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Maantieteen päivien 2021
tiivistelmäkirja

*Abstract book of
The Annual Meeting of
Finnish Geographers 2021*

Maija Toivanen (toim.)



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Maantieteen päivät on vuosittain Suomessa järjestettävä maantieteilijät ja aluetieteilijät yhteen kokoava tieteellinen konferenssi. Vuonna 2021 tapahtuma järjestetään Oulussa 4.–5.11. yhteistyössä Oulun yliopiston maantieteen tutkimusyksikön, Alue- ja ympäristötutkimuksen seuran, Pohjois-Suomen Maantieteellisen Seuran, Suomen Maantieteellisen Seuran ja Oulun yliopiston maantieteen opiskelijoiden ainejärjestön Atlas ry:n kanssa.

Tapahtuma on osa Tutkitun tiedon teemavuotta 2021.

Kirjan on toimittanut Maija Toivanen.

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Key note -luentojen tiivistelmät

Key note abstracts

► Reconfiguring research relevance in the search for sustainable solutions

Hilde Refstie

Fennia-luento

In this lecture, I discuss the role of the academe in preventing ‘fast policymaking’ on sustainability. I suggest that the co-productive turn, where universities are increasingly expected to engage with a diverse set of actors - including citizens, can provide checks and balances to top-heavy bureaucracy, political elites, and market power in sustainability processes. However, as long as research relevance continues to be defined in neoliberal terms as meeting the needs of the economy and industry, this potential will not be realized. Lending inspiration from the ‘slow research movement’, the call for more reflexive co-production in sustainability science and alternative debates on research impact, I propose in the lecture a critical reconfiguration of research relevance that better responds to the multiple imperatives of research to be critical and rooted, explanatory and actionable. This reconfiguration is, however, contingent on active scholarly engagement with the politics that condition relevance. Drawing on my experiences from participating in a collective called New University Norway I therefore end the lecture by offering some thoughts for the ‘new’ university in co-producing sustainable solutions.

► To be confirmed

Richard Powell

To be confirmed

► **Alue ja Ympäristö: kriisitutkimus muutosvoimana**

Ari Lehtinen

Alue ja ympäristötutkimuksen seuran 50 v. juhluento

Puheenvuoroni aluksi tarkastelen lyhyesti *Suunnittelumaantiede*, *Aluesuunnittelu* ja *Alue ja Ympäristö*-lehtien vuosikymmeniä; linjauksia ja painotuksia. Pohdin näiden suhdetta keskeisiin aikalauskysymyksiin eli kysyn, kuinka lehden suhde yhteiskunnalliseen muutokseen on tullut kulloinkin ilmi. Tämän jälkeen täsmennän paraillaan syvenevien ympäristökriisien osoittamia haasteita alue- ja ympäristötutkimukselle. Ympäristökriiseillä viitataan neljään yhtäaikaiseen kriisitihentymään: ilmastohätätilaan, luonnon tilan ja monimuotoisuuden romahdukseen, luonnonvarojen ylikäyttöön sekä elinympäristön saastumisongelmiin.

Pyrin osoittamaan, kuinka ympäristökriisit ovat yhteiskunnallisia ja alueellisia (sosio-spatiaalisia) kriisejä: 1) kuinka luonnon (sosiaalinen ja teknologinen) muutos läpäisee ihmisen ja ihmisyhteisöt; 2) kuinka ympäristökriisit pakottavat kaikkien keskeisten yhteiskunnallisten kysymysten uudelleenmuotoiluun ja 3) kuinka alue- ja ympäristötutkimuksen painopiste on siirrettävä rohkeammin muutoksen seurannasta kriisien yhteiskunnallisiin syy- ja seurausmekanismeihin sekä tarvittaviin korjausliikkeisiin – muutosvoimaiseen tutkimukseen.

Tämän jälkeen pohdin muutosvoimaisen alue- ja ympäristötutkimuksen vaikuttavuutta ja sen arviointia, erityisesti välittömien ja epäsuorien vaikutusketjujen roolia yhteiskunnallisessa muutostyössä. Jäsennän tutkimuksen ja tutkijoiden yhteiskunnallisen vaikuttavuuden ehtoja: asiaosaamista, uskottavuutta, vastuullisuutta, esiintymistaitoja, inspiroivuutta, arkielulistämistä, puhuttelevuutta, luottamuksen vahvistamista, yhteistyösuuntautuneisuutta ja kommunikaatioteknologian hallintaa – sekä valmiutta kriittisten kysymysten sekä välttämättömien korjaustarpeiden ja -liikkeiden julkiseen esittämiseen.

Näitä asiaosaamisen ja vaikuttavuuden haasteita käsittelen luentoni ydinossassa. Korostan tutkimusprosessin läpinäkyvyyden ja yhteiskunnallisen painoarvon jatkuvan reflektion tarvetta, erityisesti tiedon poliittisen luonteen arvioinnin merkitystä. Kyse on lopulta, kriisien keskellä, alue- ja ympäristötutkimuksen yhteiskunnallisen oikeutuksen lunastamisesta. Tämä edellyttää vahvoja näyttöjä kriisi-ilmiöiden ja niiden taustasyiden perkaamisessa sekä siirtymäaskelten (transition, systeemisen siirtymän) osoittamisessa.

Lopuksi esittelen viimeisimpiä alue- ja ympäristötutkimukseen tavalla tai toisella yhdistyneitä aloitteita ja liikkeitä, joissa ympäristökriisien taustasyyt ja yhteiskunnalliset siirtymätarpeet ovat nousseet vaikuttavalla tavalla osaksi systeemistä korjaustyötä. Tällaisina liikkeinä tunnistan muun muassa *Versus*-verkkolehden, Bios -tutkijayhteisön, *degrowth*-, *buen vivir*- ja kohtuusverkostot, transitiokaupunkiohjelmat, Lumimuutos Osuuskunnan, Elokapiinan/*Extinction Rebellion*'n, *Radical Ecological Democracy*'n ja – ehkä kaikkien läpikäyvimmin, ainakin meillä Suomessa – maantieteen ja biologian opettaja-koulutuksen ja -työn sekä koulululaisten *Fridays for Future*'n.

Alue ja Ympäristö: Toward Crisis Studies pro Systemic Transition

I will begin my anniversary speech by shortly reflecting upon the five decades of *Suunnittelumaantiede* (Planning Geography), *Aluesuunnittelu* (Regional Planning) and *Alue ja Ympäristö* (Territory and Environment/TE). The profiles and priorities of the journals will be assessed against the socio-spatial and socio-environmental changes that have surrounded them. Thereafter, I will look at the calls, and demands, the deepening environmental crises (consisting of climate emergency, biodiversity collapse, extractive practices/ecocides and pollution puzzles) is currently affording to TE researchers.

I will show how environmental crises are thoroughly socio-spatial crises: 1) how the (social and technological) changes in nature penetrate through humans and human communities; 2) how the deepening environmental crises presume the reformulation of all main questions of society/societal existence; 3) how the prior focus of TE studies needs to be turned toward critical contributions on the roots of crises and routes of transition.

Consequently, on this ground, I will briefly discuss about the measures to refine to the societal bearing of TE studies associated to: skills of (issue-based) expertise; abilities of inspiring/presentability and credibility; strives for responsibility and confidence-building, mastering of communicative means – and courage to publicly present and defend the most critical of the crisis questions and transition needs.

I will also emphasise the constant reflection of the scholarly transparency and societal credibility of TE research processes, especially in terms of the (unavoidable) political linkages of knowledge production. The question is, under the deepening crises, about the societal legitimacy of TE research. This is gained only by eye-opening contributions to the debate on crises phenomena and their root causes, attached by guidance to systemic transitions.

As a conclusion, I will present some social initiatives that have emerged from within the fields of TE research that have effectively promoted the understanding of the necessities of systemic transition, such as Versus journal, Bios research unit, networks of degrowth, *buen vivir* and *kohtuus*, Transition Cities programmes, Snowchange cooperative, *Elokapina*/Extinction Rebellion, Radical Ecological Democracy and – perhaps most thoroughly, at least in Finland – the Geography/Biology teacher education and work (serving, for example, in the background of the Finnish extensions of the Fridays for Future movement).

► Does mobile Big Data change geographical research?

Tuuli Toivonen

In my talk, I will explore the potential of mobile Big Data, and Big Data in general, for conducting geographical research. I will provide examples of new research avenues that these data may open, examine the impact of the availability of these data for the research practices and approaches, and evaluate critically the challenges related to the use of these data in geographical research.

Työryhmien kuvaukset ja esitysten tiivistelmät¹ Session descriptions & abstracts²

I Migration and Environment

Session leaders: Saija Niemi (Migration Institute of Finland), Eeva-Kaisa Prokkola (University of Oulu), Élise Lépy (University of Oulu)

Geography is well placed to advance interdisciplinary thinking about migration. In recent decades, there has been an increase in geographical studies on migration from the perspective of climate/environmental change as environmental factors are gaining more importance. This effectively brings together knowledge on human and physical geography aspects in relation to space, place and movement. There is no single theory of migration, and migration experiences differ significantly according to groups and environments, and in time. The Migration and Environment workshop invites papers from scholars interested in examining the interrelated issues of migration and environment, especially:

- In relation to dynamics and sites of migration, refugee and IDP camps, urban and rural areas, border crossing, transition routes, governance, international development, global agendas, and other related themes;
- How changing environmental conditions impact populations (food security, health etc.) and how these environmental factors affect decision-making on migration.

We appreciate insights on the current geographical problems and solutions in relation to migration and environment, how geography can participate in solving these societal and environmental challenges, and how the geography community can strengthen its societal impact. Whether they are empirical, theoretical, or policy-oriented, presentations from all branches of geography are welcome.

► Framing Transnational Climate Migration in a Nordic Country

Élise Lépy (University of Oulu), Saija Niemi (University of Oulu), Jaana Palander (University of Oulu), Eeva-Kaisa Prokkola (University of Oulu)

Abstract is not published.

Keywords: migration, climate change, frame analysis

¹ Tiivistelmien yhteydessä esittäjän (tai esittäjien) nimi on kursivoitu.

² In abstracts, presenting author(s) is in italics.

► Preparing to leave? Household mobility decisions in areas affected by climate change in coastal Bangladesh

Päivi Lujala (Oulun yliopisto), Arne Wiig (Chr. Michelsen Institute), Minhaj Mahmud (Bangladesh Institute of Development Studies), Ivar Kolstad (Norwegian School of Economics), Sozina Bezu (Ryerson University)

We analyze unique survey data on the migration predictions of 400 households in two extremely climate exposed unions in coastal Bangladesh. Despite having prospects no better than many low-lying pacific islands, our results suggest that few households in these areas expect to relocate over the coming five-year period. To the extent households predict they will move, they believe fast-onset events such as cyclones will be the reason, not slow-changing environmental factors like increasing soil salinity. A discrete choice experiment confirms the finding that households expect to move if there is considerable destruction of property from fast-onset events, not due to a gradual erosion of environmental conditions. Household migration predictions correlate non-linearly with household assets; the poorest and richest households are the most likely to move. In sum, our results suggest that households exposed to adverse impacts of climate change to a limited extent perceive migration as an important adaptation strategy.

Keywords: Climate migration, Bangladesh, survey

3 Research agenda for Finnish disaster research and disaster geography

Session leaders: Eija Meriläinen (University College London), Maija Nikkanen (University of Helsinki), Aleksi Räsänen (University of Helsinki), Antti Silvast (Norwegian University of Science and Technology)

Geography has often been highlighted as a discipline bridging natural and social sciences, and it has also prominently shaped the interdisciplinary field of disaster studies. Disaster geography has, for instance, typically emphasized that disasters emerge from a combination of hazard (e.g. a natural phenomenon) and vulnerability (e.g. stemming from societal inequality). Key concepts of geography, such as space, place and scale, are increasingly useful in making sense of the transnational dynamics of disaster risks. Disaster studies have not been extensively developed in Finland so far and there is a need for maturing this research field and contributing with it to the domestic academic discussion. Beyond Finland being directly impacted by hazards such as COVID-19, storms and floods, Finnish actors are also involved in disaster governance and politics beyond the national borders. Hence, in this session we ask “what could Finnish disaster research and disaster geography look like”? The panel is bilingual, welcoming contributions in Finnish or/and English. Key themes include but are not limited to:

- Governing and managing disaster risks within Finland
- The role of Finnish actors in the transnational disaster risk governance and management
- Understanding key concepts in disaster studies and disaster geography
- Theoretical and methodological perspectives on disaster studies

Katastrofitutkimuksen ja katastrofimaantieteen suuntaviivoja Suomessa

Maantieteen on usein korostettu rakentavan siltoja luonnon- ja yhteiskuntatieteiden välille. Tieteenala on myös voimakkaasti muovannut monitieteisen katastrofitutkimuksen kenttään. Katastrofimaantiede on esimerkiksi tyypillisesti korostanut katastrofin syntyvän vaaran (esim. luonnonilmiö) ja haavoittuvuuden (esim. yhteiskunnalliseen eriarvoisuuteen kytkeytyvä) kohdatessa. Ylikansallisten katastrofien dynamiikan ymmärtämisessä maantieteen avainkäsitteet, paikasta tilan kautta mittakaavaan, ovat myös yhä hyödyllisempiä. Suomalaista katastrofitutkimusta ei ole tähän saakka laajamittaisesti kehitetty, mutta tutkimusalalla olisi tilaa kypsyä ja ammentaa kotimaiseen akateemiseen keskusteluun. Myrskyt, tulvat ja COVID-19 vaikuttavat Suomeen suoraan, mutta tämän lisäksi suomalaiset toimijat osallistuvat katastrofiriskien hallinnointiin ja politiikkaan myös kansallisten rajojen ulkopuolella. Näistä syistä kysymmekin, ”miltä suomalainen katastrofitutkimus ja politiikka voisi näyttää?”. Paneeli on kaksikielinen ja esityksiä voi ehdotta suomeksi ja/tai englanniksi. Paneelin avainteemoja ovat:

- Katastrofiriskien hallinnointi ja hallinta Suomessa
- Suomalaisten toimijoiden rooli kansainvälisessä katastrofiriskien hallinnoinnissa ja hallinnassa
- Katastrofitutkimuksen ja katastrofimaantieteen avainkäsitteet
- Teoreettiset ja metodologiset näkökulmat katastrofitutkimukseen

► Käsitys yksilön vastuusta ja omatoiminen varautuminen sähkökatkoihin

Majja Nikkanen (Helsingin yliopisto), Sanna Malinen (University of Canterbury), Heikki Laurikainen (Huoltovarmuuskeskus)

Tiivistelmää ei julkaista.

Avainsanat: omatoiminen varautuminen, sähkökatkot, vastuukäsitys

► Kokonaisturvallisuus ja riskiarviot katastrofiriskien vähentämisen työkaluna

Taina Hanhikoski (Suomen Pelastusalan Keskusjärjestö, Tampereen yliopisto)

Kansallinen riskiarvio on yksi tärkeimmistä suomalaista varautumista ohjaavista työkaluista. Riskiarviossa kartoitetaan erilaiset ihmisiä, ympäristöä, omaisuutta sekä kriittisiä järjestelmiä ja palveluja uhkaavat riskit, joihin viranomaisten on toiminnassaan varauduttava. Yhteiskunnan turvallisuusstrategian päivityksen yhteydessä vuonna 2017 kansallinen riskiarvio päätettiin laajentaa palvelemaan varautumis- ja valmiussuunnittelua laajemmin. Jatkossa riskiarvio kattaa kaikki yhteiskunnan turvallisuusstrategiassa huomioitut uhkamallit. Riskejä arvioidaan myös ilmastonmuutokseen sopeutumisen näkökulmasta. Kansallisen riskiarvion laatimisen kanssa on samaan aikaan valmisteltu alueelliset riskiarviot, joissa otetaan tarkemmin huomioon alueille ominaiset uhat tai häiriötilanteet. Tarkoitus on, että valtakunnallisen riskiarvion kokonaisuus muodostuu kansallisesta sekä alueellisista riskiarvioista.

Kokonaisturvallisuus puolestaan on suomalaisen varautumisen yhteistoimintamalli, jossa yhteiskunnan elintärkeitä toiminnoista huolehditaan viranomaisten, elinkeinoelämän, järjestöjen ja kansalaisten yhteistyönä. Kokonaisturvallisuuden sanaston mukaan se on

tila, jossa yhteiskunnan elintärkeisiin toimintoihin kohdistuviin uhkiin ja riskeihin on varauduttu.

Riskiarviot tai kokonaisturvallisuus ovat potentiaalisia lähtökohtia katastrofiriskien vähentämisen kehittämiseen Suomessa. Siinä missä ne nykyisellään eivät täysin vastaa laajempaan tarpeeseen esimerkiksi ilmastonmuutoksen ketjuuntuvien ja kumulatiivisten vaikutusten osalta, ne tarjoavat pohjan teeman kokonaisvaltaiseen tarkastelemiseen varautumisen näkökulmasta.

Tässä esityksessä esitellään nämä kaksi konseptia sekä hahmotellaan niiden käyttömahdollisuuksia suomalaisessa katastrofiriskien vähentämisessä. Riskiarvioiden osalta tarkastellaan, millaisia vahinkoja ja kerrannaisvaikutuksia niissä tunnistetaan. Kokonaisturvallisuuden osalta tarkastellaan, miten konseptissa huomioidaan katastrofiriskit. Lisäksi esityksessä selvitetään, mitkä toimijat ovat katastrofiriskien vähentämisen kannalta keskeisiä.

Avainsanat: kokonaisturvallisuus, riskiarvio

► A critical look at participation in climate and disaster governance

Heidi Tuhkanen (University of Helsinki)

Over the last years, the concept of stakeholder participation has been mainstreamed into climate related policymaking and implementation – and its value largely unquestioned. There are ongoing calls for meaningful engagement in and co-creation of climate adaptation, resilience, and disaster risk reduction policies. However, similar to the practice of participation in development practice from the early 2000's, research and practice of participation requires further attention. It is essential to consider whether it is being used primarily as an expected policy planning and implementation instrument or whether it is intended and used to enable societal transformation and decrease societal inequalities. Addressing the underlying driver of societal risks, requires recognising not only the rights and capabilities to be a part of decision making, but also the rights and capabilities to define and shape that participatory space ("power"). In order to explore this further, I am systematically reviewing literature on participation related to the drastic climate adaptation and disaster risk reduction measures of resettlement and managed retreat. Due to the societal implications of moving people out of spaces, it can be assumed that such interventions might have a higher level of engagement and consideration of underlying power dynamics, at least in terms of the research of such practices, if not in the practices themselves. The results are analysed using the dimensions of power as the conceptual framework. As the literature review will still be underway during the conference, my presentation would focus on the concepts and preliminary results.

