climate change and biodiversity loss, “the aim of the SGSV is to extend the period in which action can be taken and events and mistakes can

be corrected. [...] it opens up a space in which the events of loss and extinction are not permanent” (Wolff 2021: 90). Thus, the SGSV does not prevent the imminent disaster as such but seeks to ensure that the damage will be reversible – Wolff describes this strategy as a “politics of reversibility” (2021, 87); see also Gehring 2007, 429).

Thus, suspended life inaugurates a new form of governing the present by molding and modifying temporal pathways. The politics of suspension consists of several distinctive elements.

1. First, the politics of suspension goes beyond conventional technologies of collecting and storing organic material as it explicitly includes a fictive and speculative dimension. It not only assembles and preserves “cryofacts” (Friedrich 2020: 329) for contemporary usages but also mobilizes and explores purposes “as yet unknown” (Radin 2017: 55). These “cryofictions” are characterized by indeterminacy and contingency, by promise and potential. Cryobanks contain an apparatus of “bioavailability” (Cohen 2005). Cryobanks resemble electronic devices and material infrastructures on standby, being neither completely on nor ultimately off. They operate in a “sleep mode,” representing a dynamic standstill, always ready to be reactivated. Thus, the idea of whenever embraces prospective “favorable” constellations, future imaginaries and promissory alignments of means and objectives (Friedrich and Hubig 2018; Friedrich 2020).

2. Secondly, the establishment of cryobanks for different purposes might make it possible to keep options open, but they often also delay decision-making or keep problems in limbo instead of tackling them. While it mobilizes suspended life to expand the duration of the present, the politics of suspension risks postponing necessary decisions or essential changes. The increasing establishment of frozen zoos might feed fantasies of ultimate biological control suggesting that extinction is not forever but always at disposal for reanimation. Enacting a logic of anticipation, these cryobanks seek to mitigate the destructive and disruptive consequences of (future) catastrophes instead of stopping the course of events that leads to them. Radin and Kowal stress this as “the most striking temporal dimension of cryopolitics: the abdication of responsibility for action in the present made possible by recourse to the promise of an ever-receding, and technoscientifically enabled, horizon of future salvation” (Radin and Kowal 2017: 9).

3. Thirdly, cryopreservation practices do not just add options or enact a surplus of potential; rather, the politics of suspension operates as potentializing and depotentializing at the same time. Or rather: it potentializes by depotentializing, the taming and curbing of vital developmental and differential processes for some uses excludes or marginalizes the choices for others. It is important to map the selective formats and uneven vulnerabilities cryotechnologies enact and their normative underpinnings, which differentially valorize certain forms of life at the

expense of others. Which issues become “matters of concern” (Latour 2004) or “matters of care” (Puig de la Bellacasa 2017) to be addressed in cryobanking practices, and who has the power to define them? What needs to be stored in cryobanks and what may get lost or go extinct? For what futures are these frozen species preserved and what are the landscapes they will inhabit (Laboissiere 2019)? It is important to analyze what normative values materialize in these practices and how they enact and restabilize certain forms of life at the cost of others.

## Conclusion

I have argued that cryopreservation practices bring into existence a new form of life – suspended life – that is defined by a liminal state between life and nonlife. It extends the present by reserving time and suppressing metabolic processes, delaying change and ensuring reversibility. Rather than engaging with embodied, situated and finite living entities, suspended life enacts disembodied and decontextualized organic material or genetic information, making it available for different purposes and future usages.

Taking up a theme developed by the science fiction author Kim Stanley Robinson in his novel *2312*, Donna Haraway has suggested the label “the Great Dithering” (2016: 144; see Robinson 2012) to denounce our contemporary political and social inaction in the light of the massive ecological crisis and climatic challenges (on dithering as a mode of (in)action see Vogl 2007). Cryobanks for preserving biodiversity might make it possible to keep options open, but they might also help to feed visions of techno-fixes and delay decision-making or keep problems in limbo instead of tackling them. The increasing establishment of frozen zoos, for example, might feed fantasies of ultimate biological control suggesting that extinction is not forever but always at disposal for reanimation. Joanna Radin and Emma Kowal have identified as one of the most striking aspects of contemporary practices of cryopreservation “the abdication of responsibility for action in the present made possible by recourse to the promise of an ever-receding, and technoscientifically enabled, horizon of future salvation” (Radin and Kowal 2017: 9). The contemporary search for technological options to deep freeze and preserve organic material of animals and plants to make it available for future use seems to be linked to a politically conservative tendency. In fact, it might be more appropriate to stop the course of events leading to (future) catastrophes that already impact in the present, instead of seeking to mitigate their disruptive and destructive consequences.

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