Reflections

Realm of freedom and realm of necessity in definitions of the 'planetary': Cold War, Great Acceleration and the impediments of human-Earth entanglements — commentary to Pikner

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This reflection takes a perspective on planetarity as not only a certain ethics of relations between humans and the environment but also as a historically determined mode of human-Earth entanglements that produces rather impediments than open-ended futures. In response to Pikner's *Resonances of planetarity and commons within evolving urbanisms*, I found it useful to revisit Marx's notions of 'realm of freedom' and 'realm of necessity' and to propose that there could be at least two approaches to define the planetary. In one definition, planetary condition (as care and sensibility-driven entangled interactions between humans and the Earth) belongs to and further expands the realm of freedom. In another definition, planetary condition (as accumulated human socio-political and military activities strategically entangled with Earth matter for humans' competitive survival) constitutes the range of non-deliberated impediments and therefore belongs to the realm of necessity. In such a view, based on my own research experience, I propose to read the current interest in the 'planetary' as an attempt to start deliberating the underlying, initially non-deliberated, foundations of societies produced by the Great Acceleration and the infrastructural unleashing of human/Earth interactions starting from the 1940s−1950s.

Keywords: planetarity, impediments, realm of freedom vs realm of necessity, Cold War, Great Acceleration

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Defining plantetarity through ethics

In this reflection on Pikner's (2024c) *Resonances of planetarity and commons within evolving urbanisms*, I intend to highlight and to problematise the author's deliberate approach to grasp the 'planetary' as open-ended ethics-driven emergent relations of negotiation among the civic and the environmental, humans and the Earth. Pikner traces "how do urbanities resonate with environmental matters while intersecting with disturbances, commons, and anticipated futures" (Pikner 2024c, 287). The term resonance, according to him, allows one to grasp the extension and contestation of the urban "through more-than-human relations and commons" (*Ibid*., 287). Hence his essay "indicates ways terrestrial entanglements shape public negotiations around urbanism and environmental transformations" (*Ibid*., 288). In such an approach, urban areas are "arenas for negotiating values and co-existence on Earth" (*Ibid*., 286). To be more specific, Pikner takes the Estonian Baltic Sea coast — and the themes of 'Baltic Sea and its diverse publics' — as the focus and locus to elaborate his conceptual take on planetarity. In this regard he intentionally works on a particularistic conception of planetarity, which resists the totalising view on urban-environmental entanglements. The resonances of planetarity within urban change are grasped and unpacked by him through three vignettes about coastal assemblages involving waste, birds, and energy. This approach and the empirical cases addressed in the essay come from the author's long-term work (Pikner 2022, 2024a, 2024b) that is revisited and reflected on under a wider umbrella of the urban research and practice approaches to the 'planetary'.

In Pikner's conceptualisation, planetarity is approached from the perspective of a certain mode of conversation and negotiation, where non-humans acquire a voice. He points out and elaborates on the emergent positions on the Anthropocene and the repertoires of conversations inherent in these positions. This relates well to his decision to keep the planetarity notion open and particularistic, or, in other words, not totalising and unbounded. His first vignette, 'wastelands and deep time of urban formations' is a case study of the town of Sillamäe and its radioactive waste repository. Pikner's take provokes reflection on toxicity from the perspective of containment as a cultural form and as a certain not just technical but also cultural-political response to hazardous waste and to the results of human activity in general. Here the question is if it is possible to break the currently self-evident link between disposal and containment? Could we anticipate that the planetary urbanism can also be about going beyond containment as a measure and as a cultural form? In this respect it seems fruitful to retain the view on recycling as not just a technical solution, but as a destruction of linear temporality and container spatiality? In this view linear container materiality would be juxtaposed with non-linear cyclical materiality.