Keywords: participation, transformation, governance

► Katastrofien keskellä – tiedekeskusnäyttely

Emmi Huhtaniemi (Tiedekeskus Heureka)

Tiedekeskus Heurekan marraskuussa 2021 avautuvan Katastrofien keskellä -näyttelyn aihe on resilienssi, jota tarkastellaan luonnonkatastrofien linssin läpi. Näyttelyn sisällöntuotantoprosessissa on konsultoitu eri katastrofitutkimuksen alojen

ja humanitaarisen avun ammattilaisia. Katastrofiresilienssiin on pyritty löytämään monitieteinen näkökulma, joka puhuttelee tiedekeskuskävijöitä Suomen lisäksi muissa maissa, joissa näyttely mahdollisesti tulee tulevaisuudessa vierailemaan. Näyttelyn keskeisiä kohderyhmiä ovat perheet ja koululaiset, ja aiheen yleistajuistamiseksi katastrofiresilienssi linkitetään näyttelyn kerronnassa kävijöiden arkeen: perustarpeisiin, omaan lähiseutuun ja arjen kysymyksiin. Näyttely ja sitä tukeva koululaisille suunnattu materiaali yleistajuistavat suuria tutkimusteemoja ja globaaleja kysymyksiä, tarjoten myös vastauksia ja kenties lohtuakin ajankohtaisiin huoliin sään ääri-ilmiöiden ja koronapandemian aiheuttaessa epävarmuutta. Materiaalikokonaisuudessa tarkastellaan myös kotimaisten ja kansainvälisten resilienssiä rakentavien toimijoiden ketjua, sekä ohjataan perinteisistä medioiden painotuksista poiketen huomiota ihmisyyteisiin luonnonvoimien sijaan. Näyttelyssä testataan myös uudenlaisia tiedettä ja taidetta yhdistäviä kerronnallisia keinoja.

Avainsanat: tiedeviestintä, katastrofiresilienssi, näyttely

► **Scraps of Hope in Bhuj: Living the Aftermath of the 2001 Kachchh Earthquake Recovery in Gujarat, India**

Marjaana Jauhola (University of Helsinki), Shyam Gadhavi (Prakrit Foundation for Development)

This paper argues that responses to pandemics such as COVID-19, or other disasters, should learn from the decades long grassroots knowledge production on inequalities, and theorising on social, political and economic vulnerabilities and precariousness, and systemic discrimination that recovery policies entail.

The paper provides analysis of the recovery, the aftermath of the 2001 Gujarat earthquake, popularly narrated as "astonishing rise from the rubble", a best practice promoted by the Indian government and international organisations for successful disaster recovery model and disaster recovery architecture for India, South Asian region, and global consumption, the Indian COVID-19 response included.

The focus in this paper is on urban ethnographic lifehistorical study of the shadows of this success, located in an urban neighbourhood established in 2001 as one of the temporary shelter locations in West Kutch district in which 60-70 percent of the urban housing was destroyed in the earthquake.

In the presentation, we enter this discussion by visiting the urban neighbourhood through a short-video screening introducing the landscape and some of its residents.

Keywords: disaster recovery, lifehistories, visual methods, inequalities

► **Critical geographies of humanitarian logistics: a view from the Nordic countries**

Elisa Pascucci (University of Helsinki)

A growing sub-discipline within supply-chain management and engineering, humanitarian logistics has received relatively little attention in human geography. Existing literature engages the geopolitical relevance of humanitarian logistics in specific regional geographies, such as the Middle East, and critically examines the military and imperial legacies of this managerial science and practice. Questions like the role of private sector

logistics actors in shaping the geographies of development and humanitarian relief, and the relation between logistics and processes of digitalization and “datafication” of aid, however, remain less explored. Considering these and other related issues, this presentation asks what a critical engagement with humanitarian logistics in geography may look like, particularly from/within Finland and the Nordic countries. It discusses empirical examples from three main areas of inquiry: Nordic architecture start-ups and social enterprises working on emergency shelter, corporate social responsibility and humanitarian imaginaries in the commercial logistics sector, and the role of business schools in training humanitarian logisticians and managers. Engaging the theme of the conference, the presentation concludes by critically reflecting on the “solutions” offered by humanitarian logistics, and asking what alternative approaches to socio-political crises may emerge from/through geography.

Keywords: humanitarian logistics, critical geography, management, Nordic countries

4 Climate intervention – a phenomenon of the Anthropocene

Session leader: Ilona Mettiäinen (University of Lapland)

Climate engineering, climate intervention and geoengineering are names referring to a set of emerging technologies that are currently developed to complement the toolbox for the fight against climate change. Climate intervention is essentially a phenomenon of the Anthropocene. Whereas climate change has shown that humans are capable of unintentionally altering the climate of our planet, geoengineering has been suggested as a strategy to buy time for efficient mitigation measures to reduce the amount of greenhouse gases in the atmosphere. However, the impacts of different deployment options are distributed unevenly, and it is also feared that the introduction of climate intervention technologies may reduce the political will to climate change mitigation. Climate intervention can take place by various methods from solar radiation management to carbon dioxide removal, and targeted methods such as ice sheet conservation. Besides the technological aspects, also the governance of geoengineering is currently studied and developed.

This session welcomes presentations that discuss all forms of climate intervention from any of the following viewpoints: governance, design of implementation options, ethics, technological development, public perceptions, co-production of knowledge, climate interventions as a strategy to deal with climate change, and many more.

► Thawing a frosty relationship? Safeguarding the participatory rights of Arctic Indigenous peoples in the context of developing geoengineering governance

Aaron M. Cooper (University of Eastern Finland, Coventry University)

The potential implementation of geoengineering in the Arctic could have a profound effect on its Indigenous peoples. These technological interventions may have consequences that directly affect their environment, so consent is vital. As research is furthered, the Arctic states (and the Arctic Council) are faced with the challenge of achieving local consent on a matter with global consequences. A potential first step is to examine the right to free prior and informed consent (FPIC), considering to what

extent the right could be affected by the development of geoengineering governance? At the international level, the legal framework for FPIC is well recognized. But there are some ambiguities concerning the precise content and requirements of the FPIC. As non-state actors engage with geoengineering research and development, there are legitimate concerns raised over transparency, indigenous consent, and procedural justice where the implementation of geoengineering is concerned. Especially as research thus far shows that there has been very limited dialogue and engagement on geoengineering research and development with Arctic Indigenous peoples. Against this background, the paper examines geoengineering governance and how its implementation in the Arctic may affect Indigenous participation. The paper concludes by offering some considerations regarding the role of the Arctic Council. Which as an intergovernmental forum, could have a vital role to play in safeguarding Indigenous participatory rights.

Keywords: power, Geoengineering, indigenous, consent

► Politically relevant solar geoengineering scenarios

Andrew Lockley (University College London), Yangyang Xu (Department of Atmospheric Sciences, College of Geosciences, Texas A&M University), Simone Tilmes (Atmospheric Chemistry Observations and Modeling, National Center for Atmospheric Research, Boulder Colorado), Masahiro Sugiyama (Institute for Future Initiatives, University of Tokyo), Dale Rothman (Department of Computational and Data Sciences, George Mason University), Adrian Hines (Fenner School of Environment and Society, Australian National University)

Solar geoengineering, also known as Solar Radiation Modification (SRM), has been proposed to alter Earth's radiative balance to reduce the effects of anthropogenic climate change. SRM has been identified as a vital research priority, as it has been shown to effectively reduce surface temperatures, while substantial uncertainties remain around side effects and impacts. Global modeling studies of SRM have often relied on idealized scenarios to understand the physical processes of interventions and their widespread impacts. These extreme or idealized scenarios are not directly policy-relevant and are often physically implausible (such as imposing global solar reduction to counter the warming of an instantaneous quadrupling of CO₂). The climatic and ecological impacts of politically relevant and potentially plausible SRM approaches have rarely been modeled and assessed. Nevertheless, commentators and policymakers often falsely assume that idealized or extreme scenarios are proposed solutions to climate change.

This paper proposes 18 scenarios that appear to be broadly plausible from political and Earth System perspectives. We categorize these scenarios into four distinct strategic contexts: (1) Global Management; (2) Regional Emergencies; (3) Coordinated Regional Interventions; and (4) Reactive Global Interventions. For each scenario, relevant model experiments are proposed. Some may be performed with existing setups of global climate models, while others require further specification. Developing and performing these model experiments – and assessing likely resulting impacts on society and ecosystems – would help inform public debate and policymakers on the real-world issues surrounding SRM.

Keywords: climate change, climate intervention, emergency response, scenarios, solar radiation management

► Targeted interventions for conserving the cryosphere – local interventions with global implications

Ilona Mettiäinen (Arctic Centre, University of Lapland), *Michael Wolovick* (Beijing Normal University), *Liyun Zhao* (Beijing Normal University, Southern Marine Science and Engineering Guangdong Laboratory (Zhuhai)), *Rupert Gladstone* (Arctic Centre, University of Lapland), *Ying Chen* (Chinese Academy of Social Sciences), *Stefan Kirchner* (Arctic Centre, University of Lapland), *Timo Koivurova* (Arctic Centre, University of Lapland)

Abstract is not published.

Keywords: targeted intervention, governance, cryosphere

► Solar climate intervention to reduce future risk of ‘Day Zero’ level droughts in Cape Town

Romari Odoulami (African Climate and Development Initiative, University of Cape Town), *Mark New* (African Climate and Development Initiative, University of Cape Town), *Piotr Wolski* (Climate System Analysis Group, University of Cape Town), *Gregory Guillemet* (Institut National de Sciences Appliquées, Lyon), *Izidine Pinto* (Climate System Analysis Group, University of Cape Town), *Christopher Lennard* (Climate System Analysis Group, University of Cape Town), *Helene Muri* (Department of Energy and Process Engineering, Industrial Ecology Programme, Norwegian University of Science and Technology), *Simone Tilmes* (Atmospheric Chemistry, Observations, and Modeling Laboratory, National Center for Atmospheric Research, USA)

Human-induced climate change has increased the likelihood of the 2015-2017 Cape Town drought - also known as the ‘Day Zero’ drought - by a factor of three. This risk is projected to continue to increase in the future with anthropogenic warming. This study examines the potential of solar climate intervention (SCI) through the injection of sulfate aerosols into the stratosphere to reduce the risk of ‘Day Zero’ drought events in a future with a very high emission scenario as simulated by the Stratospheric Aerosol Geoengineering Large Ensemble (GLENS) Project. We find that using SCI to maintain the global mean temperature at 2020’s level would reduce the projected increased risk in ‘Day Zero’ level droughts in Cape Town by about 90% near the end of the century, maintaining the risk of such events in the range of the present-day climate. This change in risk of ‘Day Zero’ level droughts can be explained by the role of SCI in keeping precipitation and its main drivers (westerlies) as in the present day. Full details of this work can be found in Odoulami et al. (2020) Stratospheric Aerosol Geoengineering could lower future risk of ‘Day Zero’ level droughts in Cape Town. *Environ. Res. Lett.* 15, 124007. <https://doi.org/10.1088/1748-9326/abbf13>.

► Uncertainties in estimating radiative and climate impacts of stratospheric sulfur injections

Anton Laakso (Finnish Meteorological Institute), *Ulrike Niemeier* (Max Planck Institute for Meteorology), *Daniele Vioni* (Cornell University), *Simone Tilmes* (National Center for Atmospheric Research), *Harri Kokkola* (Finnish Meteorological Institute)

Injecting sulfur dioxide into the stratosphere with the intent to create an artificial reflective aerosol layer is one of the most studied options for climate intervention.

Estimations of cooling potential and climate impacts of aerosol injections are based on climate model simulations which show significant diversity in the results between different models. Here we have studied how radiative impacts of aerosol injections are depending on the aerosol model which is used to simulate aerosol fields. We modelled how these radiative impacts translate to temperature and precipitation changes by using three different climate models. Our simulations showed that the required amount of yearly injected sulfur to compensate for warming caused by doubling of preindustrial CO₂ concentration varied from 6 to 25 Tg(S)/yr depending on which climate and aerosol models are used. Simultaneously global mean precipitation decreased by 0.76 - 2.85 %. These results show significant uncertainties in cooling potential and large scale climate impacts which can be considered the basis for geoengineering.

Keywords: geoengineering, climate modelling, aerosols

► Co-producing scientific knowledge on climate geoengineering with communities in the Arctic

Ilona Mettäinen (Arctic Centre, University of Lapland), *Holly J. Buck* (Cornell University), *Katharine Ricke* (UC San Diego), *Douglas G. MacMartin*

Abstract is not published.

Keywords: solar geoengineering, Arctic, public engagement, co-production of knowledge

6 (Re-)assembling small town geographies

Session leaders: *Moritz Albrecht* (University of Eastern Finland), *Maija Halonen* (University of Eastern Finland), *Jarmo Kortelainen* (University of Eastern Finland)

Small towns and rural centres (Finnish *Taajama*) provide a living environment and services for one third of the Finnish population. Yet, research on small towns is fragmented, and regional policies focus either on sparsely populated areas or larger cities matching poorly with small town characteristics. Lack of research on European small towns has spurred calls for new, clearly focused studies. The session gathers research on the social, spatial and cultural transformations of small towns (not restricted by administrative classifications), their livelihoods, politics and planning, demographics, cultures and the diversification of their economies. With many small towns experiencing socio-economic challenges such as shrinkage, a focused geographical analysis into the assembling processes of these localities provides a scientific framework to design solutions for future developments and their role in an urbanizing society.

Local (case) studies on development and planning, community activities/involvement, economic transition or national/regional policy in small urban localities are examples of interest in this session but the scope is not limited to them. Considering conceptualizations related to local assembling processes (e.g. Woods 2016; Kortelainen & Albrecht 2020) as particular suited for a comprehensive understanding of small towns the session is open to all approaches aiming to understand their socio-spatial processes.

► **Unbuilding (at) the Nordic periphery: A shrinking Finnish taajama as a site for critical urban theory?**

Heini-Emilia Saari (London School of Economics and Political Science)

Abstract is not published.

Keywords: postcolonial urban theory, urbanization, periphery, taajama, unbuilding

► **Recoding of an industrial small-town: bioeconomy hype as a cure from decline (the story continuous...)**

Moritz Albrecht (University of Eastern Finland, University of Koblenz-Landau), *Jarmo Kortelainen* (University of Eastern Finland)

Based on our recent paper (Albrecht & Kortelainen 2020) the presentation discusses placemaking in Äänekoski, a small Finnish industrial town, by analyzing how the local government utilizes a recent large-scale bioeconomy investment in its attempts to reinvent the town, and how components of place conform to the image building 'script'. Based on assemblage concept it presents Äänekoski as a combination of material and expressive properties, forces of (de-)territorialization, acts of (de-/re-)coding and relations of exteriority. Äänekoski was known as a shrinking mill town before Metsä Group Corporation decided to build a bio-production complex there in 2014. We analyze how the local government attempts to recode the town with the help of bioeconomy-based place branding, town planning and extensive material investments in the townscape. Despite support from the national 'bioeconomy hype' and political narratives, several material, expressive and deterritorializing elements (e.g. declining population, unemployment, environmental debates) have so far worked against this growth-oriented recoding.

In the face of new investment decisions by Metsä Group in 2021, sparking another wave of bioeconomy prosperity narratives in Äänekoski and beyond, the presentation finally aims to critically assess our previous research findings in light of these new developments and their underlying narratives for the potential regeneration of small-towns. We thereby draw critical conclusions on small and industrial town image building and development, but also on the selective use of material and expressive components in place based narrative reproduction that prevail in small-town branding.

Keywords: small town branding, bioeconomy, assemblage, Äänekoski

► **Kaupungistumisen politiikasta**

Ilppo Soininvaara (Helsingin yliopisto)

Esityksessä tarkastellaan kaupungistumista poliittis-strategisena prosessina, ja hahmotellaan sen vaikutuksia ja ilmenemistä valtiomuutoksen näkökulmasta. Kaupungistumista lähestytään siihen liittyvän kielen, erilaisten poliittisten järkeilyjen ja narratiivien kautta, ja piirretään näin kuvaa kaupungistumisen poliittisesta puhunnasta. Tästä juontuu kaupungistumisen politiikan suomalainen "peruskuvasto", erilaisten asioiden de-politisointi ja politisointi hegemonisiksi tai haastetuiksi ymmärryksiksi, jotka ohjaavat politiikantekoa laaja-alaisesti. Tätä pohjaa tarkastellaan muutamien esimerkkien kautta. Ensinnäkin tarkastellaan suomalaisen alueellisen hierarkianmuodostuksen

kehittymistä ja siihen liittyviä järjelyjä, ja lopuksi viitataan kaupungistumispuheessa sivuun jäävien alueiden (tässä Seutukaupunkien) tilanteeseen osana muuttuvia tilallis-poliittisia strategioita.

Avainsanat: kaupungistuminen, politiikka, narratiivit

7 European Green Deal for circular economy and green energy

Session leaders: Erja Kettunen-Matilainen (University of Turku), Antti Mäenpää (University of Vaasa)

Sustainable development has for decades been on the agenda of international negotiations within the United Nations, General Agreement on Tariffs and Trade, and World Trade Organization. What started in the 1960s as a civil society movement on environmental awareness, has evolved in the 2020s to an all-embracing need to respond to climate change. Today, not only governments but also companies, universities, non-governmental organizations, and the civil society take part as stakeholders in defining, negotiating, and implementing actions for sustainable development. This negotiation “or bargaining” takes place between stakeholders at different scales ranging from local to national and international. In this session, we study the European Green Deal including its origins, aims and outcomes. Papers are invited that address the strategies, policies and actions at various scales aiming at a green transition. How has the multiple-actor bargaining led to current objectives? What kinds of policy tools are developed regionally? How are industries responding? Topics may include sustainable industry and services, energy efficiency, and circular economy, among others.

► Green transition of regional activities: transformation or destabilization?

