UMR TREE 6031

TRANSITIONS ENERGETIQUES ET ENVIRONNEMENTALES

14th april 2022

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https://scpobx.zoom.us/j/97557698042?pwd=SDZtU3FHSzlIMkxUYnlTVW5VS3FwZz09

ID: 975 5769 8042 / Code: 552401

The conflictual definition of ecological transition in the subsurface industries

Institute of Political Studies Bordeaux, Room Monnet 2

Pr. Matthew Paterson

Pr. Alena Bleicher

Pr. Johan YANS

While political economy has long shown how subsurface energy and mineral resources where at the core of modern societies, the urgency of global ecological crisis poses more acutely the compatibility question between the ever-increasing subsoil mobilisation and the necessary process of ecological transition (Abraham and Murray 2015; Hopkins 2009). This intensive exploitation of soils and subsurface (Moore 2017) challenges the various conceptualisations of the ecological transition ending an extractive and destructive area. Moreover, the subsurface is frequently mobilised as a technical solution for the ecological transition (carbon storage, hydrogen storage, native hydrogen extraction, geothermal energy, copper or lithium extraction). With regard to other environmental issues (water, biodiversity, air pollution and the use of plant protection products), the subsurface is subject to a partial and incomplete politicisation in/for the transition conceptually deriving from the dominant and institutionalize 'ecological modernisation' (Mol, Sonnenfeld, and Spaargaren 2009; Sémal, 2017).

Program

8h45 Welcoming

9h Colloquium introduction

The conflictual definition of ecological transition

Chairs: Xavier Arnauld de Sartre et Sébastien Chailleux

Axis 1 Conceptualising the transition: how to go beyond ecological modernisation?

Chairs: Daniel Compagnon and Brice Auvet

9h15 **Matthew Paterson**, Pr. International Politics Manchester University

De- and repoliticization, purification and complexity in climate politics

10h **Excerpts** from **Peter Newell** seminar, Pr. Professor of International Relations, University of Sussex

10h10 **Collegial Discussion Axis 1**

10h45 **Break**

Axis 2: Subsurface in the ecological transition: what roles? what effects? what scenarios?

Chairs: Sébastien Chailleux and Xavier Arnauld de Sartre

11h **Johan Yans, Pr.** of **Geology,** University of Namur

What kind of mining for the transition?

11h45 **Aleina Bleicher** Pr. for Communication Studies and Social Sciences**,** Helmholtz Centre for Environmental Research

It's Always Dark in Front of the Pickaxe": Non-knowledge and the ecological transition in subsurface industries

12h30 **Collegial discussion of Axis 2**

13h Conclusion

Axis 1 : Conceptualising the transition: how to go beyond ecological modernisation?

Luc Semal (2017) insists on the deradicalisation of the notion of transition during its institutionalisation. Initially mobilised by the Transition Towns movement in 2005 and associated with the prospect of peak oil, transition then tended to break with the ideology of growth. However, the political success of the concept quickly watered down its content as it came to be associated with green growth (2015 french law "Energy transition for green growth"). Moreover, beyond the mere 'greening' of practices, this transition, in its institutional form, also associates the objectives of democratisation of decisions and territorialisation of projects and policies. However, this triptych is frequently debated, as shown by the growing controversies over renewable energy projects, the price of fossil fuels (including the carbon tax) or urbanisation. How, then, can we envisage social transformations towards a sustainability ? How can we avoid a binary thinking between the supporters of ecological modernisation and those of the collapse theory? How can we re-politicize this notion?

Matthew Paterson is a professor of International Politics at the University of Manchester. His research and teaching focuses on environmental politics, especially climate change politics. He is interested in the fundamental question of the challenges that dramatic environmental change poses to existing political institutions and structures, and what drives the responses of those systems to the unsustainability of the current world order. He has worked mostly on this in relation to climate change, and has worked principally on global climate governance (the UNFCCC, transnational governance initiatives), the political economy of climate (role of specific business sectors, the politics of carbon markets, generally how global capitalism shapes responses to climate change), and the cultural politics of climate change (the practices of daily life and the identities associated with them - automobility in particular).

Title: **De- and repoliticization, purification and complexity in climate politics**

In climate politics we see two intertwined dynamics. On the one hand we see recurring processes of de- and re-politicisation. This entails actors seeking to claim climate change is not political, or to take climate change out of formal democratic decision-making processes, while other actors seek to bring climate change squarely into public debate. Often this dynamic is about either obscuring or revealing and contesting power relations central to the political-economic processes that generate climate change. On the other hand we see a dynamic between 'purification' and complexity. Here we have multiple forms of attempts to strip down climate change to some simple essence (prices, technology, capitalism) which is very effective at focusing attention or mobilising social movements, but stands in tension with

the complexity of the myriad socio-technical systems that need to be decarbonised. This paper focuses on conceptualising these two recurring dynamics in general terms. It draws on a recent book (Paterson 2021) but extends the theoretical framework in more formal terms."

Excerpts from **Peter Newell** seminar (4 march 2021). Peter Newell is a Professor of International Relations at the University of Sussex. He is a specialist in the politics and political economy of environment and development. In recent years his research has mainly focussed on the political economy of carbon markets and low carbon energy transitions.