The second vignette, 'living with non-humans at the edge of a city', is unpacked with the case of the coastal terrain of Paljassaare in North Tallinn, which is part of the Natura 2000 bird protection area. It shows how "rare migratory birds became vivid part of public concerns and care for prioritizing certain forms of life in urban change" (Pikner 2024c, 292). Like in the other two vignettes, here Pikner suggests a certain framing of planetary connections and commons specifically in view of waterfront development, which makes possible fruitful comparisons with waterfront growth projects in Europe of the last decades in historical and socio-economic perspectives. Planetarity is unpacked here through the lens of protection, preservation, and heritage. Although all three vignettes showcase of planetary ethics, the vignette on birds is the most directly addressing the issue of planetarity, as first of all, a specific ethical attitude towards the environment, rather than a specific historical material condition. Thus, it most acutely triggers the questions about the status of humans in this ethics. For instance, would it be accurate to expect from planetary practices the treatment of nature beyond protection and conservation that are still rather human-expertise centered? In this respect, when translated specifically into urbanist practice, it would be interesting to further interrogate what the notion of planetarity, which systematically involves non-human perspectives, adds to the notion of sustainability. To what extent does the former radicalize the latter?

The third vignette, 'seascapes influenced by energy matter and urbanisation', equally encompasses the themes of birds, waterfront development and resource conservation. It addresses the contested project of the planned offshore wind energy parks surrounding the shores of Hiiumaa island. The opposition to the energy industry project came from the concerns about negative effects on non-human

entities (birds) and visual pollution. The essay frames this as a case of conflicting interests between resource extraction and nature conservation (Pikner 2024c). This vignette allows us to consider the Baltic Sea as a space for critical energy infrastructures from several perspectives — energy security, transition towards renewables in the energy sector (where the Baltic states are among the leaders in Europe), landscapes and species protection, and so on. Furthermore, this vignette allows distinguishing between human- and non- human-centred landscapes, as well as between human- and non- human-centred common public goods, specifically in the coastal context. Here the waterfront perspective and the properties of offshore wind energy projects as usually large-scale corporate projects (with or without state participation) allow us to reflect on different conflicting approaches to the renewable energy economy. On one hand, such types of projects might provoke resentment on behalf of individual households, prosumers and entrepreneurs that are sidelined and deprived of the possibility to shape and directly participate in energy transition processes. In some cases, this could also fuel populist backlashes against green energy transitions in general. On the other hand, such projects might hinder building site-specific more open relationships with non-humans. Given the complexity of the opposed energy project, this vignette acutely poses the issue of the possibility of free will in view of distributed agency.

Defining planetarity through history

Pikner's essay is a stimulating contribution to the discussions on the notion of planetarity, as well as on this notion's applicability to the variety of recent attempts to juxtapose 'city' and 'nature' in civic, research and design practice. My own reflection, triggered by his essay, takes a perspective on planetarity as a condition belonging not only to the 'realm of freedom', as prioritised in Pikner's approach, but also, no less importantly, to the 'realm of necessity'. In particular, by emphasizing the historical material lineage of human-Earth entanglements, I point out that historically they often constitute impediments, directly enforced or indirectly implemented without any negotiation or any sensibility to their long-term impact. And as a result, human-Earth entanglements persist not so much as entry points to open-ended futures but as loci of highly demanding, burdensome technical and political tasks. Moreover, they often have military infrastructural lineage, where infrastructure is at least partially a term of military background. One should acknowledge the fruitfulness of understanding planetarity through the themes of sensibility, negotiation, and open-endedness. It is also promising to understand entanglement as a condition that potentially gives rise to previously not existing types of civic alliances and modes of action. However, my own research experience suggests that significant conceptual interpretative potential of the notion of planetarity as a certain condition of human-Earth entanglements remains unused if we do not recognize the (military) power-driven and impediment-producing projects of infrastructural unleashing of human/Earth interactions. By regarding planetarity as a certain historically produced impediment for humans inhabiting the Earth, I aim to depict the conditions which require the notion of the 'planetary' with its respective conceptual repertoire.

Care and sensibility to non-human agencies are at the forefront of Pikner's essay's argument. It thereby suggests that the purpose of the notion of planetarity is to put into perspective the process of humans taming themselves vis-à-vis the environment, but at the same time taking greater responsibility. In more abstract terms, this sounds like planetarity is a human-induced situation of the Earth escaping instrumental top-down epistemic control. This requires nurturing more sensible attitudes towards the environment on behalf of the humans. However, this perspective triggers a question, which guides my reflection — is planetary condition actually a choice that can be negotiated? Or is this condition non-deliberatively enacted as an underlying effect of technological advancement and of both economic and military competition? A related question to this — should planetarity be defined exclusively through ethics? Or, alternatively to the ethics approach, does the notion of planetarity in social thought rather describe a certain historical period? In such a view, is this notion's purpose to produce an alternative periodization of the 20th–21st centuries in longer socio-political history? If yes, does this notion refer to the historical moment of recognition of the climate crisis as a pressing issue? Or, on the contrary, should the current interest in the 'planetary' be read as an attempt to start deliberating the underlying, initially non-deliberated, foundations of societies since the Great

Acceleration starting from the 1940s−1950s.? In the latter perspective, the Great Acceleration is not merely a quantitative transformation of the Earth but a not yet fully comprehended profound, unprecedented qualitative entanglement of matter and human activities.

