

Workshop on Geo-imaginaries

rj.3ddata.se/rapport.asp

F19-1300:1

Magdalena Kuchler

Workshop om Geo-föreläsningar

RIKSBANKENS JUBILEUMSFOND

Forskningsinitiering

Dr Magdalena Kuchler
Institutionen för geovetenskaper
Uppsala universitet
Villavägen 16
SE-752 36 Uppsala
ORCID:

Workshop om Geo-föreläsningar
Workshop on Geo-imaginaries

Anslagsförvaltare / Grant administrator
Uppsala universitet

Startdatum / Start date: 2019-09-25
Slutdatum / Final date: 2019-09-27
Ämneskod /subject code 1: Tvärvetenskapliga studier
Ämneskod / subject code 2: Övrig annan samhällsvetenskap
Ämneskod / subject code 3: Statsvetenskap (exklusive studier av offentlig förvaltning och globaliseringsstudier)

Sökta medel / Applied funding

Budgetår / Budget year	Lokaler (ej del av sökt belopp)	Indirekta kostnader (ej del av sökt belopp) Indirect costs (not part of applied funding)	Lönekostnader / Salaries	Drift / Operating costs	Totalt år / Total (year)
2019			0	150.000	2019 150.000

Personal / Staff (icke forskande personal / Non-research staff: 0% årsarbetstid)	Disp.år / Year of PhD exam	Årsarbetstid / Annual working time	LKP / Employer's social-insurance contribution top-up	Månadslön (heltid) Monthly salary (full time)
--	----------------------------	------------------------------------	---	---

Total projektkostnad / Total project cost: **150.000**

F19-1300:1

Magdalena Kuchler

Workshop om Geo-föreställningar

Budgetkommentar / Comments on the Budget

The workshop on Geo-imaginaries will take place between 25 and 27 September 2019 (lunch-to-lunch) in the Sigtuna Foundation (in close proximity the Arlanda airport, easily accessible by train/bus; only vegetarian food served). The guest list includes 12 researchers from Sweden (5), United Kingdom (4), United States (2) and Australia (1). Gender balance is 5 females and 7 males.

The following funding is being sought from RJ:

Travel costs for 12 participants: SEK 75 000.

Accommodation and meals for 12 participants: SEK 65 000.

Conference rooms for the workshop: SEK 10 000.

Total costs: SEK 150 000.

F19-1300:1

Magdalena Kuchler

Workshop om Geo-föreställningar

Sammanfattning på svenska / Summary in Swedish

Det övergripande syftet med denna workshop är att stimulera akademiska diskussioner samt att främja vetenskapligt arbete kring "geo-föreställningar" genom att fokusera på tre sammanhängande teman: 1) Det tänkbara: en granskning av rationaliteter och praktiker för att kunna förutse (o)kända eller nya resurser samt att visualisera nya resursområden; 2) Det omtänkbara: fokus på att återupptäcka och rehabilitera oönskade resurser; och 3) Det otänkbara: förståelse kring den materiella inbäddning som begränsar eller möjliggör våra förmågor av vad man kan föreställa sig. Evenemanget arrangeras av forskningsprogrammet Naturresurser och hållbar utveckling vid Institutionen för geovetenskaper på Uppsala universitet i samarbete med Department of Geography, Durham University. Genom att sammanföra 12 forskare vilka arbetar med forskningsfrågor kring "geo" inom samhällsvetenskap och humaniora, syftar workshopen till att: 1) stimulera akademiska diskussioner och underlätta tvärbestämning av kompetens inom och tillvägagångssätt för vetenskaplig forskning kring ämnet "geo-föreställningar"; 2) leverera ett högkvalitativt vetenskapligt resultat i form av en specielutgåva i tidskriften "Geoforum" samt att skapa en stark grund för vidare samarbete som syftar till att utveckla forskningsprojekt, 3) främja samhällsvetenskaplig forskning vid Institutionen för geovetenskaper, Uppsala universitet, samt att ytterligare stärka och utöka samarbetet med Department of Geography, Durham University.