Seija Virkkala (University of Vaasa)

A deep transition of society is needed to achieve a society with zero net greenhouse emission. The European Green Deal is one effort to green transition. However, transition happens in regions, and needs clear bottom up and regional level enabling strategies. The paper refers to the multi-level perspective from Geels and Schot (2010) and examines green transition – a new relation between humans, energy, and nature – as a configuration of technological regimes, in which three related processes are involved:

- 1 The external context, referred to as landscapes.
- 2 The configuration of the regional networks of actors and innovation, referred to as regime, including energy, food and mobility systems
- 3 Bottom up innovation processes (niches).

The transition occurs, when: (a) The niche-innovations gradual grow, (b) niche-innovations and landscape changes (like European green deal) create pressure on the regime, and (c) destabilization of the regime creates windows of opportunity for niche-innovations, which then diffuse and disrupt the existing system. Unsustainable practices, technologies and solutions need to be phased out and replaced by sustainable ones. (Geels 2019)

The paper examines how the environmental experts in six regions around Baltic Sea state green transition and in what degree the paths to the sustainable society consists of destabilization or transformation of the existing activities. Four different paths were identified in Finland, Sweden, Lithuania and Latvia. The analysis on transition processes and institutional dynamics was made in project GRETA (Green Transformation! A policy tool for Regional Smart Specialization) founded by Interreg Baltic Sea program.

Keywords: green transition, regions, development path

► Role of public organisations in green transformation:

Lessons learned from Ostrobothnia

Antti Mäenpää (University of Vaasa), Seija Virkkala (University of Vaasa), Åge Mariussen (University of Vaasa), Juuso Jääskeläinen (University of Vaasa)

Green Deal implementation is beginning alongside the new programming period and smart specialisation is taking a new turn towards greener solutions (McCann & Soete 2021). Different types of regions are now looking at green transformation and aligning towards these more sustainable goals. This raises the question on how can public organisations enable green transformation and what is their role in this? This paper looks at the case from Ostrobothnia, which was studied in Interreg Baltic Sea project GRETA (Green Transformation! A policy tool for Regional Smart Specialization).

The paper refers to the multi-level perspective from Geels and Schot (2010) and looks on how two different industries have been developing in the region. Energy technology cluster is well known in the region and has a lot of potential to gain from Green Transformation. Circular economy on the other hand is not yet as strong and requires support in order to become self-sustainable. Some recent battery industry developments may offer new boost for enabling circular economy actions.

The role of public organisations in the two cases are interesting, as energy cluster is clearly looking for more ways on how to enable public-private partnerships, even if the cluster is already well established, whereas circular economy development needs public support in order to form a functional system. These two cases highlight the need for more active public sector intervention in order to enable green transformation and this may indicate a new trend also for smart specialisation implementation.

Keywords: Green Deal, Green transformation, Smart specialisation

► Towards the European aim of sustainable industry:

Multi-stakeholder bargaining for circular economy

Erja Kettunen (University of Turku)

The European Green Deal, introduced in 2020, includes an action plan for circular economy that focuses on sustainable resource use. The plan is based on a broader aim of sustainable industry to achieve the climate and environmental goals of the European Union (EU) by reducing and reusing materials and preventing environmentally harmful products. This paper focuses on the process of formulating the aim among and between the EU bodies, member states, industry organizations, and companies representing the key industries of circular economy. Taking Finland and Finnish industries

as an example, the paper examines this process as a multi-scalar and multi-stakeholder bargaining between the EU, the member state, its industry organizations/federations and firms in key industries, such as textiles and clothing, plastics, and construction. The aim is to explore the participation of Finnish firms in communicating the aims for sustainable industry in this multi-scalar context. Based on published materials and interviews of policymakers and industry representatives, it is found that (1) there are differences between industries in the level of activity, (2) their communication networks take many forms, such as company-to-industry organization, company-to-Member of European Parliament, or industry organization-to-European Commission, where the Finnish Textile & Fashion is very active, and (3) they have different kinds of action networks, such as one between the state, municipalities, and industry organizations. An example of the latter is the Green Deal agreement on construction plastics among the Ministry of Environment, Finnish municipalities, and seven industry organizations related to plastics and construction.

Keywords: sustainable industry, circular economy, bargaining, Green Deal

8 The spatiality of critical sustainability

Session leaders: Janne Salovaara (University of Helsinki), Sophia Hagolani-Albov (University of Helsinki)

Sustainability is often utilized as a framing mechanism for the transitions that society needs to undertake to remake our anthropocentric world system. However, transitions as they manifest in our day to day activities usually take place locally or on a micro-scale, while the rhetoric of sustainability describes macro-level processes and often narrates changes that would be better described as reformative rather than transformative. We turn a critical eye to the project of sustainability and ask questions including: who is the sustainable transition actually for; at what scale can sustainability be enacted; and what are the spatial dimensions that contribute to a rooted sustainable transition?

This session invites interventions that critically evaluate sustainability as it is rolled out in place. This includes approaches that go below the surface to uncover systematic greenwashing, or the public relations tactics used to hide the local dimensions and impacts of sustainable projects. We want to tease out the systemic strategies used to implement sustainability that incorporates the economic, social, and environmental. The interventions and ideas expressed in this session can take many forms e.g. facilitated discussion, paper presentation, or an artistic expression, whatever form best supports the content and aims of the ideas.

► Sustainability transition from macro policies to regional practices?

Development actors' perspective on forest bioeconomy

Maija Halonen (University of Eastern Finland), Annukka Näyhä (Jyväskylä University School of Business and Economics, Jyväskylä University School of Resource Wisdom), Irene Kuhmonen (Jyväskylä University School of Business and Economics, Jyväskylä University School of Resource Wisdom)

Abstract is not published.

Keywords: sustainability transition, forest bioeconomy, policy, periphery, regional development actors, critical discourse analysis

► **Winners and losers of sustainable urban development: Environmental gentrification and residential differentiation in an affluent Nordic city**

Antti Wallin (Tampere University)

The idea of sustainable urban development integrates cities' economic aspirations with the global calls to meet sustainable development. Research shows that sustainable urban development measures, such as redeveloping brownfields, urban densification, urban greening, low-carbon transit systems and resilience infrastructures, benefit the well-off. Sustainable urban development investments are distributed unevenly to different neighbourhoods and different population groups, even in the most affluent cities of the global North. Rising real-estate prices and living costs cause the displacement of working classes and vulnerable groups from the sustainable city.

My presentation discusses environmental gentrification and sustainability-based residential differentiation. At first, I will review the recent literature on environmental gentrification. Secondly, I will present preliminary findings from an affluent Nordic city, Tampere, Finland. Year after year, Tampere is voted as the most desirable city to live in Finland. As the city grows, the value of some distinct neighbourhoods rises, such as brownfields redeveloped into high-class housing, inner-city neighbourhoods that enable “sustainable” lifestyles, and historically protected neighbourhoods with good scenic and environmental amenities.

Environmental gentrification increases the uniform social structure of distinguished neighbourhoods and decreases opportunities for social diversification in urban planning. Yet, we do not know much what the social effects of sustainability-based residential differentiation on the city-level are. Are the affluent population groups the main beneficiaries of sustainable urban development are cities expected to experience sustainability-based urban segregation? I will conclude my presentation to present my future research aspirations.

Keywords: sustainable urban development, environmental gentrification, displacement, urban segregation, residential differentiation

► **Revenue Management**

Primi Suharmadhi Putri (University of Oulu)

Transparency initiatives in the extractive sector often target the governance reforms for better natural resources and its associated revenue management at the national level. It posits that disclosing resource-related information will empower the citizens to make informed assessments and holding the powerful actors accountable leading to better natural resource governance. However, the disclosure mechanism and information it produces have been unable to provoke active citizenry and assist the transformative effect on natural resource governance at the local level. Recently, there has been renewed interest in integrating transparency mechanisms at the subnational level. To understand whether and how a locally designed transparency initiative can assist local socio-environmental priorities and economic developments and facilitate communities' issues in hand regarding natural resource and revenue management, we must simultaneously focus on the needs and rationals of the citizens and government responses alongside access to salient information. Reflecting on previous observation on subnationally designed and implemented transparency initiatives in a resource-rich district in Indonesia, contextual

settings, normative rationales, and institutional structure can work for or against transparency mechanism to achieve its intended outcomes. How did the narrative of transparency for better natural resources captured in local policies? How the needs and experiences of local communities integrated in the design of transparency mechanism? And how the public-decisionmakers response and act on citizens needs and concerns?

Keywords: transparency, natural resources, revenue management, subnational, Indonesia

► Sustenance of sustainabilities in nature-based tourism and protected areas

Aapo Lunden (University of Oulu)

Sustainability is one of the catchwords of the tourism sector operating in fragile environments, such as protected areas in the Arctic. Traditionally, tourism has been seen as a vehicle of development in rural areas. Moreover, within the context of conservation, nature-based tourism is ideally in a mutualist and symbiotic relationship with protected areas. This symbiotic ideal is based on a utilitarian idea, where tourism benefits from the “resource” provided by protected areas, while the protected areas earn public support (e.g., funding) and legitimation through tourism and visitation. In addition, in Finland and other Nordic countries, the ethos of public lands and waters is based on “everyman’s rights”, giving universal access and specific understanding of a “commons” type of nature-relationship within its citizens (although access is not limited to only citizens).

By drawing from ongoing research analysing governance and sustainability frameworks of protected areas and tourism in Finland, more pronouncedly in Northern Finland, the presentation looks at how tourism growth trajectories are maintained in tourism development abreast with a diversity of “mitigation rhetoric” (e.g., sustainability, responsible, smart tourism). Examples are drawn from policy documents of Parks & Wildlife, national parks, and Destination Management Organizations on sustainability visions are sustained although actually existing unsustainabilities stay in the core of the sector (e.g., flying, overtourism, land use).

Finally, the role institutional myths (state as nature’s steward, symbiosis, universal access to nature, tourism vs. “heavier” industries), institutional legitimation (need to perform sustainability as a strategic goal) and spatial manoeuvres (borders of responsibility, delimiting spheres and scales of focus) are discussed. The main question of the presentation deals with the messy regulatory and accountability landscape of tourism governance, sustainability and the gap between strategies and implementation; how meaningful are sustainability visions in the sector? What are they capable of? What do they legitimise or redirect?

Keywords: critical sustainability, tourism governance, institutional myths, protected areas, floating signifiers

10 Feminist perspectives on urban planning and regional development: Towards more just, sustainable and inclusive societies

Session leaders: Marika Kettunen (University of Oulu), Milla Kallio (FEMMA Planning), Efe Ogbeide (FEMMA Planning)

Resolving the ecological crises and regional inequalities of our time requires that the planning and development practices of cities and regions must change as well. Feminist urban planning aims to tackle these challenges by taking into account the different experiences and everyday realities of residents, highlighting structural inequalities and seeking to dismantle existing power structures. In a similar manner, feminist approaches to regional development and policy have begun to highlight topics such as gender equality, inclusion, participation and, for example, the need to diversify our understandings of regional vitality.

This working group invites researchers, students, developers, citizens and activists to outline the current state and future of feminist urban planning and regional development:

- What does feminist and critical geography have to offer for urban and regional development research?
- What does a feminist perspective bring to developing different, and even differentiating, cities, municipalities, neighbourhoods, villages and regions?
- How to take into account diversity, intersectionality and equality?
- How to give a voice to those traditionally left voiceless or outside the decision-making processes?
- What geographies of more just, sustainable, and inclusive solutions may emerge, or what contradictions are associated with these development trajectories?

We invite contributions that look at the themes of feminist and critical urban and regional planning and development in a broad sense. Presentations can be based on development projects and practice as well as theoretical or empirical research perspectives. We also welcome informal speeches and openings for debate.

► The far-right on ice: Feminist perspectives on Arctic development and nation-building in the context of far-right politics in Russia

Sonja Pietiläinen (University of Oulu)

Climate catastrophe already impacts natural and human systems, and urgent action is needed to limit warming and avoid more extensive climate-related risks. Yet far-right parties and organisations around the world are pouring doubt on climate change slowing down climate mitigation. The far-right's climate denialism is particularly apparent in the context of the development strategies of the Arctic region in Russia. Indeed, the far-right in Russia celebrates melting ice and warming temperatures as it will - in their view - benefit the economy and the Russian nation. In the backlight of the far-right's ethno-national and anti-feminist political profile, it is of immense importance to examine racial and gendered dimensions of the far-right's 'nation'. Indeed, various gendered and racial visions of a nation are used in producing and reproducing a nation,

mutually constructing hierarchical social relations and power inequalities.

The presentation bases on empirical research on visual Arctic politics of Izborskii Club, one of the most prominent far-right organisations in Russia. The purpose of the research was to examine the construction of subjectivities to lead regional development of the Arctic – the region that is home to tens of thousands of Indigenous Peoples and massive untapped hydrocarbon resources. Drawing on feminist and visual geographies, I conducted iconographic analysis that examined how subjectivities are constructed and legitimized in images regarding the Arctic region. Indeed, how we picture geographical spaces, and their natures and peoples is of significant political importance because it constructs identities and redistributes political agencies.

The results show that racial national and gender identities were constituted mutually as nation-building was linked with white masculinity and masculinity linked with nation-building. The club's visual communications linked subjectivities to white male actors as they were narrated as brave and rational builders of the nation whilst women and Indigenous people were absent and thus left voiceless. As such, in the context of Russian far-right, the Arctic regional development was based on exclusive visions of nationalism that excluded non-male and indigenous voices from the decision making.

Keywords: feminist geography, the Arctic, nation-building, hydrocarbons, iconography

► Tietotyön sukupuolittunut maantiede?

Kirsi Siltanen (MDI Public Oy), Rasmus Aro (MDI Public Oy)

Usko paikkariippumattoman tietotyön aluekehitystä tasaavaan vaikutukseen on saanut nostetta pandemia-ajan myötä. Tuoreet tiedot kertovat kuitenkin, ettei odotuksella ole toistaiseksi katetta. Etätyötä tehtiin Korona-aikaan eniten Uudellamaalla ja vähiten Pohjois- ja Itä-Suomessa. (Kovalainen ym. 2021). Yksi syy toteutumattomiin odotuksiin on rajallisessa ymmärryksessä tietotyön reunaehdoista. UUTTU-hankkeessa tarkastellaan koulutuksen ja työelämän sukupuolisegregaatiota sekä uuden työn mahdollisuuksia ja ohjauskeinoja maaseudulla naisten näkökulmasta. Keskeinen kysymys on: Mitkä tekijät edistävät tai jarruttavat uuden työn mahdollisuuksia maaseudulla naisten näkökulmasta?

Käsitlemme esityksessä hankkeen ensimmäisen vaiheen tuloksia, jotka pohjautuvat kirjallisuuskatsaukseen sekä tilastoanalyysiin. Uusi työ on kattokäsite, joka kuvaa laajaa joukkoa 2000-luvun työelämälle ja työn tekemiselle tyypillisiä piirteitä. Tällaisia ovat esimerkiksi affektisoituminen, prekarisoituminen, tietoisuminen, subjektivoituminen ja henkilökohtaistuminen. Uudella työllä viitataan kuitenkin monesti työn ja tuotannon rakennemuutokseen, joka liittyy tietointensiiviseen ja tietotekniseen työhön. Keskitymme tarkastelussa erityisesti tietotyön näkökulmaan osana naisten uuden työn mahdollisuuksia maaseudulla.

Tilastoanalyysissa tunnistettiin, että naisten tietotyö nojaa hyvin vahvasti koulutuksen alalla tehtyyn työhön. Erityisesti tämä korostuu maaseutualueilla. Naisten tietotyö ilman koulutusala on hyvin vahvasti kaupunkialueiden ilmiö. Tietotyötä tekevien määrä kasvoi kaupunkialueilla voimakkaasti, kun taas maaseutualueilla tietotyötä tekevien naisten määrä väheni merkittävästi. Muutos on sekä määrällinen että suhteellinen. Tietotyötä tekevien naisten osuus työllisistä supistui maaseutualueilla vuosien 2007–2018 aikana. Yhtenä taustatekijänä on tietotyön kasvava sukupuolittuneisuus. Tietotyötä tekevien naisten määrä kasvoi merkittävästi vähemmän kun tietotyötä tekevien miesten määrä vuosien 2007–2018 aikana.

Naisnäkökulmalla on oma perinteensä niin maaseudun kuin työelämänkin tutkimuksessa. Tietotyön ja aluekehityksen tutkimuksen sukupuolisokeus on kuitenkin merkillepantavaa. Tämä kätkee kehityskulkuja, jotka ovat toimintapolitiikkojen kannalta merkittäviä. Hankkeen seuraavissa vaiheissa tarkastellaankin tapaustutkimusten ja kyselyjen avulla tarkemmin niitä edellytyksiä, joita naisten tietotyö maaseudulla edellyttää.

Asiasanat: tietotyö, sukupuolisegregatio, aluekehitys

► Intersektionaalinen lähestymistapa osallistavassa kaupunkisuunnittelussa

Milla Kallio (FEMMA Planning), Efe Ogbeide (FEMMA Planning)

Nykyistä feminististä lähestymistapaa määrittää vahvasti intersektionaalisuus. Intersektionaalisuudella viitataan siihen, että ihmisten kokemukseen arjessa vaikuttaa useampi tekijä sukupuolen lisäksi, näitä voivat olla esimerkiksi seksuaalisuus, koulutus, sosioekonominen asema, etnisyys, sosiaalinen pääoma tai toimintakyky. Nämä tekijät risteävät eri tilanteissa tai paikoissa eri tavoin.

Kaupunkisuunnittelun osallistavissa menetelmissä on paikoin pyritty ottamaan erilaisia taustatekijöitä huomioon. Yhä edelleen osallisuutta hallitsee kuitenkin keskittyminen keskiarvon täyttävään kansalaiseen ja heidän tarpeisiinsa, sulkien ulos paljon ihmisiä. Ulossulkemisen seurauksena monien ihmisten tarpeita ja toiveita ei ymmärretä ja osata näin ollen ottaa kaupunkisuunnittelussa huomioon. Kaupunkisuunnittelun tulisi kuitenkin pystyä vastaamaan laajemmin ihmisten tarpeisiin ja yhdenvertaisesti tukea asukkaiden arkea, sen sujuvuutta ja yhdenvertaisia mahdollisuuksia.