Cold War, Great Acceleration and human/Earth interactions

The Great Acceleration and the infrastructures of unleashed human/Earth interactions are historically traced through several crucial historical moments and geographical locations, such as Oak Ridge in Tennessee, that hosted the Manhattan Project from 1942 to 1945; Semipalatinsk in Kazakhstan, used as a nuclear weapon testing site from 1949; the 'petrochemical corridor' along the Mississippi River between Baton Rouge and New Orleans starting from the 1950s; etc. Petrochemistry was one of the main factors of historical accelerated entanglement of the Earth's matter and human activities (Steininger 2021). It determined the scales and the modes of urban growth and of infrastructural enablers of the urban processes after World War II. It thus also determined the distribution of power among the actors of urban growth. Moreover, it has determined the designs and the materials, and, due to this, the expectations of urban lifestyles and urban governmentality. However, at the same time, it was both led by the military purposes (Johnston & McLeish 2020) and acted as a technological enabler of the scales of destruction. From this perspective, it also determined the distribution of power among actors of international politics and the economy.

In this regard it is meaningful that the acceleration of human/Earth interactions starting in the 1940s was taking place not only within the horizon of petrochemistry but also within the critical scaffolding of the Cold War as a tragic hostile peace, violently imposed by means of nuclear technology. That is to say, nuclear technology has become the foundation of the scaffolding of violence, power and justice put in place after World War II. The technology of nuclear fission, which was made possible by quantum physics to which the notion of entanglement originally belongs, has generated not only the mutually assured destruction doctrine but also an unprecedentedly hazardous footprint to deal with. In particular, the nuclear waste is such a new type of hazard, which has never been permanently safely contained within a reality of Newtonian spatio-temporal modernity (Liubimau 2025). In this sense, on a more abstract level of socio-political thought, nuclear fission enabled a profound new mode of relations between humans and the Earth, which cannot anymore be made sense of within the horizon of Newtonian physics and needs the notion of entanglement of the Earth's matter and human activity.

It is from this perspective I find it useful to revisit Marx's (1991) notions of 'realm of freedom' and 'realm of necessity' and to propose that there could be at least two approaches to define the planetary. In one definition, planetary condition (as care and sensibility-driven entangled interactions between humans and the environment) belongs to and further expands the realm of freedom — this is the lens elaborated by Pikner's essay. In another definition, planetary condition (as accumulated human socio-political and military activities strategically entangled with Earth matter for humans' competitive survival) constitutes the range of non-deliberated impediments and therefore belongs to the realm of necessity. The relations between these two definitions are profoundly tensional. In fact, understanding the Anthropocene itself — which, on the level of user experience, is basically a grid-like infrastructural statehood — needs both of them. The notion of entanglement in this respect can depict both the deeply intertwined modes of alliances that produce a distinct new type of political action and sophisticated multi-dimensional fetters that block any possibility to produce a relevant political action. Moreover, the critical reception of the Anthropocene suggests that accelerated technological means to produce and the liberty to consume thus result in an ever-expanding realm of freedom, as formally a greater self-determination of human activity (via dissociation of a human from the mundane material process of production), which turns into the foundation of greater necessity and boundedness in terms of the systematic devastation of Earth due to the very mode of organization of collective human life. In this perspective, (urban) lifestyle is a unit of relational space that is the key to reconfiguring the Anthropocene. However, lifestyle should be approached with awareness of the complex background of its historical determination.

Is there a Soviet mode of Great Acceleration?