Sammanfattning på engelska / Summary in English

The overall purpose of this workshop is to stimulate scholarly discussions and foster scientific work on “geo-imaginaries” by focusing on three interrelated themes: 1) the imaginary: examining rationalities and practices concerned with anticipating (un)known or new resources and visualizing new resource frontiers/terrains; 2) the reimagined: re-discovering and rehabilitating undesirable resources; and 3) the unimaginable: understanding material embeddedness which constrains or enables our abilities of what can be imagined. The event is organized by the research programme Natural Resources and Sustainable Development at the Department of Earth Sciences, Uppsala University; in collaboration with the Department of Geography, Durham University. By bringing together 12 scientists engaged in research on the “geo” across different disciplines in social science and humanities, the workshop aims to: 1) stimulate scholarly discussions and facilitate cross-pollination of expertise in and approaches to scientific research on the subject of geo-imaginaries; 2) deliver high-quality scientific output in the form of a special issue in the scientific journal "Geoforum" and create a strong foundation for further collaboration aiming to develop research projects; 3) promote social science research at the Department of Earth Sciences, Uppsala University, as well as further strengthen and expand collaboration with the Department of Geography, Durham University.

F19-1300:1

Magdalena Kuchler

Workshop om Geo-föreställningar

Projektbeskrivning / Project description

Purpose

Roughly 250 years after the dawn of the Industrial Revolution, which instilled a powerful idea that social progress could be achieved through the mobilisation of Earth’s natural resources, humankind faces arguably its greatest challenge in anthropogenic climate change. To avoid planetary catastrophe, processes of social metabolism need to be rapidly and extensively reworked: transition to a low-carbon society, for example, requires a decisive scaling back of the lithosphere-atmosphere carbon flux. Yet, securing future socioeconomic worlds depends not only on reworking current material flows but also on our capacity to imagine different geo-futures – a capacity that is significantly shaped by the histories and geographies of resource flows (Kuchler and Bridge 2018). At this Anthropocene conjuncture - the geologically embryonic epoch of the human - the future of socio-metabolism and the Earth’s entrails is subject to contending and divergent geo-imaginaries. For example, the uninterrupted continuation of modernity can be secured by substituting resource territories or optimising undesirable resource flows with the help of technology (e.g. geoengineering, bioeconomy, clean coal), while also mustering supplies of new materials and geo-locations (e.g. critical materials, deep ocean). Alternative geo-imaginaries, such as de-growth and energy descent, centre on keeping resources in the ground and abandoning the conquest of resource frontiers.

The overall purpose of this workshop is to stimulate scholarly discussions and foster scientific work on geo-imaginaries. This term supplements a contemporary perspective on the volumes of the Earth (i.e. earth as a space of three dimensions) with a critical engagement with time (Ferry and Limbert 2008; Childs 2018). It understands natural resources as “an imagined form”

(Weszkalnys 2015; Kuchler 2017) in which the line between the social and the natural is increasingly blurred (Kotva 2019). The workshop will focus on three interrelated themes:

1. *The imaginary*: unravelling rationalities and practices concerned with anticipating and speculating about (un)known resources, as well as inventorying and visualizing new resources and resource frontiers/terrains; imagining geo not only as a 'standing reserve' of materials but also as active storage for resources and wastes doing the work of balancing material flows.
2. *The reimagined*: re-discovering re-calculating and/or rehabilitating undesirable resources; e.g. rebranding coal as clean source of energy or as jewellery; rehabilitating fossil fuels as compatible with sustainable development goals; rationalities and practices through which further extraction can be justifiable; re-imagined materialities of bioeconomy (e.g. BECCS), e-mobility or storage (e.g. critical materials, rare earths) and calculative practices that support them.
3. *The unimaginable*: understanding material embeddedness which constrains our abilities of what can be imagined; how specific geo-materialities, such as mineral extraction sites and infrastructures, (re)shape, enable and constrain imaginaries of future low-carbon trajectories.

Objectives

The workshop is organized and hosted by the research programme Natural Resources and Sustainable Development (NRHU) at the Department of Earth Sciences, Uppsala University (organizer: Associate Professor Magdalena Kuchler); in collaboration with the Department of Geography at Durham University (co-organizer: Professor Gavin Bridge). By bringing together 12 scientists engaged in research on the *geo* across different disciplines in social science and humanities, the workshop aims to:

1. Stimulate scholarly discussions and facilitate cross-pollination of expertise in and approaches to scientific research on the subject of geo-imaginaries concerned with resource frontiers, resource rebranding and resource materialities that underpin future low-carbon transition paths.
2. Deliver high-impact scientific output in the form of a special issue (SI) in the scientific journal *Geoforum* (proposal to be submitted in June 2019) and create a strong foundation for further collaboration aiming to develop research projects for funding applications (e.g. H2020 social science call "Building a low-carbon, climate resilient future").
3. Promote social science research as a significant component of the Department of Earth Sciences, Uppsala University, as well as further strengthen and expand collaboration between the Department of Earth Sciences, Uppsala University, and the Department of Geography, Durham University.