Millaisia esimerkkejä intersektionaalisesta lähestymistavasta osallisuudessa ja suunnittelussa voidaan nähdä ja millaisin työkaluin intersektionaalisuutta voitaisiin kaupunkisuunnittelun kontekstissa hyödyntää? Esimerkkejä käsitellään esityksessä FEMMA Planningin omien projektien sekä maailmalta kerättyjen tapausesimerkkien kautta.

Asiasanat: intersektionaalisuus, osallistava kaupunkisuunnittelu, inklusiivisuus

► The making of Feminist Futures Helsinki hackathon & Perspectives on Urban Futures

Henriette Friis (Aalto University), Eva Duran Sánchez (Aalto University)

This session will share learnings from the Feminist Futures Helsinki (FFH) hackathon 2021, a feminist hackathon organised in May 2021 in Helsinki, Finland. The FFH hackathon saw 50 participants and more than 20 partners and mentors, primarily based in Finland, come together to imagine feminist futures for Finnish society within four thematic tracks: Urban Futures, Inclusive Futures, Eco-Justice Futures, and Well-Being Futures. In this session, we will explore insights from the three projects in the Urban futures track: Inclusive Lapinlahti (in collaboration with Lapinlahden Lähde), Cities built for all and Loneliness-free cities (in collaboration with FEMMA Planning). In addition, we will discuss the potentials found at the intersection between feminism(s), urban planning, participatory design approaches and hackathons as co-creation events. The research of these four domains was also the base for the Aalto University master's thesis that the speakers co-wrote together, named "Feminist Futures Helsinki hackathon: Transdisciplinary co-creation of socially engaged projects".

Although hackathons are nowadays popular events for innovation and co-creation, they have also been criticised for being tech-solutionist and encouraging of a culture of exclusion. In this session, as co-organisers of the FFH hackathon, we will explain what design principles were followed to make the event more inclusive of different experiences and driven by values such as accessibility and pursuit of justice. Finally, we will discuss some of the possibilities that feminist hackathons can bring to conversations on how we develop our societies.

Keywords: feminist hackathons, participatory methods, urban futures

► in/visible presence of Russian speakers in Finland

Daria Tarkhova (University of Helsinki), *Vadim Romashov* (Tampere University)

Russian speakers, just as other so-called foreign-language groups, are often described to be passive or unwilling to participate in public life, therefore “invisible” (Varjonen, Zamiatin and Rinas 2017, 64). We consider in/visibility a more complex phenomenon that is not solely dependent on one’s decision to become invisible, although in/visibility as practice can be a part of social life tactics. In/visibility is contingent on the power relations emerging between those who are supposed to integrate (visioned) and the hegemonic entity they are supposed to integrate to (visioning). Moreover, visibility and invisibility intersect. For example, the way media represents Russian speakers in relation to national security (Davydova-Minguet & Oivo, 2019) makes them rather ‘hypervisible’ despite articulating their ‘passivity’ to integrate into Finnish society. Hegemonic discourses related to Russia as a state articulate ‘hostility,’ ‘aggression,’ and ‘non-Westerness,’ and thus forming certain stigmas that heavily affect the everyday lives of Russian speakers, including those of them who not even originally come from Russia. This project aspires to contribute to understanding of the effects such hegemonic concepts have on the processes of in/visibility (that is becoming visible or invisible in the space controlled by the visioning body). Our empirical focus is on both the everyday practices of Russian speakers in urban public spaces and their identity construction. Our research that employs the original concept of in/visibility will provide a new perspective to studying ‘foreign-language’ groups and eventually produce knowledge useful in building more inclusive societies.

Keywords: public spaces, minorities

► Institutional and agentic perspectives on regional development

Eeva-Kaisa Prokkola (University of Oulu), *Fredriika Jakola* (University of Oulu)

Human geographers and regional and planning studies scholars have started to pay considerable attention to human agency and how the strategic interests of various actors influence regional planning and development while simultaneously recognizing the regional institutional structures that support and restrict the processes associated with regional development. This presentation focuses on the agentic capacities of municipal actors in the Structural Fund (SF) initiatives. Municipal actors are active participants concerning regional development; however, their actions as part of the SF are in many ways supported and restricted by dynamic regional and multi-scalar institutional structures.

The examination shows how the agency and power of the municipal agents are played out in the microenvironment of SF based regional development in relation to 1) knowledge, 2) social relations, and 3) local environment and resources. The study is based on the material collected in 2020 in a Municipal Development Foundation funded project.

Keywords: agency, regional development, structural funds

12 Promises and Challenges of Future Technologies in Human Geographical Research

Session leaders: Thomas Behrndt (University of Turku), Johanna Hautala (University of Vaasa), Liisa Mäkinen (University of Turku), Roosa Wingström (University of Turku)

Advances in technology are often presented as a solution for today's and future problems. However, new technologies also bring about challenges in themselves. This session brings together geographers to engage with key promises and challenges of future technologies (such as AI, robotics, big data, etc.), and their societal impacts.

The session is open to a wide range of and often overlapping topics, covering discussions on the social, economic, ethico-political implications of these technologies. We explore how these issues are represented in current debates in (human) geographies. This allows, for instance, inquiries into automation, surveillance, transformation of working-life, and sustainable transitions.

► Stigmas of Helsinki neighborhoods: Corpus-assisted discourse studies and data mining approach

Jenny Tarvainen (University of Jyväskylä)

In this presentation, I will discuss sentiments related to the neighborhoods of Helsinki and analyze what kinds of sentiments are related to each neighborhood mentioned in the data. For my data, I will use the Suomi24 corpus, which contains circa 4 billion words and all the discussions between 2001-2017 (2018-2020 coming soon). This makes the data optimal for data mining approaches and diachronic inspection. As for my data mining methods, NER (Named Entity Recognition) will be used to recognize place names from the corpus. This step is followed by performing an automatic sentiment analysis for each mentioned neighborhood.

At first, I will study whether neighborhoods are primed to occur in a negative or a positive context (or both). Then I will perform a more qualitative analysis implementing corpus-assisted discourse studies (CADS), which consists of close reading of the discourses in negative contexts to see how the negative reputation has been constructed and possibly changed over time. This enables further research to find out potentially predictable patterns that affect the spatial stigmatization and segregation.

This presentation relates to the article that will serve as the first part of my PhD dissertation. The study combines linguistics, natural language processing (NLP), and urban studies. The societal aim of the broader research is to reveal the linguistic mechanisms of socio-spatial segregation, and the academic aim is to create a set of methods to complete an automatized semantic analysis of big data.

Keywords: stigma, big data, data mining, nlp, corpus, CADS, sentiment analysis, discourse

► The New Dynamics of Creative Work: Time-geographic approach to the creative processes of computer scientists

Roosa Wingström (University of Turku)

Advancements in digitalization, artificial intelligence (AI), and information technology have undeniably changed the dynamics of creative work in the modern era. Activities previously carried out by humans in physical places have been substituted by automation and virtual platforms. Even though our understanding of the effects of digitalization and new technologies on creativity is growing, knowledge of the new dynamics of modern creative work remains limited.

The time-geography framework allows the examination of multifaceted human activities and social processes in varying space-time contexts. In this study, I use the time-geographic approach to analyze the creative work on an individual level to gain more insight into the creative processes of computer scientists, and how their everyday activities with smart technologies such as AI are organized in physical-virtual spaces. I utilize 3D GIS to map and visualize the life paths of computer scientists in space and time. Then, I combine the maps with creativity diaries and interviews to create a comprehensive set of spatio-temporal data. This research setting offers a new perspective to everyday creativity and work, as it allows a more compelling analysis of individual-level activities of humans. I further consider the material entities such as artefacts and tools as a part of the creative processes to investigate the socio-material relations that smart technologies bring about in future creative work.

Keywords: creativity, time-geography, sociomateriality

► Coming to Terms with Algorithmic Surveillance

Thomas Behrmdt (University of Turku, University of Vaasa)

Abstract is not published.

Keywords: algorithmic surveillance, data, algorithms

► Environmental knowledge and visualizing media technology in Finnish-Russian border regional media flows

Teemu Oivo (Helsingin yliopisto)

Media sources play an essential role in public opinion formation on energy and waste-related knowledge, and the ways that media present environmental events influence people's informed decision-making. As a member of the research project "Flowision", I explore how the mediatized knowledge on fossil and renewable energy and waste is produced and distributed by Finnish and Russian media and how visualizing technological tools in the media influence the of energy and waste-related knowledge. What are the interrelations of social actors and technology development of the relevant media field? My conference paper introduces work in progress in Flowision. In a preliminary case study, I have selected news events in Finnish-Russian border regions. To elaborate on epistemology and representation of media outputs on energy and waste-related news events, I seek to learn how the producers of media content utilize

visualizing technology with environmental issues. Overall, this study seeks to highlight combinations of material-semiotic assemblages in media producers that support mediatized representation and public understanding of current energy and waste issues in Russia and Finland.

Keywords: visualization, regional media, environmental knowledge

► **National Artificial Intelligence policies at the framework of transformative innovation policy**

Lauri Hooli (Turun yliopisto), Johanna Hautala

In this research, we examine national artificial intelligence (AI) policies from the perspective of transformative innovation policy framework. Discussions about appropriate innovation policies are increasingly emphasising the need for new framing that actively supports transformation toward inclusive societies and sustainable environmental development. However, despite some narrow sectoral policies with the main aim of fostering sustainable development, the empirical evidences of cross-sectoral innovation policies that fulfil the principles of transformation in practice are limited. AI policies offer an interesting peek into the present and future of innovation policies, as recent years, numerous countries have developed these cross-cutting and forward-looking policies rather simultaneously. There are high expectations that AI will transform our societies in several ways and it will have significant role solving several grand challenges societies are facing. Nevertheless, our result show that the transformative objectives of researched policies are rather modest and those lack of clear vision how AI could be advantaged to create more sustainable societies. Furthermore, as the demand for transformative innovation policy arises precisely from the need to address global environmental challenges there is a need for more accurate analytical framework that does not only distinct the economic policy agenda from the social agenda, but particular attention needs to be paid also to the environmental policy agenda.

Keywords: artificial intelligence, transformative innovation policy, strategy analyse

► **Future imaginaries, expectations, and anticipatory practices: how practitioners of Artificial Intelligence operate between ‘now and future’**

Johanna Hautala (University of Vaasa), Toni Ahlqvist (University of Turku)

Artificial Intelligence (AI) is a world-changing technology due to its capability to learn independently, process big data, and automate human work. Rapidly developing technology makes the era of AI turbulent. Forecasting future is both needed and challenging. In this article, we address the gaps in current future studies concerning thin empirical research on grassroots level of AI practitioners, and the lack of proper theoretical framework in the context of forecasting to connect the (inter)national strategies with practitioners' actions. We do this with an empirical case study in Finland and Singapore, consisting of their national AI strategies, and interviews of 26 practitioners. We create a new theoretical framework by combining three concepts: future imaginaries, their interpretation and mutation into practitioners' expectations, and anticipatory practices to react to the expectations. According to the results, the AI practitioners interpret the societal and strategic discussion on AI as their key expectations. However, their practices – that

anticipate the expectations – face the challenges of the “now”. On the one hand, AI practitioners “ride the wave” of the AI-hype. On the other hand, they are proactive and critically active to develop AI and educate people about AI. The framework positions the AI practitioners’ everyday work in between now and future. The presentation concludes with promises and challenges from the perspective of human geography.

Keywords: artificial intelligence, future imaginaries, expectations, anticipatory practices, Finland, Singapore

► **Helsinki, Rovaniemi and Hanko in comparison:
Corpus-assisted analysis of spatial discourses**

Salla Jokela (University of Tampere), Terhi Ainiala (University of Helsinki), Jarmo H. Jantunen (University of Jyväskylä), Jenny Tarvainen (University of Jyväskylä)

This paper discusses digital discourses related to three Finnish cities: Helsinki, Hanko and Rovaniemi. We study the ways in which users of social media attach meanings to these cities and how the cities are constituted through social media discourses. All the cities under study are well-known tourism destinations. As such, they have engaged in branding endeavors aimed at steering people’s perceptions towards shared visions of what these cities are about. We approach these visions from the point of view of the users of Suomi24 - Finland’s biggest online discussion forum - in order to find out how the cities’ brands are negotiated in everyday discourses.

The data comes from the Suomi24 online corpus (nearly 4.3 billion words), which covers discussions from the years 2001-2017 (2018-2020 coming soon). With each urban area we zoom into years 2001-2005 and 2012-2017 to find out how place-based meanings are articulated in digital discourses and how these discourses change over time. The analysis draws on corpus-assisted discourse studies (CADS), including collocation analysis. Later, these observations will be accompanied with qualitative analysis and cross-checked with documents related to city branding.

The study shows how digital discourses are connected to socio-material realities that prevail in Helsinki, Hanko and Rovaniemi. These cities share certain discourses, but they are also constituted in different ways due to their distinctive histories, identities, and narratives. Our study contributes to research on the relationship between the formation of socio-spatial consciousness through popular discourses and differentiation of Finnish cities in the post-Fordist era.

Keywords: corpus-assisted discourse studies, digital discourses, urban discourses, Suomi24, social media, city branding, Helsinki, Hanko, Rovaniemi

13 Young people as environmental citizens beyond individualistic consumers

Session leaders: Kirsi Pauliina Kallio (Tampere University), Päivi Honkatukia (Tampere University)

This session is co-organized with The Annual Conference on Youth Studies 2021 (Nuorisotutkimuspäivät 2021) with additional presentations.

As part of rising awareness of the climate crisis, youths in different parts of the globe seek insight and practical solutions to such broad-ranging challenges that will deeply affect the future of all life on earth. Yet young people's opportunities to impact on decision making have not increased adequately; they still tend to be viewed as vulnerable groups to be protected and provided for by the adult society, instead of active citizens. Moreover, the dominating interpretation of environmental citizenship based on individualistic consumerism downplays the views that young people present in other roles than critical consumers. This session explores young people's emerging interests in environmental politics and the related societal participation as environmental citizenship broadly understood, acknowledging formal, informal, and mundane civic activities. We set out to challenge the dominant understanding of environmental citizenship as individualistic and consumerist agency vis-à-vis global markets and emphasise the need to understand wicked environmental problems as intertwined with other broad phenomena in which young people's voices remain scarcely heard. We welcome theoretically, methodologically, and empirically oriented contributions, in Finnish or English. The session is organized as a set of hybrid panels, at two scientific meetings (the annual meetings of Finnish geographers and youth studies).

► Young peoples' environmental citizenship in the news and social media framings on the Fridays for Future Movement in Finland

Erika Albrecht (University of Eastern Finland), Janette Huttunen (Åbo Akademi)

The Fridays for Future (FFF) movement is a major climate movement, which has attracted young participants, calling for systemic change and has demanded adults and decision-makers to act on climate change. In this paper, we explore framing young people's environmental citizenship within Finnish news media and Twitter discussions about the FFF movement. We draw from Dobson's (2003, 2007) concept of environmental citizenship, a non-territorial form of citizenship, which develops in the cultural and social spaces of environmentalism and which has been defined as the "ecological politics of everyday life". Our results explore the many aspects of environmental citizenship that young people express in the FFF movement. We identified three frames within the media debate on the school strikes: the sustainable lifestyle frame, focusing on the individual and critical consumerism aspects of environmental citizenship, the active youth frame, focusing on active youth participation in politics, and the school attendance frame, concerned about the young people skipping school for the strike action. Despite the dominance of the discussion on school attendance, the FFF movement in Finland was framed through sustainable lifestyle choices, especially on Twitter. We revealed dominance of adult voices in the Finnish media and social media debate on young people's action on climate change, which can support young people when they are developing skills to

act as environmental citizens but might undermine the collective action and justice demands of young people. The movement is also shaping young people's perceptions of active citizenship and young people's political participation.

Keywords: Fridays for Future, youth participation, social movements, social media, environmental politics, environmental citizenship

► Participation of Sámi youth in the Finnish climate act reform from the perspective of social justice

Henna Juusola (Tampere University), Jukka Viljanen (Tampere University)

This abstract was submitted to The Annual Conference on Youth Studies 2021.

In this ALL-YOUTH-research we focus on the Sámi youth's participation in national climate act reform that started in 2019. During the reform process, broad consultations were organized by the ministry of environment to gain notions of the citizens and stakeholders. A particular focus was on the Sámi people and youth, particularly affected by climate change (see e.g. Näkkäläjärvi et al. 2020). Data of this analysis consists of statements and comments related to climate act reform and a joint Nordic declaration on climate change by Sámi youth. In the data analysis, we also take into account the discussions that we have had with Sámi youth during this research: in this research, close co-operation has taken place with the Youth Council of Finnish Sámi Parliament, which is officially a co-research body.

In the presentation, we describe the initiatives stated by Sámi youth and consider how these relate to the initiatives put forward by other youth actors nationally and internationally. As an analytical starting point, we follow Fraser's (2008) notions of social justice: social justice requires recognition of social groups, opportunities for participation and a simultaneous review of the distribution of social resources. Analyze process is based on interpretive policy analysis, enabling the integration and interpretation of Finnish climate act reform into global, national and local policy processes (Häikiö & Leino 2014).

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► Towards understanding practices of visual participation: Exploring the meaning of visual content on social media channels among young environmental activists in Finland

Jenni Kettunen (University of Helsinki)

This abstract was submitted to The Annual Conference on Youth Studies 2021.

Not many are unaware of the image of the Swedish young activist Greta Thunberg sitting alone in front of the Swedish Parliament – an image that has since August 2018 become a somewhat symbol for the international climate movement. Young people are a powerful force for change both online and offline (Reinikainen, Kari, & Luoma-aho, 2020). In September 2019, the climate strikes took place in estimated 185 countries. According to Boulianne, Lalancette & Ilkiw (2020), the global climate strike reflects a trend in international protest events, which are connected through social media and other digital tools.

One of the latest examples of this mobilisation is Extinction Rebellion (XR), an international movement established in the UK in 2018. XR describes itself as “an international movement that uses non-violent civil disobedience in an attempt to halt mass extinction and minimise the risk of social collapse” (Extinction Rebellion, 2021). This mobilisation is closely linked to social media channels, which, in turn, make increasing use of visual practices (Miller et al. 2016). Because the public sphere of today’s youth is increasingly dominated by visual content, it becomes vital to investigate how it shapes the political action and imaginaries of the youth.