My reflection on Pikner's essay is fed by my previous experience of researching articulations of the Soviet mode of Great Acceleration and its inertias specifically in the Baltics. This is firstly my long-term work on Visaginas, the Lithuanian satellite town of the decommissioned Ignalina Nuclear Power Plant, which was built starting in 1974, connected to the grid in 1983, and stopped producing electricity in 2009. It was both the research and interventional practice of nuclear urbanism after nuclear power (Liubimau & Cope 2021). Secondly, this is my shorter collaborative study of post-BRELL (Belarus, Russia, Estonia, Lithuania and Latvia) energy landscapes, primarily from Lithuania's perspective. It was produced as a critical research reality check and spatial scenario proposal for relations between energy, space, state and society in view of Lithuania, Latvia and Estonia disconnection from the Soviet-made and dispatched from Moscow electricity transmission system, BRELL and further synchronization with the European Grid in 2025 (Liubimau *et al*. 2024). I refer to these two examples — a nuclear urbanism after nuclear power, as well as post-BRELL energy geography — to open a possibility that planetarity is not only about fully intentional and ethics-driven entanglement of civic socio-political realities with the matter of the Earth. These research experiences helped me to grasp the Soviet mode of the Great Acceleration and the entanglements of humans and the Earth at large as impediments — imposed and highly path-producing and path-dependent (including also at least partially unintended consequences and resonances).

The nuclear waste produced by the Ignalina Nuclear Power Plant (INPP) has the longest timespan of institutional and infrastructural planning in Lithuania today. The non-productive process of INPP dismantling is the most expensive energy project in independent Lithuania so far. The disintegration from BRELL has revealed that the 300–330 kV transmission lines, built from the 1950s and serving as the critical scaffolding for the Soviet Great Acceleration in the Baltics, were left untouched by almost 35 years of institutional, economic and cultural Europeanization and can only partially be overcome in post-BRELL energy geography. Moreover, Russia systematically subverting the Lithuanian and Estonian Baltic Sea underwater electricity transmission cables in post-BRELL conditions challenges the assumption that the disconnection from the Soviet electricity grid is complete. While being politically in limbo between the end of World War II and the end of the Soviet Union (i.e., not formally recognized as the Soviet Republics by the West), Lithuania, Latvia and Estonia were part of the Soviet version of the Great Acceleration. It was intertwined with the series of violence and dispossession rather than organic growth. However, in this regard it would be good to avoid the metaphors of 'gaps' or 'voids' (as implicitly inviting another imperial intervention to fill them in) produced by this violence. In this respect, in my own research experience, empirical scaffolding for the notion of planetarity would not be complete without this notion's juxtaposition with the Soviet mode of Great Acceleration, whose foundation was impediment-producing military territorialisation.

Both of the infrastructural projects that I mentioned were critical determinants of the Cold War Soviet collective life in a grid-like statehood in the Baltics. In such a perspective, the realm of necessity enacted by the Cold War is not only about "a destructive competitive co-existence between socialism and capitalism" (Marcuse 1969, 25). And it is not only about the USSR using all possible means to catch up with the West technologically, marked by the tendency of all other spheres' subjugation to the military purposes. More importantly in this context, the Cold War was critically determined by the entanglement of human activity with the Earth's matter — firstly, enabled by nuclear fission technology, and secondly, manifested in the Great Acceleration at large. Thus, the Cold War could be considered the entry point to the planetary as an impediment — a new socio-political, military, technological and environmental reality, characterised by the hazards which destroyed previously existing orders of space and time. In this regard, on one hand, nuclear technology and the Cold War can be seen as a brutally enforced confinement to overarch the petrochemical modes of destruction, which were developed in the 20th century and tragically deployed during the two World Wars. On the other hand, the Cold War is an institutional (international politics) and epistemic (biosphere) regime to comprehend the Earth as a whole, which is different from the lens on globalization as the intensification of economic exchanges from the 1970s. The opposition 'planetary' versus 'global' — unpacked by Pikner through Spivak's distinction between 'planetary subjects' and 'global agents' (2003) — is fruitful in the context

of the other attempts to define planetarity apophatically, as not globalization. Part of my reflection's argument is that globalisation versus planetarity are not only two distinct types of interactions — humans/Globe versus humans/Earth. These interactions imply certain ethics inherent in them — of conquering and exchanging in the first case and of sensing and caring in the second case. In addition to the ethics lens, in this reflection I propose that planetarity is also a historically determined moment of the impediments produced by unleashed interactions between humans and the Earth.

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