State of the art

The theoretical value of this workshop lays in the unique combination of research expertise and shared interests, particularly in terms of developing and implementing novel conceptual frameworks and unconventional understandings that transcend boundaries of dominant and/or conventional epistemic tools. By joining theoretical advances together, the workshop will stimulate further developments in novel theoretical frameworks and

understandings of geo-imaginaries. The workshop discussion will draw upon and contributes to three distinct but increasingly interrelated scholarly fields concerned with political geologies, imaginaries, and materialities.

Contrary to the traditional scholarship on geopolitics that – with its horizontal gaze – focuses on the politics of earth's surface, the emerging field of political geology is concerned with the politics of earth's subsurface, or the "vertical territory", as Bruan (2000) aptly refers to it. The burgeoning research on the *geo-politics* encompasses distinct but overlapping scientific interests, including resource-making, knowledge production of the subterranean, and the Anthropocene (Bobbette and Donovan 2019; Clark 2013; Kärg and Kuchler 2019; Yusoff 2013). At the very core of this approach lay questions on how resources and materialities of the subsurface become knowable, visible, metabolized and politicized entities (Bridge 2009; Kama 2013); how geoscientific knowledge on "vertical territory" (Braun 2000), concerned with prospecting and appraising resources, is produced and translated into political and economic decisions (Braun 2000; Kuchler 2017; Fry and Delgado 2018); and what are the future sociopolitical implications of marking unprecedented human impact on the earth's crust as a new geological epoch of the Anthropocene (Kotva 2019; Lövbrand et al 2015; Yusoff 2013). The political geology approach is of particular significance for critically examining the increasing sociopolitical and economic preoccupation with "unconventional" geological resources, technologies, and terrains that until recently were largely unknown or undiscovered. These include unconventional fossil fuels, e.g. shale gas (Kuchler 2017; Kama and Kuchler 2019), new resource frontiers, e.g. deep-sea mining (Childs 2018), and unorthodox climate change mitigation options, e.g. bioenergy with carbon capture and storage (Haikola et al 2019). This growing body of scholarly work is a building material for the emerging field of political geology that contributes to a better understanding and anticipation of the geo-future.

The combined challenges of energy transition and climate change have prompted researchers to draw increasing attention to (long-term) futures and to focus on the power of imaginaries (Kuchler 2017). The broad concept of imaginaries has become a subject of a burgeoning scholarly work spanning different social science disciplines. With their performative nature, imaginaries are increasingly recognized as important vessels, narratives or discourses that are able to indicate, mobilize, and (re)shape future paths and trajectories of societal development. While some scholars point out to lack of "positive imaginations of alternative possible" post-fossil futures (Hajer and Versteeg 2018), others argue that "imagination could be mobilized for societal change" (Pelzer and Versteeg 2019). Among different approaches that can help us better understand and anticipate energy futures, the concept of "sociotechnical imaginaries" has been increasingly employed in social science energy research to scrutinize future low-carbon transition (e.g. Kuchler and Bridge 2018; Eaton et al 2014; Jasanoff and Kim 2009; Smith and Tidwell 2016). This approach concentrates on examining the relationship between techno-scientific assemblages and socio-political order, and it considers the capacity to imagine futures a fundamental element of socio-political life (Jasanoff and Kim 2009, 2015). By arguing that imaginaries "project visions of what is good, desirable, and worth attaining for a political community" (Jasanoff and Kim 2009), a critical question arises as to "whose visions of future possibilities these are, for whom they are good and desirable (...), and why certain policy-makers would find them worth realizing" (Kuchler 2014). More importantly, who is the collective that imagines "forms of social life and social order reflected in the design and fulfillment" of low-carbon energy transitions (Jasanoff and Kim 2009)? Who has or has not the "power to imagine futures" (Kuchler 2017) and how is this power attained (through what means)?