The presentation introduces my on-going doctoral research, which takes the idea of the connection between the online and offline spheres of public action and the increasing significance of the visual content in the lives of young people as a starting point to study visual participation. In this presentation, I discuss the topic from the viewpoints of young people who have engaged in activism in XR Finland, better known as Elokapiina. With ethnographic fieldwork and interviews, I explore how the young citizens understand the meaning of visual content on social media channels as part of their activism.

14 Pecha Kucha -työpaja opiskelijoille

Työryhmän vetäjät: Samuli Taanila (Oulun yliopisto), Marja Lindholm (Oulun yliopisto)

Tänä vuonna Maantieteen päivillä on perustutkinto-opiskelijoilla jälleen mahdollisuus päästä ääneen. Opiskelijoiden sessio toteutetaan Pecha Kucha periaatteella. Ideana siinä on esitellä opiskelijoiden kandi- tai gradututkielmia lyhyesti ja ytimekkäästi. Pääsääntöisesti dioissa on eniten kuvia ja kaavioita. Dioja esityksessä on 20 ja tarkoituksena niitä on vaihtaa 20 sekunnin välein (ks. <https://www.pechakucha.com>). Esityksen jälkeen varataan aikaa muutamille kysymyksille. Session tarkoituksena on antaa kuulijoille katsaus eri yliopistoissa tehtävistä kandeista ja graduista. Lisäksi sessio tarjoaa opiskelijoille tilaisuuden saada esiintymiskokemusta rennolla tavalla. Sessiossa äänessä ovat perustutkinto-opiskelijat, mutta kaikki ovat tervetulleita seuraamaan.

17 Seeking Solutions to Carbon Neutrality through Transdisciplinary Research across Social Sciences and Humanities

Session leaders: Roger Norum (University of Oulu), Sakari Höysniemi (University of Helsinki), Tanja Riekkinen (University of Oulu)

In this session, we unpack how distinct theoretical and methodological approaches in social sciences and humanities enable studying tensions, frictions and similarities in past and contemporary energy transitions in Northern European space and how they connect with broader global developments. In our planned project we have identified similar debates in environmental history, feminist research, science and technology studies and sustainability transitions to name but a few that all aim to unpack social and political power relations in the sphere of energy.

We show how by employing these theoretical and methodological approaches we could formulate new understandings of energy in varying socio-political scales as alternatives to dominant techno-economic framings. The presentations in this session cover studies assessing past and present socio-technical dynamics and visions of energy transitions in Finnish and Arctic contexts with historical, discursive-material and affective methodologies.

We cover both fossil fuel related sociotechnical imaginaries, as well as the current energy transition challenges connected with renewables and decarbonisation, and proposed pathways for reaching them. We hope to open up new avenues for understanding, seeing and feeling the past, present and future of energy with this transdisciplinary toolkit.

► Geotermisen energian seismisen riskin hallinta institutionaalisesti epäselvässä tilanteessa

Johanna Tuomisaari (University of Helsinki)

Ilmastonmuutoksen hillitsemiseksi asumisesta koituvien päästöjen vähentäminen on avainasemassa: tällä hetkellä asumisesta aiheutuu hieman vajaa kolmannes Suomen kasvihuonekaasupäästöistä, ja suurin osa asumisen päästöistä aiheutuu lämmityksestä. Geotermisen energia eli maankuoren lämpöenergia on noussut yhdeksi vaihtoehdoksi korvaamaan polttamiseen perustuvaa energiantuotantoa ja erityisesti fossiilisia polttoaineita. Sen etuina on uusiutuvuus ja vähäpäästöisyys.

Tehostetussa geotermisessä lämmöntuotannossa kallioperän rakoja avarretaan syötämällä sinne vettä, mikä muuttaa kallioperän jännitystilaa ja saattaa aiheuttaa eriasteisia maanjäristyksiä. Tätä ihmisen toiminnan aiheuttamaa seismisyyttä kutsutaan indusoiduksi seismisyydeksi erotuksena luonnollisesta seismisyydestä. Indusoitua seismisyyttä aiheutuu myös muuan muassa maanalaisesta louhinnasta sekä öljyn- ja kaasuntuotannosta. Indusoidun seismisyyden riskin hallinnassa pääasialliset keinot ovat selvittää mahdollisimman tarkkaan, mikä sitä aiheuttaa ja valvoa seismisyyttä aiheuttavaa toimintaa.

Tämä paperi käsittelee geotermisen energian hallintaa ja etenkin Seismologian instituutin toimija-asemaa geotermisen energian hallintakäytännöissä. Analyysimme nojautuu Maarten Hajerin institutionaalisen epäselvyyden käsitteeseen, ja pohdimme, millaisena geotermisen energian hallinta näyttäytyy tällä hetkellä ja millaisia kehittämistarpeita toimijat tunnistavat. Institutionaalisen epäselvyyden ymmärtäminen edellyttää aineistolähtöistä analyysia. Koska tilanne on institutionaalisesti kompleksinen ja hallinnan käytännöt ovat

vasta muotoutumassa, paras tapa tavoittaa hallinnan monimuotoisuus on kerätä aineistoa silloin, kun käytännöistä neuvotellaan.

Analysoimme syvään geotermisen energian hallintaa tulkitsevan politiikka-analyysin keinoin. Tulkitseva politiikka-analyysi on tutkimusote, joka keskittyy politiikkaprosessien analysointiin merkitysten näkökulmasta. Tutkimuksen tavoitteena on lisätä ymmärrystä merkityksistä, joita toimijat antavat politiikkaongelmille. Tulkitsevassa politiikka-analyysissä lähtökohdaksi otetaan toimijat ja heidän tavoitteensa ja tulkintansa. Tutkimuksen päämääränä on ymmärtää yhteiskunnallisia kysymyksiä ja käytäntöjä sellaisina kuin ne niissä mukana oleville toimijoille näyttäytyvät.

Asiasanat: geoterminen energia, seisminen riski, hallinta, institutionaalinen epäselvyys, tulkitseva politiikka-analyysi

► Imagining Finnish petroculture

Tanja Riekkinen (University of Oulu)

Climate change is one of the most topical challenges facing mankind. One means to tackle the challenge is the energy transition from fossil fuels to renewable, carbon neutral energy sources. Indeed, according to the study of Kamilla Karhunmaa, carbon neutrality can be understood as a widely shared sociotechnical imaginary - namely a collective future vision which is considered attainable by technoscientific means - in Finland. Since the 2010s, petrocultures scholars have argued that in order to accelerate the energy transition from fossil fuels to other sources of energy, it is necessary to increase our understanding concerning the social, political and cultural dimensions of energy. They have noted that especially human and social scientists as well as artists have the necessary expertise to respond to this need for knowledge. However, the topical transition is not the first one in the history of the world but rather one transition among others. Drawing inspiration from studies focusing on petrocultures, sociotechnical imaginaries and deep transitions, I will explore how knowing and understanding the development of previous energy transitions could contribute to the topical energy transition debate. In this effort, I will use my ongoing dissertation work on the history of Finnish petrofutures as an example. In addition, I will share some thoughts on how the before mentioned theoretical approaches enrich my study.

Keywords: petroculture, sociotechnical imaginaries, energy transition

► Making of the Arctic dream –

The affective resources in the Arctic strategies

Sohvi Kangasluoma (University of Helsinki)

Despite global warming, hydrocarbon energy resources in the north continue to play a significant role in the Arctic policies and strategies, laying the ground for their economic, societal and environmental ambitions. In an era defined by the global climate crisis, the Arctic policies become increasingly important, yet the identities built on the extraction of natural resources are harder to maintain. This presentation focuses on the Arctic strategies of the five Arctic coastal countries, whose waters are expected to hide a significant share of the world's remaining oil and gas reserves. I am curious, what kind

of ideas of the northern resources are the strategies built on, and related to that, how do the strategies discuss their energy potential? I approach the strategies by looking at the affective level of these documents - aiming to shift the focus of rationally and economically calculative and strategic resource utilization discussion to their affective, emotional dimensions. I examine how affects are utilized in the establishment and promotion of Arctic policy goals laid out in the strategies and argue that the elusive yet alluring idea of endless natural resources in the Arctic is shaped by encouraging certain affective states. I wonder, how will the states construct their identity in a situation where those affective commitments and aspirations will remain unfulfilled, yet continue to live in their hopes and dreams. The presentation is based on a paper I am currently working on with Hanna Lempinen, University of Lapland.

Keywords: Arctic, A5, energy, resource affect, strategies

► Comparing storylines of secure and sustainable energy futures in sociotechnical imaginaries of Finnish governance

Sakari Höysniemi (University of Helsinki)

Securing energy supply and decarbonisation of energy system could be considered as one of the key targets of energy policy. Both of these targets operate under anticipatory logics, but close to an antagonism, securing against threats or enabling change. That is, the process of anticipation could be categorized between undesired and desired futures or between management of continuity and change. Finland is taken as a case study, as it on one hand has performed well in energy security in terms of having versatile energy mix. It is, however, carbon-intensive and optimized for energy trade with Russian Federation, although through the rationale of security of supply any given fuel could be purchased elsewhere in an emergency situation. Based on data consisting of 30 expert interviews, governmental and corporate strategies and scenarios, this article assesses how the imaginary of energy security is attained vis-à-vis climate change mitigation policies, namely imaginary of energy transition. The results indicate that energy security in Finland is in the process of reframing due to strengthening of climate policy targets and due to increased hope for technological innovation. A closure is not achieved on how to achieve both secure and decarbonized energy system. Rather, the scope and context of energy security in terms of acceptability of certain technologies and policy measures are broadening spatially and temporally and are putting pressure to rethink anticipatory logics.

Keywords: energy security, energy transition

I8 Maantieteellisen lukutaidon kehittyminen alakoulusta yliopistoon

Työryhmän vetäjät: Virpi Hirvensalo (Helsingin yliopisto), Tua Nylén, Petteri Muukkonen (Helsingin yliopisto)

Maantieteellisen lukutaidon oppimispolku kulkee alakoulun ympäristöopista yläkoulun maantiedon opintoihin, maantieteen opintoihin lukiossa ja mahdollisesti edelleen yliopistossa. Varsinkin alakoulussa maantieteellinen lukutaito kehitty myös muiden aineiden tunneilla. Minkälaista maantieteellistä lukutaitoa lapset ja nuoret tarvitsevat

eri ikätasoilla ja myöhemmin elämässä? Millä eri tavoin lapset ja nuoret omaksuvat maantieteellistä lukutaitoa koulujärjestelmän eri tasoilla, sekä opetussuunnitelman sisällä että vapaa-ajalla? Miten eri ikäiset osaavat tulkita maantieteellistä tietoa, tuottaa sitä itse ja toimia sen pohjalta? Maantieteellisen lukutaidon kehittymiseen voivat vaikuttaa esimerkiksi yksilölliset valmiudet ja perheen tuki, opettajien valinnat opetusmenetelmä-, sisältö- tai geomediapainotuksissa ja nuorten vapaa-ajan harrastukset.

Työryhmään kutsutaan tutkijoita ja asiantuntijoita pitämään aiheeseen liittyviä noin viiden minuutin mittaisia puheenvuoroja. Työryhmä alkaa session puheenjohtajana toimivan Virpi Hirvensalon alustuksella. Tämän jälkeen kuullaan tutkijoiden ja asiantuntijoiden puheenvuorot. Lopuksi kokoonnutaan työryhmiin keskustelemaan (n. 40 min) Jamboard-alustaa hyödyntäen. Keskustelussa perehdytään ryhmittäin maantieteellisen lukutaidon tavoitteisiin ja kehittymisen keskeisiin askeleisiin. Session päättää tulosten koonti. Jamboard-muistiinpanoista koottu yhteenveto pyritään julkaisemaan Terrassa.

Jamboardissa on alla olevan tyyppinen taulukko, johon kootaan ytimekkäitä ajatuksia maantieteellisen lukutaidon kehittymisen keskeisistä askeleista koulutusjärjestelmässämme: minkä taitojen omaksuminen on kullakin ikätasolla olennaista, jotta lapsi ja nuori on valmis siirtymään seuraavalle tasolle?

Tulkinta, arvioiminen	Tuottaminen	Toiminta
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1.-2.-luokat

3.-6.-luokat

7.-9.-luokat

lukio

Kolmiluokitus tulkintaan ja arvioimiseen, tuottamiseen ja toimintaan perustuu Opetushallituksen Uudet lukutaidot -kehittämishjelman medialukutaidon tavoitteisiin.

► Mitä taitoja lapsi ja nuori tarvitsee päästäkseen eteenpäin maantieteellisen lukutaidon osalta?

Markus Hilander (Helsingin yliopisto)

Maantieteellinen lukutaito edellyttää maantieteellisen ajattelun taitoja. Sirpa Tanin (2017) mukaan maantieteellisessä ajattelussa yhdistyvät ihmisen ja ympäristön vuorovaikutus, paikallisen ja globaalin tason yhteen kietoutuminen sekä luonnon- ja ihmistieteellisten näkökulmien yhtäaikainen käsittely. Esi- ja alkuopetusikäisten lasten kanssa tutkiva oppiminen pedagogisena menetelmänä alkaa oman lähiympäristön havainnoimisella moniaistisesti. Samalla kehittyy ympäristöherkkyys, joka mahdollistaa esimerkiksi vuodenaikojen muutosten havainnoimisen lähiympäristössä. Omaa lähiympäristöä voidaan lähteä jäsentämään ympäristöopin käsitteiden lisäksi myös harjoittelemalla kartan laadintaa. Esiopetusikäisillä perspektiivin haltuunotto vaatii harjoittelua: miltä esineet näyttävät ylhäältäpäin katsottuna. Kartan laadinnassa auttaa lähiympäristön dokumentointi esimerkiksi valokuvaamalla. Kamerakynäpedagogiikkaa hyödyntämällä voidaan paikantaa ja dokumentoida esimerkiksi vaarallisia paikkoja omasta lähiympäristöstä ja merkitä ne myöhemmin kartalle. Vanhempien lasten kanssa voidaan tarkastella myös muita visuaalisia esityksiä kuin karttoja. Koulun ulkopuoliset visuaaliset katalogit tarjoavat virikkeitä maantieteellisen ajattelun kehittymiselle. Niin kansallisissa opetussuunnitelmissa kuin varhaiskasvatussuunnitelman perusteissa

mainittu ekososiaalinen sivistys johdattaa pohtimaan yksilön kulutusta. Tarvitaan resistenssiä mainoksia kohtaan, joiden tarkoituksena on saada ihmiset kuluttamaan luonnonvaroja. Yhtenä pedagogisena menetelmänä mainosten merkitysten purkamiseen voidaan käyttää vastamainontaa. Se edellyttää niin tuotantoketjujen hahmottamista kuin oman arvomaailman pohdintaa.

Asiasanat: mainokset, vastamainokset, geomedia

► Maantieteen opettaja on lukutaidon opettaja

Sanna Mäki (Turun yliopisto)

Maantieteen opettajat opettavat maantieteellisten sisältöjen ja työtapojen lisäksi taitoja lukea maantieteellistä informaatioita hyvin erilaisista lähteistä. Maantieteen opetuksessa luetaan paitsi tekstiä, myös kuvia, karttoja, numeerista tietoa, videoita, animaatioita ja ympäristöjä sekä muita ihmisiä. Maantieteilijät ovatkin pääsääntöisesti monilukutaitoisia. Maantieteelliseen lukutaitoon ja sen arviointiin pitääkin kiinnittää erityistä huomiota opettajankoulutuksessa ja esimerkiksi ylioppilaskokeiden tehtäviä sekä arviointia kehitettäessä.

Asiasanat: maantieteen monilukutaito, opettajankoulutus, ylioppilaskoe

19 Promoting sustainable and active mobility in everyday lives – insights from geographic analysis and open data

Session leaders: Petteri Muukkonen (University of Helsinki), Vuokko Heikinheimo (Finnish Environment Institute SYKE), Elias Willberg (University of Helsinki)

This session aims to bring together geographers and other researchers interested in the interplay between health, active mobility/transportation, physical activity, and the built environment. Health benefits of active lifestyles and healthy surroundings are widely recognized. But how are the possibilities and realities of sustainable and active mobility distributed across geographic areas and societal groups? And what is the role of the built environment, urban planning, daily activity spaces and available travel mode options in promoting sustainable and healthy mobility in everyday lives? How does the urban structure support or inhibit physical activity for different age groups? How new ways of organizing mobility (e.g. bike-sharing systems, e-scooters and e-bikes) are affecting active mobility and physical activity? And how some novel dynamic data sources (e.g. mobile big data) allow new ways of studying active mobility on an unprecedented spatial and temporal scale? Is there a need for new open data that would be systematically available across Finland to study sustainable and active mobility in everyday lives?

The session will consist of short (5 min) pitches/presentations of research topics and ideas followed by a brainstorming session in smaller groups. The aim of the small group discussions is to outline main research gaps and future directions for finding solutions to key challenges related to the spatial and temporal distribution of opportunities for sustainable and healthy lifestyles. The session ends with a summary session to provide some solutions or insights. Possibly participants can create a common outcome from the session: for example a discussion letter or opening to be published in the Terra (in Finnish), Fennia (in English) or Versus.

► Urban structure as an enabler of physical activity and sustainable mobility

Vuokko Heikinheimo (Finnish Environment Institute SYKE), *Linda Karjalainen* (Finnish Environment Institute SYKE), *Maija Tiitu* (Finnish Environment Institute SYKE), *Jenni Lehtimäki* (Finnish Environment Institute SYKE), *Jari Lyytimäki* (Finnish Environment Institute SYKE), *Ville Helminen* (Finnish Environment Institute SYKE), *Riikka Paloniemi* (Finnish Environment Institute SYKE)

In our presentation, we discuss the interlinkages of urbanization, sustainable mobility, and physical activity. There are national targets to increase cycling and walking by 30% from the current level by 2030. To reach these targets, better understanding of physical activity and mobility for different people across different urban environments is required. This research is part of the Healthy Lifestyles to Boost Sustainable Growth (STYLE) -project. The main aim of our work is to generate knowledge concerning what enables or inhibits physical activity (e.g. walking, cycling) in urban areas to support planning and policy decisions. We study the interlinkages of the built environment and physical (in) activity, for example, through carless households, measured activity, and attractiveness of green spaces. In our analyses we integrate information about the urban form and socio-demographics (derived from national databases) with information about physical activity among different age groups (derived from surveys and mobile big data). Our results regarding carless households show that they differ from car-owning households both socio-demographically and spatially, and furthermore need to be treated as voluntarily carless and involuntarily carless instead of a single group. Our ongoing work focuses on the complex interlinkages between the quality of urban surroundings as an enabler of physical activity from the perspective of different age groups.