Besides working for academic institutions including the universities of Sussex, Oxford, Warwick and East Anglia, he has undertaken commissioned research and policy work for the governments of the UK, Sweden and Finland and for international organisations such as UNDP, GEF and the Inter-American Development Bank. He has worked for NGOs such as Friends of the Earth and Climate Network Europe and together with groups such as CDM Watch, Practical Action, Transparency International, Care, Centre for Trade and Sustainable Development, International Council on Human Rights Policy. He sits on the board of directors of Greenpeace UK, is a board member of the Brussels-based NGO Carbon Market Watch and a member of the advisory board of the Greenhouse think-tank.

Axis 2: Subsurface in the ecological transition: what roles? what effects? what scenarios?

As the material basis of technical modernity, the subsurface is used for resource extraction, storage and waste burial. It is frequently seen as an inexhaustible source of material or volumes. Far from consigning this perspective to the museum of industrial beliefs of the last century, the ecological crisis is now exacerbating tensions over these spaces. Indeed, a large part of the transition and response policies to climate change are based on technical innovations that propose the remobilisation of the subsurface: underground carbon storage, geothermal energy, Bio-Energy Carbon Capture and Storage (BECCS) for negative emissions, etc. New processes are being developed that will allow the development of new energy sources. New technological processes are making it possible to extract more and more resources from these environments (hydraulic fracturing, liquid mining, underwater mining) and are contributing both to increasing their fragility and to consolidating our society's dependence on them (Bridge et al. 2013). Moreover, the digital transition and its promises of dematerialisation of the economy and efficiency through the connectedness of everything (smart grid, smart city, etc.) has a hidden face that masks its material foundations (Bazilian 2018) anchored in the subsurface. Under these conditions, how can we envisage utilizations of the subsurface that are compatible with a transition that takes into account the multiple dimensions of the ecological crisis? How can these uses be prioritised, if necessary? How can we assess the multiscalar effects of these industries?

Johan Yans received a PhD degree in Earth Sciences from the University of Mons (Belgium) and the University of Paris-Sud in 2003. He was Postdoctoral Researcher at the *Fonds National de la Recherche Scientifique of Belgium* (2003-2006). He is now Full Professor at the University of Namur. His research interests focus on characterization of supergene ore deposits (associated to weathering processes), around the world (mainly Belgium, RDCongo, New Caledonia, Algeria, Morocco and Tunisia).

Title: **What kind of mining for the transition?**

Many authors/stakeholders envisage large increase of mining in the next decades, mainly due to the development of our lifestyle(s) and population growth. Where and how to find these geological resources, considering sustainable priorities? Mining/extraction of ores logically involves geological, technological and engineering concerns. However, it also deals with numerous other essential aspects, although less discussed by medias/citizen/experts, such as economy ("circular economy"), sociology ("social acceptability" or "perception of mining by the citizen"), ethics ("artisanal mining"), geopolitics ("strategic/critical commodities", "national strategies"), environment ("waste", "post-mining"), teaching (including popularization), land management (zones dedicated to extraction), philosophy ("needs" of commodities for Humans), history (current impacts of former supplies), law (how to legislate/regulate?)… This communication will expose/discuss some of these aspects, exploring the NIMBY (*Not In My Back Yard*) syndrome applied to mining industry in Belgium. The next supply of geological resources will clearly require a multi-disciplinary, holistic approach based on robust mono-disciplinary knowledges.

Professor **Alena Bleicher** studied Geography and Sociology at the Technical University Dresden and the Humboldt University in Berlin, Germany as well at the University of Toulouse Mirail in France. Since 2007 A. Bleicher was scientific assistant at the Helmholtz Centre for Environmental Research in Leipzig in an interdisciplinary research program on the revitalization of contaminated areas, later in a social scientific project on geothermal energy. From 2015 to 2020 she headed a social scientific research group on (technological) trends in raw material research and extraction of so-called critical resources in Germany. Since October 2021 A. Bleicher is professor for communication studies and social sciences at the Harz University of Applied Sciences. Her fields of interest encompass for example the role of nonknowledge in environmental management and technology development, the encounter of publics, science and experts in technology development, or the organization of technological innovation processes as real-world-experiments. **It's Always Dark in Front of the Pickaxe": Non-knowledge and the ecological transition in subsurface industries**

The miners' proverb indicates that non-knowledge is normalcy when decisions related to subsoil are taken. In spite of sound investigations and analyses of the underground to certain

extent it remains unknown where resources are located, how the exact character of neighboring rock formations is, how fast groundwater flows and how its qualities change when energy is extracted or stored. It is a finding of the research about knowledge that the more we know the more we know about what is not known. This observation also means that knowledge about sustainability and sustainable use of resources such as the underground has to be considered as preliminary knowledge. Thus, another dimension of non-knowledge is added that impacts the ecological transition of subsurface uses.

By taking the example of ecological restauration of subsurface contamination within this presentation I will discuss the roles non-knowledge has in decision making. Thereby I will highlight aspects such as the politization of non-knowledge and strategies actors rely on in order to deal with unavoidable ignorance. Based on ignorance studies in the context of environmental design I will contribute some conceptual thoughts on the conceptualization of ecological transition in the subsurface.