Future imaginaries are often "trapped within the imaginative potentials and resources available in the contemporary socioeconomic system" (Kuchler 2014). In our efforts to conquer the unknown terrain of the future, we tend to populate it with various socio-political representations and materialities of the

present and/or past (Kuchler and Bridge 2018; Kuchler 2014; Smith and Tidwell 2016). The burgeoning body of work on materialities recognizes that objects (e.g. coal, wind turbine) acquire powerful and/or contested meanings within a specific imaginary, which is in turn conditioned by the materialities (Anderson et al. 2012; Barry 2013; Bakker and Bridge 2006; Bennett 2010; Richardson and Weszkalnys 2014). Existing material conditions and infrastructures enable and/or constrain future visions (Gailing and Röhring 2016; Kuchler and Bridge 2018; Smith and Tidwell 2016). Moreover, energy resources and infrastructures are constantly (re)constituted in new discursive ways and, in return, they (re)shape narratives that surround them (Barry 2013; Kuchler and Hedrén 2017; Kuchler and Linnér 2012). By looking through the conceptual lens of material-discursive dynamics the question arises: how are coal mines, electrical grids, or wind farms such assemblages that combine place-specific raw materials and landscapes with political power and local collective networks; how are they fed into powerful narratives and future visions of regional energy transitions; how do material dimensions of specific landscapes enable or constrain the shift to low-carbon energy systems?

Participants & papers

Associate Professor Magdalena Kuchler (organizer)

Affiliation: Department of Earth Sciences, Uppsala University

Paper title: *Speculative imaginaries of resource-making: the case of shale gas in the UK and Poland*

Professor Gavin Bridge (co-organizer)

Affiliation: Department of Geography, Durham University

Paper title: *Subterranean circulation and the 'upside' imaginaries of mining stock promotion*

Professor Bruce Braun

Affiliation: Geography, Environment and Society, University of Minnesota

Paper title: *Art and (non)extraction: exploring the aesthetic turn in political ecology*

Dr John Childs

Affiliation: Lancaster Environment Centre, Lancaster University

Paper title: *What is the seabed? Towards a geo-imaginary of deep-sea mining in the Anthropocene*

Associate Professor Matthew Fry

Affiliation: Department of Geography and the Environment, University of North Texas

Paper title: *Burgos Potential, Sustainable Fracking, and other Geo-Imaginaries along the Texas-Mexico Border*

Dr Alexandra Gormally

Affiliation: Lancaster Environment Centre, Lancaster University

Paper title: *Geo-imaginaries in the making; exploring imaginaries of geological pore space and energy from magma*

Dr Simon Haikola

Affiliation: Department of Thematic Studies – Technology and Social Change, Linköping University

Paper title: *Bioenergy with carbon capture and storage in socio-technical imaginaries*

Professor Kuntala Lahiri-Dutt

Affiliation: Crawford School of Public Policy, Australian National University

Paper title: *The social (and gendered) life of underground space*

Associate Professor Eva Lövbrand

Affiliation: Department of Thematic Studies – Environmental Change,
Linköping University
Paper title: *The Anthropocene and the Political Imagination*

Associate Professor, Patrik Oskarsson

Affiliation: Department of Urban and Rural Development, SLU
Paper title: *Stratified imaginaries: Underground coal seams, hill-top bauxite plateaus and the people of middle India*

Dr Ethemcan Turhan

Affiliation: History of Science, Technology and Environment, KTH
Paper title: *Resisting the heat under our feet: Contesting geothermal energy in Turkey*

Dr Bregje van Veelen

Affiliation: Department of Geography, Durham University
Paper title: *Imagining the future to dismantle the present: Governing a 'just transition' in high-carbon economies*

Programme

Time: Lunchtime, 25 September 2019 – Lunchtime, 27 September 2019.