Keywords: physical activity, urban structure, sustainable mobility

► Restorative benefits of everyday green exercise: A public participation GIS approach

Anna Kajosaari (Aalto University), *Tytti Pasanen* (Tampere University)

Contact with green space has been associated with diverse beneficial impacts on human health, including support for physical activity, mental health, and community and social health. The increasing evidence for the positive health impacts of green spaces challenges urban planners and researchers to think how to effectively translate this evidence into planning practice. In many urban settings, local knowledge of health-supportive green environments is increasingly needed in order to manage urban densification without losing quality green space.

This study uses public participation GIS (PPGIS) methods to analyze and map the perceived restorative benefits associated with active recreation in diverse green and blue public open spaces. The data were collected in the Helsinki Metropolitan Area, Finland, with a map-based online survey directed to adults aged 18–65 years ($n=760$). Logistic regression models were built to study differences in stress reduction, relaxation, and nature enjoyment experienced in diverse outdoor environments.

Overall, the results of this study suggest that exercising in blue spaces and in large natural areas provides additional restorative benefits compared to exercise undertaken in more built-up outdoor environments. These results support a synergistic conception of urban health that acknowledges the diversity of health benefits provided by public open

spaces, in particular blue and natural green settings. Moreover, the study demonstrates how participatory mapping approaches, such as the PPGIS method employed in this research, can capture local spatial knowledge on health-supportive environments that can be used to support spatial decision-making.

Keywords: PPGIS, physical activity, green space

► **Exposure of urban cyclists to air pollution, noise, and greenery:
From spatio-temporal mapping to measuring the role of route-choice**

*Elias Willberg (University of Helsinki), Age Poom (University of Helsinki, University of Tartu),
Joose Helle (Finnish Environment Institute SYKE, University of Helsinki), Tuuli Toivonen (University
of Helsinki)*

Urban travel, especially active, exposes people to various environmental qualities with significant negative and positive health and well-being impacts. Despite the importance, understanding of travel-related environmental exposures has remained limited and focused on single qualities. Recent advances in the collection and availability of both exposure and mobility data at high resolution has enabled the integration of population-scale movements to detailed exposure metrics and provided new possibilities for understanding connections between exposures and travel.

Here, we analyse air pollution, noise, and greenery exposure of urban cyclists in Helsinki. To obtain cycling trips, we used data from the local bike-sharing system with 3.1 million trips from 2019 and integrated spatially precise air pollution, noise, and greenery values to modelled trip routes using an in-house developed Green Paths software. We map the spatial variation of exposures within the system area and estimate cyclists' potential to improve their exposure with route choices. We also evaluate the spatial correlation of air quality, noise, and greenery-optimised routes.

Our results show major spatial differences in cyclists' exposure to noise and greenery in Helsinki while air pollution exposure is more equally distributed. We also demonstrate that cyclists can considerably improve their exposure with a route choice, but only in few areas, it is possible to optimise all the three exposures at once.

While our results demonstrate how careful route planning can considerably improve environmental exposure from cycling, we also call for increased attention in urban planning for the provision of healthier travel environments.

Keywords: environmental exposure, cycling, health

► **Interventions in public space management to increase active mobility:
a methodological gap to measure impact and accelerate change?**

Carlos Lamuela Orta (University of Helsinki)

Temporal and inexpensive interventions in the public space to support active mobility have been widely planned and executed in cities around the world during COVID. The pandemic has provided an exceptional situation for the exponential growth of “tactical urbanism” (projects for healthier and more social streets by reclaiming public space from cars). Thus, despite its original creative and community-based definition, and being criticized as more a neoliberal gentrification tool than actual urbanism, tactical

urbanism has become a legitimate, mainstream urban policy for active mobility.

Despite this growing popularity of dynamic interventions in streets space management, cities in Finland have not participated in the trend, which seems to be grounded especially in cities with a clear pre-pandemic momentum of limiting the space for car traffic (e.g. Barcelona's superilles, Paris' pedestrian river banks, or American cities with Open Streets or Ciclovía programs). However, the number and variety of projects provide a valuable opportunity to characterize and quantify the impacts of this type of policy. A lack of project impact evaluation is precisely identified by experts and policy-makers in Finland as a key obstacle for evidence-based mobility policy.

Thus, a novel evaluation methodology that helps to scale street management interventions in Finland needs to pay attention to the local context, but also be applicable across national borders to support policy transfers. Such methodology will necessarily rely on new digital data, sensing, and analytics in all phases of science-policy interaction, starting with the design of interventions and the monitoring of naturally occurring experiments.

Keywords: active mobility, policy evaluation, tactical urbanism

► Equality in suburban physical activity environments: a study about spatial accessibility

Petteri Muukkonen (University of Helsinki), Charlotte van der Lijn (University of Helsinki), Marisofia Nurmi (University of Helsinki), Pengyuan Liu (University of Helsinki), Sonja Koivisto (University of Helsinki)

In this study we are analyzing how physical activity environments (sports facilities, parks, green areas, routes for light traffic) are equally available for people living in our two example sub-urbans (Kontula, Helsinki and Huhtasuo, Jyväskylä). This research project (YLLI) is a co-project of geographers from the University of Helsinki and social scientists of sports from the University of Jyväskylä. Research results provides information to support decision making and planning.

Specially, the YLLI project studies the applicability of GIS (geographic information systems) when supporting decision making and planning in the cities. We are developing new GIS data outputs and even indicators and tools to describe the spatial and temporal nature of residents' activities and active lifestyles. It has been noticed earlier that active and healthy lifestyles helps to prevent exclusion.

Our input datasets are sports related registers and statistics, phone interviews, in situ observations, school interviews, open access GIS datasets, and big data from the social media. Therefore, we are having different points of view when studying residents' active behaviour and their possibilities to do sports and physical activities.

Results show both social and geographical hinders to do sports and physical activities in the neighbourhood they are living. Some sports and activity types are more socially and geographically accessible than others – especially when considering different age groups and socio-economic groups. Therefore, physical activity environments are not equally available for everyone. Hinders might be economical, societal, cultural, or geographical.

Keywords: GIS, spatial accessibility, equality

20 Tutkimus muutosvoimana -paneelikeskustelu

Työryhmän vetäjät: Roosa Wingström (Turun yliopisto), Marika Kettunen (Oulun yliopisto)

Miten yhteiskunnallisesti vaikuttavaa ja muutosta edistävää tutkimusta tehdään? Kuinka sovittaa yhteen kriittinen tutkimusote, monialainen yhteistyö, systemisen muutoksen tavoittelu ja tutkimuksen välitön vaikuttavuus? Ari Lehtisen Alue- ja ympäristötutkimuksen seuran juhluennon jälkipyykissä viisi panelistia pohtii tutkimuksen roolia osana yhteiskunnallista muutosta. Panelisteina mukana väitöskirjatutkija ja aktivisti Camilla Marucco (Turun yliopisto/We See You ry), tutkijatohtori Tuomo Alhojärvi (Oulun yliopisto), väitöskirjatutkija Pieta Hyvärinen (Tampereen yliopisto), kaupunkilaisaktiivi Joonatan Hamari (Rotos ry) sekä arkkitehti Tuija Patana Oulusta.

21 The Politics of Urban Problems and Solutions

Session leader: Derek Ruez (Tampere University)

By any account, the crises and problems facing cities and their residents are many and varied from climate change to polarization to racism as are the imagined solutions that these problems seem to call forth. Rather than focusing on a single problem, this session seeks to bring together researchers investigating how urban problems (and their solutions) are imagined, constructed, and contested as political matters across the plural and uneven landscape of contemporary urban life. Presentations will likely explore some of the following themes: 1) how urban problems and solutions are constructed in governance processes, 2) how such problems can be experienced or approached differently at the intersection of gender, race, class, sexuality, disability, migrant status, and other axes of societal differentiation, and/or 3) how proposed problems/solutions are contested, or alternative framings imagined, in the context of activism or other kinds of political action. The session welcomes diverse perspectives on the broadest possible range of problems/solutions in the interest of generating conversation across areas of focus that can raise critical questions about the politics of urban problems and open up possibilities for imagining and enacting alternative futures.

► The Urban Imaginaries of the Helsinki Region MAL-Agreements

Giacomo Bottà (University of Helsinki), Pia Bäcklund (University of Helsinki)

This paper would like to unfold the urban imaginaries embedded into the three Land use, Housing and Transport agreements (MAL-agreements) stipulated between actors and agencies from the Finnish state, HSL (the Helsinki Region Transport) and municipalities from the Helsinki region, respectively in 2012, 2016 and 2020. The three agreements form a continuum, but also reveal some striking differences in the way they attempt at building collaboration among partners, at moving responsibilities from the municipal or from the national to the 'regional' level, and at implementing solutions apt at ameliorating urban living. Our main aim is to make sense of what kind of spatial imaginaries are hidden behind the agreements themselves, that is what is stated and what is left unsaid. In particular, we are interested in:

- Which references to urbanity and urban life are mobilised and for which purposes
- What is considered an opportunity or seen as a challenge
- Which instruments are understood as crucial in solving urban challenges

By applying a qualitative analysis to these agreements, we reveal embedded narratives, values, world views and attitudes. Moreover we show how these imaginaries are implemented and unfold materially in a context where political participation and active citizenship are increasingly left out.

Keywords: MAL agreements, urban imaginaries,

► **Inclusive Urban Policy: Critical Literature Review**

Johanna Kalliokoski (University of Vaasa), Helka Kalliomäki (University of Vaasa)

Abstract is not published.

Keywords: urban policy, innovation policy, inclusion, inequality

► **“A compassionate city is an uncomfortable city”?: Problematization, polarization, and the politics of positivity**

Derek Ruez (Tampere University)

From cognitive science to interfaith organizing and from self-help therapeutics to philanthrocapitalist projects, compassion has emerged as a potent object of identification and aspiration in the contemporary moment across a number of contexts. This paper critically examines ongoing efforts to promote compassion and build an international network of ‘compassionate cities’ associated with the affirmation of an international Charter for Compassion. Drawing on participant observation at compassionate city network events, interviews with participants in compassionate city projects, and an analysis of key discourses encountered in the research, the paper analyzes how participants in compassionate city projects construct the problems toward which compassion is meant to be a response. Taking political polarization as one example of such a problem, I examine how a focus on compassion—understood as a universal capacity that can be cultivated to maximize ‘human flourishing’—tends to support particular kinds of ‘positive’ political subjectivities and projects intended to ‘bring down the temperature’ on polarization. Pointing to the limits of such problems/projects, the paper argues for the necessity of imagining and enacting more agonistic forms of compassion through an engagement with feminist care politics and abolitionist thought.

Keywords: urban politics, compassion, polarization

23 Matkalla kohti kansainvälistä geodiversiteettipäivää: mitä geodiversiteetti on ja miten voimme yhdessä tehdä sitä näkyväksi? -keskustelutilaisuus

Työryhmän vetäjät: Mikko Kiuttu (Humanpolis Oy), Vesa Krökki (Humanpolis Oy), Helena Tukiainen (Oulun yliopisto), Maija Toivanen (Oulun yliopisto)

Ehdotus kansainvälisen geodiversiteettipäivän perustamisesta on edennyt YK:n opetus-, tiede- ja kulttuurijärjestö UNESCO:n marraskuun 2021 yleiskokoukseen maailmanlaajuisen tiedeyhteisön aloitteesta. Geodiversiteettipäivän tarkoituksena on tehdä tunnetuksi elottoman luonnon monimuotoisuutta ja sen merkitystä niin ympäristölle kuin ihmisille. Lisäksi päivän tavoitteena on edistää tutkimustiedon roolia globaali muutoksen haasteiden ratkaisemisessa sekä lisätä ymmärrystä geo-ympäristön suojelun tärkeydestä ja keinoista. Ensimmäistä geodiversiteettipäivää päästään viettämään 6. lokakuuta 2022, jos aloite hyväksytään Unescon yleiskokouksessa. Tarkempi kuvaus geodiversiteettipäivästä on luettavissa UNESCO:n sivuilla.

Geodiversiteettipäivän työryhmässä perehdytään tapahtuman yleisiin perusteisiin ja luonteeseen, ideoidaan toteuttamistapoja sekä kartoitetaan toteuttamisesta kiinnostuneita tahoja erityisesti Oulun seudulla ja Pohjois-Suomessa. Työryhmän aluksi kuullaan geodiversiteetin määritelmä ja geodiversiteettipäivän esittely vetäjien puolesta, minkä jälkeen siirrytään lyhyisiin (5 min) puheenvuoroihin ja ryhmätyöskentelyyn. Kysymme työryhmässä esimerkiksi:

- Mitä geodiversiteetti mekitsee sinulle?
- Mitä hyviä käytänteitä olet havainnut geodiversiteetin tunnettavuuden, ymmärtämisen ja suojelun edistämiseksi?
- Miksi elottoman luonnon monimuotoisuutta on tärkeä ymmärtää, tehdä tunnetuksi ja suojella?
- Miten sinä/organisaatiosi/yrityksesi voisi tehdä geodiversiteettiä näkyvämmäksi?

Lopussa työryhmän anti kootaan muistioksi, jonka on tarkoitus toimia tulevaisuuden työskentelyn tukena geodiversiteetin näkyvyyden edistämiseksi. Laajan näkyvyyden ja laadukkaiden osatapahtumien järjestämiseksi tarvitaan monialaista seudullista ja valtakunnallista verkostoyhteistyötä sekä erilaisia viestintäkanavia.

Geodiversiteettipäivän perustamista ovat olleet Suomen osalta edistämässä esimerkiksi Oulun yliopiston maantieteen tutkimusyksikkö ja Rokua UNESCO Global Geoparkia hallinnoiva Humanpolis Oy, jotka myös työryhmässä ovat edustettuina.

24 Social and ecological sustainability in urban and rural peripheries

Session leaders: Joni Vainikka (University of Helsinki), Venla Bernelius (University of Helsinki)

Urbanisation and changes in the world economy have thrown developmental trajectories within and between urban and rural areas on varying paths. We can identify marginalized areas both in urban and rural contexts, defined by their "peripheral" position in social or geographical terms. Although the conditions vary, some dynamics and vulnerabilities converge in the "places that 'don't matter'" in terms of economic power and the marginalization of the everyday experiences of residents (see Rodríguez-Pose 2018).

Simultaneously, the climate crisis demands effective solutions to be implemented fast. Finland has committed to achieving carbon neutrality by 2035. How can the transition to climate-wise solutions in housing, mobility and consumption be implemented in a socially and spatially just way, as the possibilities for acting differ according to socioeconomic status and geographic location?

In this session, we discuss the challenges that residents, decision-makers and other stakeholders face in rural and urban peripheries. How can geographers contribute to solving wicked problems related to inequality and climate change?

► **Climate attitudes as indicators for willingness to adopt climate-wise housing**

Joona Salmijärvi (University of Helsinki)

Mitigating climate change and transitioning to low-carbon societies is very much actualised in the everyday lives of ourselves. In Finland, the most GHG-emissions come from energy production, which is directly affected by the ways we consume energy in our housing and living. Thus, major socio-technological changes are needed also in housing to meet the targets of a carbon-neutral Finland until 2035.

The concrete decisions to modify energy consumption in housing lies much on the hands of property owners and residents. To make any predictions about them, and give potential tailored support, knowledge is needed of their relationship and willingness to the change. One way is to analyse their attitudes towards the climate crisis and the mitigating actions. In Finland and other Western countries, certain links have been found between citizens' climate attitudes and their socio-demographic background factors.

Attitude-based policies for decarbonisation have been rather popular among policy- and decision-makers. However, the approach has also received lots of theoretical and methodological critique on its rationalistic models of human behaviour. In this presentation, I go through the main findings about the linkages between citizen attitudes towards climate change and socio-demographic background variables from Finnish, European and Anglo-American contexts. In addition, I discuss some of the issues related to predicting their climate-relevant actions from their attitudes, and how they should be acknowledged in the socio-technological transition towards climate-wise housing.

Keywords: climate change, attitudes, socio-demographic factors

► **Sustainability at the margins. A mixed-method study on how to enhance integration and well-being of immigrants in Finland**

Hanna Heino (University of Turku), Miriam Tedeschi

Abstract is not published.

Keywords: urban nature, social sustainability, well-being, integration, immigration

► Comparing Environmental Inequality Measures of Ambient Air Pollution Exposure in Helsinki Metropolitan Area

Ákos Gosztonyi (University of Helsinki), Joanne Demmler (University of Helsinki), Sanna Ala-Mantila (University of Helsinki)

There is a growing European Union-wide commitment to reduce greenhouse gas emissions and tackle climate change and air pollution-induced health disparities through a just transition towards a climate-neutral economy. Thus, it is imperative to understand how socio-spatial environmental inequalities are being (re)produced. Yet, the current state-of-the-art literature on air pollution-related environmental inequalities often provide ambiguous, over-simplified results, and leave a number of gaps in the knowledge produced (Fairburn et al., 2019). Moreover, we have limited knowledge about the existence of air pollution-related environmental inequalities in Helsinki Metropolitan Area (Rotko et al., 2000; Rotko et al., 2001, Hiltunen, 2020). To further sophisticate the knowledge both in the field and in Helsinki Metropolitan Area, we present and compare the calculation, results, and different interpretations of key environmental inequality measures. Additionally, we illustrate air pollution-related environmental inequality's spatial dimensions through a novel take on the Environmental Dissimilarity Index (Schaeffer and Tivadar, 2019). In our analysis we utilize high-resolution outdoor air quality data (ENFUSER) from the Finnish Meteorological Institute and grid-level socio-demographic data from Statistics Finland. In light of the findings, we revisit the concepts of urban core and periphery, and what may be conceptualized as spatial, social and environmental justice.