Place: Sigtuna Foundation, Sigtuna

Day 1

12:30 – 13:30 Lunch
13:30 – 14:00 Group discussion and opening summary
14:00 – 15:30 Paper discussion 1: Eva Lövbrand & Bruce Braun
15:30 – 16:00 Coffee break
16:00 – 17:30 Paper discussion 2: Simon Haikola & Ethemcan Turhan
19:00 Dinner

Day 2

09:00 – 10:30 Paper discussion 3: Matthew Fry & Magdalena Kuchler
10:30 – 11:00 Coffee break
11:00 – 12:30 Paper discussion 4: Kuntala Lahiri-Dutt & Bregje van Veelen
12:30 – 13:30 Lunch
13:30 – 15:00 Paper discussion 5: Patrik Oskarsson & John Childs
15:00 – 15:30 Coffee break
15:30 – 17:00 Group discussion
19:00 Dinner

Day 3

09:00 – 10:30 Paper discussion 6: Gavin Bridge & Alexandra Gormally
10:30 – 11:00 Coffee break
11:00 – 12:30 Group discussion and closing summary
12:30 – 13:30 Lunch

F19-1300:1

Magdalena Kuchler

Workshop om Geo-föreställningar

Referanser / References

- Anderson, B., Kearnes, M., McFarlane, C., & Swanton, D. (2012). Materialism and the politics of assemblage. *Dialogues in Human Geography*, 2(2), 212–215.
- Bakker, K., & Bridge, G. (2006). Material worlds? Resource geographies and the 'matter of nature'. *Progress in Human Geography*, 30(1), 5-27.
- Barry, A. (2013). *Material politics: Disputes along the pipeline*. John Wiley & Sons.
- Bennett, J. (2010). *Vibrant Matter: A Political Ecology of Things*. Durham, NC: Duke University Press.
- Bobbette, A., & Donovan, A. (Eds.). (2019). *Political Geology: Active Stratigraphies and the Making of Life*. Palgrave Macmillan.
- Braun, B. (2000). Producing vertical territory: geology and governmentality in late Victorian Canada. *Ecumene*, 7(1), 7-46.
- Bridge, G. (2009). Material worlds: natural resources, resource geography and the material economy. *Geography Compass*, 3(3), 1217-1244.
- Childs, J. (2018). Extraction in Four Dimensions: Time, Space and the Emerging Geo(-)politics of Deep-Sea Mining. *Geopolitics*, DOI: 10.1080/14650045.2018.1465041.
- Clark, N. (2013). Geoengineering and Geologic Politics. *Environment and Planning A*, 45(12), 2825–2832.
- Eaton, W.M., Gasteyer, S.P., & Busch, L. (2014). Bioenergy Futures: Framing Sociotechnical Imaginaries in Local Places. *Rural Sociology*, 79(2):227–256.
- Ferry, E. E., & Limbert, M. E. (2008). *Timely Assets*. School for Advanced Research Press.
- Fry, M., & Delgado, E. (2018). Petro-Geographies and Hydrocarbon Realities in Latin America. *Journal of Latin American Geography*, 17(3), 10-14.
- Galling, L., & Moss, T. (Eds.). (2016). *Conceptualizing Germany's Energy Transition: Institutions, Materiality, Power, Space*. London: Palgrave Macmillan.
- Haikola, S., Hansson, A., & Anshelm, J. (2019). From polarization to reluctant acceptance—bioenergy with carbon capture and storage (BECCS) and the post-normalization of the climate debate. *Journal of Integrative Environmental Sciences*, 1-25.
- Hajer, M., & Versteeg, W. (2018): Imagining the post-fossil city: why is it so difficult to think of new possible worlds? *Territory, Politics, Governance*, DOI: 10.1080/21622671.2018.1510339.
- Jasanoff, S., & Kim, S.-H. (2013). Sociotechnical Imaginaries and National Energy Policies. *Science as Culture*, 22(2), 189-196.
- Jasanoff, S., & Kim, S.-H. (2015). *Dreamscapes of Modernity*. Chicago: The University of Chicago Press.
- Kama, K. (2013). *Unconventional Futures: Anticipation, Materiality, and the Market in Oil Shale Development* (Unpublished DPhil thesis). University of Oxford.