Keywords: environmental inequality, environmental justice, urban inequalities, air pollution exposure

► Social tipping points and segregation

Joni Vainikka (University of Helsinki)

At worst, climate change induces apocalyptic imaginaries with no hope, no trust, and no future. Among others, Timothy Lenton has been talking about climate tipping points, after which the climate system irreversibly shifts into a new phase or to a new balance. The abruptness of these point-of-no-returns prompt anxiety over the legacies of modernity and the consumer way of life. Yet, such tipping point analysis can also be hopeful. Positive social tipping points illustrate the idea that substantial change in social behaviour is possible and, in most cases, likely. We have known since the conceptualizations of Hågerstrand that early adopters fuel a process in which the majority is adopting new, beneficial, and desirable action that becomes a new discursive norm. This paper analyses the social tipping point literature to critically evaluate whether social tipping points are something we should promote as a means for hastening sustainable climate-wise solutions and whether, as a tool, it does not build more inequalities. Making sure that already existing segregation does not dictate the composition of the “late majority” in the phases of diffusion requires an understanding of the proneness for new ways of thinking and openness for new, and old, ideas. If a social transition finds strong political preference, it is not the case if such change will happen but in what order.

Keywords: segregation, social tipping points, attitudes, climate change, identities

► Accessibility of everyday services in urban peripheries

Oskar Rönnerberg (University of Helsinki), Mathew Page (University of Helsinki), Sanna Ilanen (Aalto University)

Many Finnish suburban high-rise housing estates (*lähiö*) have experienced longstanding struggles related to segregation, negative reputations, deteriorating housing stock, ageing population and a lack of services. Despite localised services being central to the original planning ideas of the *lähiö*, already by the time of their construction, they were lacking both services and work opportunities, and depicted as dreary living environments with nothing to do. The economic depression of the 1990s hit hard on the *lähiös*, and was followed by a period of increasing sociospatial inequality, a decreasing population and narrowing of the local service structure in the *lähiö*.

How has the level and structure of local services developed since, when the retail sector has undergone major structural changes, public services have faced neoliberal pressures and socioeconomic differences between neighbourhoods have increased? Using current and historical data of private and public service locations, we explore the change in accessibility to everyday services in different neighbourhoods in the Helsinki Metropolitan Region over the last 25 years. With intense international focus on the wide-ranging benefits of having essential services available within a walking distance of one's home – is Helsinki trending towards a 15-minute city, or a delocalised model of service provision?

Keywords: services, accessibility, *lähiö*, suburbs, segregation

► Residential segregation between socioeconomic groups in the 20 biggest municipalities in Finland

Aleksi Karhula (University of Helsinki), Antti Kurvinen (University of Helsinki), Sanna Ala-Mantila (University of Helsinki)

Residential segregation between socioeconomic groups is a widely acknowledged problem. Most often socioeconomic segregation is most pronounced in the largest metropolitan regions, but problems related to segregation can arise also in smaller towns. However, the segregation studies often focus on the largest metropolitan regions. Here, we aim to compare residential segregation between socioeconomic groups in the 20 biggest municipalities in Finland. Using full population register data from Statistics Finland, we illustrate the levels of segregation. We have created a new neighborhood classification for this purpose. It is based on the build environment in 250mx250m squares and covers the 20 municipalities analyzed. This new classification of neighborhoods allows us to better study segregation with similar areal units in smaller and bigger municipalities. Focus is on the municipal level as this is the level of intervention for most of the policies combating segregation. Our results show some differences to previous studies mostly using postal codes and economic regions as the areas of analysis.

Keywords: residential segregation, neighborhood classifications, inequality

25 Social justice, geography and activism: how are geographers making better futures?

Session leaders: Camilla Marucco (University of Turku), Leonardo Custódio (Åbo Akademi)

For decades now, finding solutions to social injustices has been a key concern for many geographers. It seems there are many paths for geographers to contribute to making better futures (Blomley 2007: 61), from “research, action and critical” geographies (Kitchin & Hubbard 1999) to “activist geographies” (Gahman et al 2020), for example. Looking at the Finnish context, how is politically and societally aware geographical research being done at the moment? In ethical, methodological and practical terms, how do politically and societally engaged geographers do their work? What are the boundaries, if any, between research and activism? What are the responsibilities, possibilities and purposes of geographers vis à vis societal emergencies such as racism, human rights violations, climate change, to mention a few?

We welcome students and researchers from different nationalities, genders, ethnicities and career stages who embrace an activist-research approach broadly understood. Activist research is about designing and conducting research in open ways not only to grasp the reasons behind crises and injustice, but also to strategically and collaboratively contribute to struggles against them (Hale, 2001). The workshop is coordinated by the Activist Research Network, bringing people together around societally and politically engaged research since 2017. For more information: <https://mailman.abo.fi/mailman/listinfo/activist-research-network>.

► Understanding challenges in tourism and searching for ways towards sustainability

Mari Partanen (University of Oulu)

Critical tourism geography dives in to the socio-cultural and environmental aspects of tourism. The approach plays an important role in understanding the challenges of tourism. At the same time, it can open up transformative perspectives on rethinking the practices and principles of tourism to make it more sustainable. My research combines critical tourism geography with design anthropology. Design anthropology contributes to struggles against contemporary challenges by co-creating transformative solutions, knowledge and action together with research participants. To combine these approaches, I use the concept of social innovations to understand the needs for change while looking for collaborative solutions towards more sustainable tourism.

Empirically, I have conducted research in 2019–2020 in Kemi, Finland, where the tourism industry has grown in last decades and caused varying impacts on locals’ lives. With ethnographic research and interviews with local tourism actors and city representatives, I have collected data on the challenges related to tourism and the potentials for transformation. Furthermore, I have conducted a participatory workshop for co-creating knowledge with local young adults to imagine alternative futures for tourism. In summary, my research aims to understand the reasons behind challenges in tourism and to take the research into action by looking for alternative, empirically grounded ways to enhance sustainability.

Keywords: sustainability, tourism, critical tourism geography, design anthropology, social innovations, ethnography

► Broadening the scope of environmental pedagogy at schools for social justice

Kirsi Pauliina Kallio (Tampere University)

Environmental education is highlighted as a cross-cutting pedagogy in the recently reformed Finnish curriculums across the educational sector, from early education to primary and secondary schools to high school and higher education. With different emphases, they include three basic dimensions: climate education, sustainability education and nature education. In schools, the basic idea is that environmental issues are linked with all study subjects and approached from various perspectives throughout the spectrum, yet in practice science education – or the STEM/LUMATE cluster – is the main channel of environmental education, including the natural-scientifically biased biology/geography education. The environment hence comes to denote a measurable fixed reality that humans can learn to know, govern, and change; a reality surrounding the human who can master it, with better or worse outcomes. Respectively, critical questions related to climate change, sustainable societies and biodiversity loss turn into rational problems for which technical solutions and innovations should be created. This pedagogical endeavor connects with citizenship education so that, in the spirit of liberal democracy, schools set out to support the development of responsible environmental citizenship through which new generations can turn the wheel toward sustainable futures where mitigation of climate change and biodiversity loss, and adaptation to the unavoidable consequences of both by means of circular economy for instance, hold the societal center stage. This presentation introduces some risks embedded in this technocratic and individualistic approach and suggests an alternative environmental pedagogy that brings together environmental, democracy and human rights education under the umbrella of positive recognition.

Keywords: climate education, sustainability education, nature education, relational environmental pedagogy, pedagogies of positive recognition, environmental citizenship

► Searching for solutions in “rebellious research” on deportability

Eveliina Lyytinen (Migration Institute of Finland)

I have been engaging in forced migration studies for the past decade or so. During my path as a researcher, I have conducted research on issues, such as labelling and categorization of forced migrants, questions of trust and mistrust among refugees and institutions, the spatiality of urban refugee protection, and refugee background youth's integration. Currently, I am examining asylum seekers' deportability in an action-oriented project ARADE (Academy of Finland, 2018-2022).

I strongly align with the key principle of not conducting academic research on refugees, unless the research is also inherently for and when desired also with refugees. Rebellious research includes multiple different methodological traditions, but it commonly refers to research that encourages speaking out, enhances agency, and is essentially participatory. More detailed approaches can vary from seeing and listening in fresh ways, collaborating together to achieve practical aims, to commencing campaigns of resistance. All of this requires collaboration and solidarity between the different people taking part in the research project. The fundamental idea behind adopting a rebellious approach to research is to combine praxis and theory in order to have a

positive impact for more human asylum and deportation policies, laws, and practices.

What for and with refugees and rebellious approach to research mean can, however, vary depending on the research topic, context and the methodologies chosen. In this presentation, I will elaborate (self-)critically, what they have referred to me as a research-activist and what kind of challenges I have faced in various politically sensitive settings terms of aiming to apply action-oriented research design.

Keywords: deportability, asylum seekers, rebellious research, ethics

► Combining art and science to create qualitative data – thoughts in retrospect

Johanna Jämsä (University of Turku), Satu Suvanto (community artist), Niina Aho (community artist)

We just really went for it. It turned out to be successful. Now what we learned? Would we do things differently now?

In the spring of 2021, I contacted two community artists to collaborate with me on my qualitative data collection. As the topic of my PhD, Nature's eudaimonic wellbeing benefits, had proven to be tacit knowledge, not so eagerly shared with a stranger scientist, I reached out to the field of creative methods, to gain more insight on the topic. In the course of four months, entirely remotely via Zoom – me in Espoo, them in Oulu – we developed a new method for qualitative data creation: Luovasti luonnosta creative writing workshop. We then utilized this to communicate with the youth and the elderly Turku inhabitants on the subject of nature's eudaimonic wellbeing benefits.

In this presentation, I will reflect on the ethical matters, the power relations and just being a decent human being when conducting creative writing workshops with scientific ambitions.

Keywords: art-science collaboration, qualitative, creative methods

26 Geoinformatiikka hyvinvoivalle yhteiskunnalle ja ympäristölle

Työryhmän vetäjät / Session leaders: Harri Antikainen (Oulun yliopisto), Tiina Lankila (Oulun yliopisto), Terhi Ala-Hulkko (Oulun yliopisto), Marjo Seppänen (Oulun yliopisto)

Geoinformatiikka tarjoaa välineitä yhteiskunnan ja ympäristön prosessien ja ilmiöiden tutkimiseen. Erilaisten palveluiden alueellinen saavutettavuus ja tarjonta sekä ympäristöllisten, yhteiskunnallisten ja väestöllisten prosessien muutokset heijastuvat paitsi yhteiskunnan toimintaan myös väestön ja ympäristön hyvinvointiin. Metodologiset edistysaskeleet geoinformatiikassa mahdollistavat yhä tarkemman ympäristön ja yhteiskunnan monitoroinnin ja muutosten seurannan, joka osaltaan tuottaa myös tutkittua tietoa päätöksenteon taustalle. Toivotamme tervetulleeksi kaikenlaiset esitykset, joissa on hyödynnetty geoinformatiikkaa väestön, yhteiskunnan tai ympäristön tilan, muutoksen ja hyvinvoinnin tutkimisessa sekä geoinformatiikan metodologiaan liittyvän tutkimuksen.

Geoinformatics for a healthy society and the environment

Geoinformatics provides tools to study the processes and phenomena of the society and the environment. Accessibility and provision of amenities and services in different

locations as well as the processes of environmental, societal and population change are echoed not only in the state of societal functioning but also in the well-being of population and the environment. The methodological advances in geoinformatics enable more and more accurate means for monitoring and detection of societal and environmental change, that will also produce scientific and knowledge-based information for decision making. We welcome all kinds of presentations that utilise geoinformatics in studies of state, change and well-being of population, society, or the environment, and methodological studies of geoinformatics.

► ARIFi: malli saavutettavuuden ja syrjäisyyden oikeudenmukaisemmaksi huomioimiseksi alue- ja kuntapolitiikassa

Simo Rautiainen (Itä-Suomen yliopisto, Karjalan tutkimuslaitos)

Suomen alue- ja kuntapolitiikka on tietyiltä osin epäoikeudenmukaista, sillä saavutettavuuden ja syrjäisyyden alueellisten erojen huomioiminen on puutteellista. Olen aiemmassa tutkimuksessani osoittanut kuntien valtionosuusjärjestelmässä käytetyn syrjäisyysindikaattorin puutteet. Puhtaasti väestömääriin perustuva indikaattori huomioi vaihtelevat maantieteelliset olosuhteet hyvin vajavaisesti eikä palvelukeskusverkon vaikutuksia huomioida lainkaan. Tämä asettaa epätasa-arvoiseen asemaan ne alueet, joiden yhdyskuntarakennetta ja liikenneverkkoa maantieteelliset olosuhdetekijät, kuten vesistöt, rikkovat. Tutkimukseni tarjoaa ratkaisuksi työkalua, jolla syrjäisyys voidaan määrittellä aiempaa oikeudenmukaisemmin ja jota voidaan jatkossa hyödyntää päätöksenteon alueellista oikeudenmukaisuutta arvioitaessa ja kehitettäessä. Tutkimuksessani kehitän geospaatialisin menetelmin Suomeen liikenneolosuhteet ja palvelukeskusverkon huomioivan, koko maan kattavan, saavutettavuus- ja syrjäisyysindikaattorin. Mallina toimii Australiassa kehitetty ARIA-indikaattori (Accessibility Remoteness Index of Australia), jota on sovellettu tutkimuksessa myös muissa maissa. Kehitän mallia aiempaa tarkemmaksi, todellista liikkumista paremmin kuvaavaksi sekä Suomen olosuhteisiin paremmin sopivaksi ARIFi-indikaattoriksi. Indikaattorin tuloksista muodostuu kuva maan eri osa-alueiden saavutettavuudesta ja syrjäisyydestä sekä niiden asemasta osana Suomen aluerakennetta. Uuden indikaattorin avulla voin arvioida miten oikeudenmukaisesti valtionosuusjärjestelmä nykyisin käsittelee eri alueita ja luoda alueellisesti oikeudenmukaisemman rahanjakomallin.

Asiasanat: saavutettavuus, syrjäisyys, aluepolitiikka, GIS

► Ruoan maailmanlaajuinen saavutettavuus – viljan kysynnän ja tarjonnan välinen tasapaino

Terhi Ala-Hulkko (Oulun yliopisto), Pekka Kinnunen (Aalto-yliopisto), Márton Magyar (Oulun yliopisto), Anita Poturalska (Oulun yliopisto), Maija Toivanen (Oulun yliopisto), Ossi Kotavaara (Oulun yliopisto)

Maa- ja metsätalouden ruokaturvan saavuttaminen on yksi YK:n kestävän kehityksen tärkeimpiä tavoitteita. Ruokaturvan katsotaan toteutuvan, kun kaikilla ihmisillä on kaikkina aikoina riittävästi turvallista ja ravinteikasta ruokaa terveelliseen ja aktiiviseen elämään. Vaikka maailmanlaajuisesti ruokaa tuotetaan ihmismäärään suhteutettuna enemmän kuin koskaan aikaisemmin, on ruokaturva polarisoitunut. Samaan aikaan kun ylipainoisten määrä kasvaa, on myös suuri joukko ihmisiä, jotka kärsivät aliravitsemuksesta.

Tämä tarkoittaa sitä, että ruoka ei joko tavoita kaikkia tai se ei ole riittävän ravitsevaa. Ruoan hyvän saatavuuden ja saavutettavuuden voidaan katsoa olevan tärkeä osa ruokaturvakysymystä. Koska ruoan tuotanto ja kysyntä sijaitsevat usein maantieteellisesti eri alueilla, toimivilla liikennejärjestelmillä on tärkeä rooli ruoan saavutettavuuden kannalta.

Tämän tutkimuksen tavoitteena on selvittää, (1) miten hyvin ruuan tuotanto saavuttaa kysynnän maailmanlaajuisesti eri kuljetusetäisyyksillä ja, (2) miten erilaiset ruoan tuotantoon ja liikenneverkkoon kohdistuvat shokit vaikuttavat kysynnän ja tarjonnan väliseen tasapainoon. Tutkimus perustuu paikkatietopohjaiseen saavutettavuusanalyysiin, jossa hyödynnetään maailmanlaajuisia aineistoja kuljetusverkostosta, sekä ruoan (ruis, vehnä, ohra, maissi, riisi, hirssi, durra, maniokki ja palkokasvit) tuotannosta ja kulutuksesta vuosina 2006–2010. Analyysin avulla on mahdollista laskea ruoan saavutettavuuspotentiaali tuotantoalueilta sinne, missä tuotteita kulutetaan. Menetelmä huomioi paitsi ruoan kysynnän ja tarjonnan määrän, myös näiden välisen verkostollisen kuljetuskustannuksen. Alustavat tutkimustulokset osoittavat ruoan saavutettavuuden vaihtelevan merkittävästi. Kun ruokaa pyritään jakamaan optimaalisesti alueellisella tasolla, etenkin Siperia, Arabian niemimaa, osa Australiasta sekä Keski-Afrikka ja Keski-Amerikka ovat haavoittuvimpia ruoan saavutettavuuden kannalta. Osa alueista kärsii heikosta saavutettavuudesta, vaikka kuljetusetäisyyttä kasvatettaisiin alueelliselta tasolta maailmanlaajuiseksi. Tutkimus on yhä käynnissä, ja seuraava tavoitteemme on arvioida ruoan tuotantoon ja kuljetusverkostoon kohdistuvien shokkien vaikutusta ruoan saavutettavuuden kannalta.

Asiasanat: ruokaturva, saavutettavuus, paikkatieto, ruokashokki, infrahazard

► **Matka-ajan yhteys perusterveydenhuollon mielenterveyspalveluiden käynteihin ja käyntien yhteystapaan Kainuussa 2015–2019 — Sosiaali- ja terveydenhuollon hoitoilmoitusrekisteriin perustuva tutkimus**
Tiina Lankila (Oulun yliopisto), Harri Antikainen (Oulun yliopisto)

Pitkät etäisyydet terveyspalveluihin voivat toimia terveyspalveluiden käyttöä vähentävänä tekijänä, vaikka väestön terveyspalveluiden tarve pysyisi samana tai kasvaisi. Tämä voi puolestaan vaikuttaa yksilön terveydentilaan sekä myös alueellisiin terveyseroihin. Tutkimuksen tarkoituksena on tarkastella mielenterveystyöhön liittyviä perusterveydenhuollon käyntejä Kainuussa vuosina 2015–2019 yhteystavan mukaan jaoteltuna. Tutkimuksessa selvitetään mielenterveyskäyntien alueellista vaihtelua, sekä matka-ajan yhteyttä käyntien määrään.