- Kama, K., & Kuchler, M. (2018). Geo-Metrics and Geo-Politics: Controversies in Estimating European Shale Gas Resources. In A. Bobbette & A. Donovan (Eds.), *Political Geology: Active Stratigraphies and the Making of Life*. Palgrave Macmillan.
- Kotva, S. (2019). Attention in the Anthropocene: On the Spiritual Exercises of Any Future Science. In: Bobbette, A., Donovan, A., *Political Geology: Active Stratigraphies and the Making of Life*. Palgrave Macmillan.
- Kuchler, M. (2014). Sweet dreams (are made of cellulose): Sociotechnical imaginaries of second-generation bioenergy in the global debate. *Ecological Economics*, 107, 431–437.
- Kuchler, M., & Hedrén, J. (2016). Bioenergy as an Empty Signifier. *Review of Radical Political Economics*, 48(2), 235-251.
- Kuchler, M. (2017). Post-conventional energy futures: Rendering Europe's shale gas resources governable. *Energy Research & Social Science*, 31, 32–40.
- Kuchler, M., & Bridge, G. (2018). Down the black hole: Sustaining national socio-technical imaginaries of coal in Poland. *Energy Research & Social Science*, 41, 136–147.
- Kuchler, M., & Hedrén, J. (2016). Bioenergy as an Empty Signifier. *Review of Radical Political Economics*, 48(2), 235-251.
- Kuchler, M., & Linnér, B.-O. (2012). Challenging the food vs. fuel dilemma: Genealogical analysis of the biofuel discourse pursued by international organizations. *Food Policy*, 37, 581-588.
- Lövbrand, E., Beck, S., Chilvers, J., Forsyth, T., Hedrén, J., Hulme, M., ... & Vasileiadou, E. (2015). Who speaks for the future of Earth? How critical social science can extend the conversation on the Anthropocene. *Global Environmental Change*, 32, 211-218.
- Pelzer, P., & Versteeg, W. (2019). Imagination for change: The Post-Fossil City Contest. *Futures*, DOI: 10.1016/j.futures.2019.01.005.
- Smith, J. M., & Tidwell, A. S. (2016). The everyday lives of energy transitions: Contested sociotechnical imaginaries in the American West. *Social Studies of Science*, 46(3), 327-350.
- Weszkalnys, G. (2015). Geology, potentiality, speculation: on the indeterminacy of first oil. *Cultural Anthropology*, 30(4), 611–639.
- Yusoff, K. (2013). Geologic Life: Prehistory, Climate, Futures in the Anthropocene. *Environment and Planning D*, 31(5), 779–795.

F19-1300:1

Magdalena Kuchler

Workshop om Geo-föreställningar

Projektdeltagarnas publikationer / Project participant's publications
Publications of Associate Professor Magdalena Kuchler (the applicant and workshop organizer)

Kama, K., & Kuchler, M. (2019). Geo-Metrics and Geo-Politics: Controversies in Estimating European Shale Gas Resources. In A. Bobbette & A. Donovan (Eds.), *Political Geology: Active Stratigraphies and the Making of Life*. London: Palgrave Macmillan.

Kuchler, M., & Bridge, G. (2018). Down the black hole: Sustaining national socio-technical imaginaries of coal in Poland. *Energy Research & Social Science*, 41, 136-147.

Kuchler, M. (2017). Post-conventional energy futures: Rendering Europe's shale gas resources governable. *Energy Research & Social Science*, 31, 32-40.

Kuchler, M. (2014). Sweet dreams (are made of cellulose): Sociotechnical imaginaries of second-generation bioenergy in the global debate. *Ecological Economics*, 107, 431-437.

Kuchler, M., & Linnér, B.-O. (2012). Challenging the food vs. fuel dilemma: Genealogical analysis of the biofuel discourse pursued by international organizations. *Food Policy*, 37, 581-588.

Publications of Professor Gavin Bridge (workshop co-organizer)

Bridge, G. (2018). The Map is Not the Territory: a sympathetic critique of energy research's spatial turn. *Energy Research & Social Science*, 36, 11-20.

Bridge, G., Bouzarovski, S., Bradshaw, M., & Eyre, N. (2013). Geographies of Energy Transition: space, place and the low carbon economy. *Energy Policy*, 53, 331-40.

Bridge, G. (2009). Material worlds: Natural resources, resource geography, and the material economy. *Geography Compass*, 3(3), 1217-1244.

Bakker, K., & Bridge, G. (2006). Material worlds? Resource geographies and the matter of nature. *Progress In Human Geography*, 30(1), 5-27.

Bridge, G. (2004). Contested terrain: mining and the environment. *Annual Review of Environment and Resources*, 29, 205-259.