Aineistona on sosiaali- ja terveydenhuollon hoitoilmoitusjärjestelmän (HILMO ja AvoHILMO) rekistereihin pohjautuva potilasaineisto perusterveydenhuollon ja erikoissairaanhoidon palvelukäynneistä Kainuussa vuosilta 2015–2019. Aineisto sisältää tiedon kaikista tuona aikana tehdyistä sosiaali- ja terveydenhuollon käynneistä mukaan lukien käynnin yhteystavan sekä käyntien diagnoosit. Aineistosta on valittu tarkasteluun perusterveydenhuollon mielenterveystyöhön liittyvät käynnit, jotka on jaoteltu yhteystavan mukaan vastaanottokäynteihin, etäkäynteihin ja kotikäynteihin. Tutkimuksessa ovat mukana potilaat, joiden asuinpaikka seuranta-ajan viimeisimmän vuoden postinumeron ja kunnan perusteella oli Kainuussa. Potilasaineiston postinumerosijainteihin on laskettu Yhdyskuntarakenteen seuranta-aineistoon perustuvan 250mx250m väestöaineiston, tieverkkoaineiston ja terveysasemien sijaintien perusteella väestöpainotettu keskimääräinen matka-aika kunnan lähimmälle terveysasemalle kultakin postinumeralueelta.

Mielenterveyskäyntien määrä Kainuussa vaihtelee alueellisesti ja etäisyyden mukaan.

Alustavien tulosten mukaan kontakti- ja kotikäyntien määrä vähenee, ja etäkäyntien määrä kasvaa matka-ajan kasvaessa lähimmälle terveysasemalle. Potilaan sukupuoli, ikä, mielenterveysdiagnoosien lukumäärä ja lähin terveysasema on vakioitu tutkimuksessa.

Matkaetäisyyden ja käyntien määrän yhteyteen on tarpeellista kiinnittää huomiota palvelujen suunnittelussa, jotta väestölle voidaan tarjota tarpeen mukaiset palvelut asuinpaikasta riippumatta. Etäpalvelujen tarjoaminen kaukana terveydenhuollon yksiköistä asuville voi olla sekä terveyspalvelujen tarjoajan että asiakkaan näkökulmasta taloudellinen ratkaisu erityisesti harvaanasutuilla ja pitkien etäisyyksien alueilla.

Asiasanat: geoinformatiikka, paikkatieto, etäisyys, matka-aika, saavutettavuus, mielen-terveyspalvelut, rekisteritutkimus

► Exploring the factors affecting conflict intensity in Africa

Helena Tukiainen (University of Oulu), Päivi Lujala (University of Oulu)

During the last two decades, the countries in Africa have suffered from hundreds of thousands of civil conflict events (battles, explosions and remote violence, violence against civilians, protests and riots). The reasons for conflict and their intensity can be complex, varying from political and social factors (such as economy and population) to environmental factors (such as the closeness to cities, or the land-use and topography at a conflict site). In addition, the role of oil and gas installations, such as pipelines and fields, for conflict incidence and intensity have been pointed out in recent research. In this study, we investigate the factors that have an impact to conflict intensity (measured as fatalities) in Africa. Our aim is to explore the effect of three different variable groups on conflict intensity: oil and gas infrastructure, human factors and environmental properties. We do this by utilizing GIS-approach and statistical analysis based on regression models and variation partitioning. The results show that variables from all three groups are meaningful for conflict fatalities. The three variable groups contribute differently for fatalities at each conflict event type, but social and political factors (GDP, the amount of urban land-use and the number of ethnic groups at the conflict area) have the most prominent role across the conflict event types.

Keywords: civil conflict, natural resources, oil, GIS

► Kaupunkisuunnittelu pandemioiden ennaltaehkäisyn välineenä – RECIPE-tutkimushanke (2021–2024)

Soile Puhakka (ODL Liikuntaklinikka, Oulun yliopisto)

Tiivistelmää ei julkaista.

Asiasanat: kaupunkisuunnittelu, terveysvaikutusten arviointi, yhteiskehittely, tiedon käyttö, terveyshistoria, kansanterveys, terveyskäyttäytyminen, hyvinvointi, epidemia, pandemia, tartuntatauti, ympäristöterveys, biodiversiteetti, mikrobiomi, vastustuskyky

► **Measuring urban form density, mix and access networks**

Mikko Kärmenniemi (ODL Liikuntaklinikka, Elinikäisen terveyden tutkimusyksikkö, University of Oulu)

Abstract is not published.

Keywords: urban form, walkability

27 New North? Changing natural environments in high latitudes

Session leaders: Jan Hjort (University of Oulu), Helena Tukiainen (University of Oulu), Olli Karjalainen (University of Oulu)

Natural systems in the North have been observed to change faster and stronger than many other environments on the Earth. The amount of snow, ice and permafrost has decreased, organisms have spread to new areas, and water cycle has changed. Many of the changes are predicted to continue with an accelerating pace in the coming decades. Are the observed changes irreversible? Are we near or beyond critical tipping points in nature? Are we approaching new environmental conditions in the North? Northern environments and conditions can be defined broadly. Thus, we welcome presentations from different natural systems and geographical regions. The exploration of the northern environment can be based on field observations, modelling or theoretical discussions.

► **Consistent trait–environment relationships within and across tundra plant communities**

Julia Kemppinen (University of Oulu), Pekka Niittynen, Peter C le Roux, Mia Momberg, Konsta Happonen, Juha Aalto, Helena Rautakoski, Brian J Enquist, Aud H Halbritter, Brian Maitner, Miska Luoto

A fundamental assumption in trait-based ecology is that relationships between traits and environmental conditions are globally consistent. We use field-quantified microclimate and soil data to explore if trait–environment relationships are generalizable across plant communities and spatial scales. We collected data from 6,720 plots and 217 species across four distinct tundra regions from both hemispheres. We combined these data with over 76,000 database trait records to relate local plant community trait composition to broad gradients of key environmental drivers: soil moisture, soil temperature, soil pH and potential solar radiation. Results revealed strong, consistent trait–environment relationships across Arctic and Antarctic regions. This indicates that the detected relationships are transferable between tundra plant communities also when fine-scale environmental heterogeneity is accounted for, and that variation in local conditions heavily influences both structural and leaf economic traits. Our results strengthen the biological and mechanistic basis for climate change impact predictions of vulnerable high-latitude ecosystems.

Keywords: biogeography, plant functional traits, tundra

► The Geography of Snow

Pekka Niittynen (University of Helsinki & The Arctic University of Norway)

Winter is the prevailing season in the North. Especially in the Arctic, snow covers the ground for most of the year and thus controls the ecosystem functions and ground-level conditions. Furthermore, snow cover duration and depth affect species distributions in the Arctic via multiple mechanisms and the whole existence of many tundra species depends on certain snow conditions. At the same time, snow season has drastically shortened in the Northern Hemisphere due to warming climate. Nevertheless, even if we can see the big picture clearly, quantifying, monitoring or modelling the local snow conditions in the past, present and future is still challenging. Thus, the impacts of changing snow conditions are often ignored in studies of northern ecosystems.

In this presentation, I summarize the recent results of my studies on how snow creates and maintains biodiversity in the tundra, affects spatial patterns of vegetation and regulates microclimates. I review the most severe knowledge gaps in understanding the geography of snow and present potential solutions for some of the shortcomings based on my on-going research. I demonstrate the potential of fine-scale satellite imagery to study the snow cover trends from the last decades in details and show how these local trends may be more complex than previously thought. Altogether, snow has a multifaceted role in the northern ecosystems and demands for multidisciplinary and collaborative research – a perfect niche for a physical geographer.

Keywords: snow, arctic, alpine, tundra

► Frozen ground ice content – a key factor in assessing changing permafrost conditions

Olli Karjalainen (University of Oulu), Juha Aalto (Finnish Meteorological Institute), Mikhail Z. Kanevskiy (University of Alaska Fairbanks), Miska Luoto (University of Helsinki), Jan Hjort, (University of Oulu)

Ground ice content of permafrost, alongside ground temperature and organic carbon content, chiefly dictate the consequences of changing permafrost conditions to ecosystems and society. Ice-rich soils are especially sensitive to changing environmental conditions inflicted either by human activity or natural change. In the warming climate, melting ground ice has potential to cause dramatic responses in the top layers of soils. For example, reduced soil volume can lead to surface subsidence over extensive areas or rapid landslides at a more local scale. Moreover, ground ice melt may cause notable geomorphological and hydrological changes in the form of thermokarst. These permafrost thaw-related processes often coincide with human activity in the Arctic and are increasingly threatening the soil stability and integrity of infrastructure, for example. The information on the amount and distribution of ground ice has a key role in the assessments of the future development of the Arctic soils. The current spatial information on ground ice content, however, is generalized or missing from many regions. To address this gap, we use unprecedentedly extensive observational data and statistical modelling to present a novel map of ground ice content for the Northern Hemisphere permafrost region at a 1-km spatial resolution. The map is suggested to have applicability in broad-scale assessments of permafrost geomorphology, ecology and biogeochemistry at scales which are more relevant to local-scale processes than in previous products.

Keywords: permafrost, ground ice, climate change, statistical modelling

28 Vesiympäristöjen moninaiset maantieteet

Työryhmän vetäjät: Janne Alahuhta (Oulun yliopisto), Marja Lindholm (Oulun yliopisto)

Vasta viime vuosina on havahduttu siihen, että globaali muutos on dramaattisesti muuttanut ja tulee edelleen muuttamaan vesiympäristöjä. Erityisesti pohjoiset sisävedet ja meret ovat uhattuina. Tämä on hälyttävää, koska vesiympäristöjen biologinen monimuotoisuus on poikkeuksellisen suurta ja vesistöt tarjoavat lukuisia ekosysteemipalveluita ihmisille, kuten juomavettä, ruokaa ja virkistysmahdollisuuksia. Vesiympäristöjen heikkeneminen johtuu useista, samaan aikaa toimivista ihmislähtöisistä tekijöistä kuten ilmastonmuutoksista, maankäytön muutoksista, resurssien liiakkäytöstä ja saastumisesta. Tässä sessiossa on tarkoitus esitellä tutkimuksia, joissa on tutkittu erilaisia muutoksia vesiympäristöissä hyödyntäen erilaisia tekniikoita ja menetelmiä, kuten kaukokartoitusta, laserskannausta ja in situ näytteitä. Kaikki luonnonmaantieteen lähestymistavat ovat tervetulleita sessioon riippumatta tutkimusten maantieteellisestä alueesta ja spatiaalisesta tai ajallisesta mittakaavasta.

► Kunnostukset Perämerellä

Suvi Saarnio (Pohjois-Pohjanmaan ELY-keskus)

Interreg Nordin ja Lapin liiton rahoittamassa SeaCOMBO-hankkeessa (<https://www.seacombo.com>) tehdään raporttia Perämeren kunnostuksiin liittyen. Raportissa käydään läpi Perämerelle soveltuvia kunnostusmenetelmiä, kunnostukseen soveltuvia kohteita ja kunnostuksiin liittyviä riskejä. Lisäksi raportissa esitellään Perämeren kansallispuistossa yhteistyössä Metsähallituksen kanssa tehtyä Kanadanvesiruton poiston pilotoitintia, ja tulevaisuuden suunnitelmia kunnostusten suhteen. Esityksessä käydään tiivistetysti läpi yllä mainittuja teemoja.

Asiasanat: kunnostus, Perämeri, kanadanvesirutto

► Elottoman ja elollisen luonnon välinen suhde ajassa – esimerkkinä järvien vesikasvit

Marja Lindholm (Oulun yliopisto), Jani Heino (Suomen ympäristökeskus), Jan Hjort (Oulun yliopisto), Maija Toivanen (Oulun yliopisto), Helena Tukiainen (Oulun yliopisto), Heikki Toivonen & Janne Alahuhta (Oulun yliopisto)

Luonnon monimuotoisuuden tutkimus on keskittynyt pääasiassa biologiseen monimuotoisuuteen, vaikka luonto on sekä elollista että elottomista elementeistä koostuva kokonaisuus. Biologisen monimuotoisuuden eli biodiversiteetin ja elottoman luonnon monimuotoisuuden eli geodiversiteetin välinen teoreettinen suhde on vahva, mutta empiiristä pohjaa tälle suhteelle on vielä suhteellisen vähän. Tätä suhdetta ei ole tutkittu juuri lainkaan ajallisesta näkökulmasta. Esittelemme alustavat tulokset tutkimuksestamme, jonka tarkoituksena on selvittää, kuinka vakaa biologisen monimuotoisuuden ja geodiversiteetin suhde on ajassa. Pyrimme selvittämään, näkyykö järvien vesikasviyhteisöissä ajallisia säännönmukaisuuksia suhteessa geodiversiteettiin. Aineistomme koostuu boreaalisista järvistä neljänä eri vuosikymmenenä (1970–2010) kartoitetuista vesikasveista ja näiden järvien läheisestä geodiversiteetistä. Käytämme yleistettyä lineaarista mallintamista ja beetaregressiota tutkiaksemme kahden erilaisen biologisen

monimuotoisuuden indeksin, lajimäärän ja ekologisen ainutlaatuisuuden, ja geodiversiteetin välistä suhdetta ajassa. Tämä on ensimmäisiä biodiversiteetin ja geodiversiteetin välistä ajallista suhdetta tutkivia tutkimuksia, ja tulokset tuovat uusia näkökulmia elottoman ja elollisen luonnon väliseen suhteeseen.

Asiasanat: vesikasvit, luonnon monimuotoisuus, biodiversiteetti, geodiversiteetti, järvet, ajalliset trendit

► Vesikasvien ekoregiot Pohjois-Amerikassa

Janne Alahuhta (Oulun yliopisto), Jorge Garcia-Giron (Suomen ympäristökeskus)

Eliömaantieteellisiä alueita (ekoregioita) tutkitaan aktiivisesti eri ekosysteemeissä, koska ne auttavat meitä paremmin ymmärtämään miten lajit ovat levittäytyneet laajassa mittakaavassa ja antavat tärkeää tietoa suojelualueiden perustamiseksi. Tässä työssä tutkimme, miten kalojen perusteella muodostetut ekoregiot toimivat sisävesien kasveilla Pohjois-Amerikassa. Tutkimme erityisesti ekoregioiden sisäistä yhtenäisyyttä ja niiden välistä erotettavuutta suhteessa lajien vaihtumaan (species replacement) ja lajimäärästä johtuviin eroihin (richness difference). Selvitimme myös, miten eri ympäristötekijät vaikuttavat ekoregioiden rakenteeseen. Tuloksemme osoittavat selkeitä maantieteellisiä säännönmukaisuuksia vesikasveille, kun niiden yhteisöt ovat sisäisesti yhteneväisimpiä ja samankaltaisempia toistensa kanssa eteläisillä ja pohjoisilla alueilla. Vesikasvien ekoregioiden yhteneväisyyttä ja erottelevuutta selitti yhtäläillä lajien vaihtuma ja lajimääräerot. Kun tutkimme erikseen eri elomuotoja, niin vahvimmat tulokset löysimme ilmaversoisille ja kelluslehtisille kasveille. Vesikasvien ekoregioita selittivät eniten vuoden keskilämpötila ja maiseman epätasaisuus, mutta myös alkaliniteettiä, ekoregion koolla ja historiallisilla tekijöillä oli merkitystä. Tutkimuksemme tulokset viittaavat siihen, että ilmasto suodattaa lajeja laajassa mittakaavassa ja siten vaikuttaa vesikasvien ekoregioihin. Työmme tulokset myös korostavat, että tietyn biologisen ryhmän mukaan muodostetut ekoregiot eivät välttämättä sovellu suoraan muiden ryhmien ekoregioiksi. Tämä tutkimus on ensimmäinen askel tutkittaessa muiden vesieliöiden kuin kalojen ekoregioita.

Asiasanat: regionalisaatio, ekoregiot, vesikasvit

29 Oikeus tilaan: käsitteellisiä ja menetelmällisiä avauksia

Työryhmän vetäjät: Päivi Rannila (Turun yliopisto), Virve Repo (Turun yliopisto)

Tilaan liittyviä oikeuksia on sivuttu maantieteellisessä tutkimuksessa esimerkiksi kaupunkimaantieteen, oikeusmaantieteen, poliittisen maantieteen ja vankeusmaantieteen näkökulmista. Tutkimuksille on ollut ominaista niiden linkittyminen sekä kansainvälisiin tutkimuskeskusteluihin että ajankohtaisiin yhteiskunnallisiin haasteisiin. Tilallisia oikeuksia arvioidaan, toteutetaan ja kyseenalaistetaan monenlaisissa arkipäivän tilanteissa, liittyen vaikkapa kaupunkitiloihin, naapurustoihin, suunnitteluun, maankäyttöön, instituutioihin tai rajoihin – joitain esimerkkejä mainitaksemme. Oikeuksien tarkastelu toisistaan poikkeavista tutkimuskeskusteluista käsin on tuottanut käsitteellisiä ja menetelmällisiä avauksia, joiden potentiaalia ei ole vielä täysin hyödynnetty suomalaisessa maantieteessä. Tartumme tähän epäkohtaan kutsumalla tilallisista oikeuksista, rajoituksista, vastuista ja mahdollisuuksista kiinnostuneita tutkijoita verkostoitumaan. Sessio toteutetaan 'pyöreän

pöydän keskusteluna’, jonka pohjana toimivat lyhyet, 5–10 minuutin alustukset teemaan sopivista käsitteellisistä tai menetelmällisistä kysymyksistä. Esiintyjät voivat esimerkiksi tarkastella kriittisesti jotakin käsitettä tai lähestymistapaa; pohtia niiden sopivuutta pohjoismaiseen tai suomalaiseen yhteiskunnalliseen kontekstiin; keskustella käsitteisiin liittyvistä käännösongelmista; esitellä omia käsitteellisiä tai menetelmällisiä avauksiaan; tai kertoa menetelmällisistä kokeiluistaan ja niihin liittyvistä tutkimuseettisistä kysymyksistä. Valmiiden tutkimusten lisäksi keskustelemme mielellämme myös keskeneräisistä tai suunnitteilla olevista tutkimuksista. Pyri otsikoimaan esitysehdotuksesi siten, että siitä ilmenee käsite, menetelmä, lähestymistapa tms., josta puhut alustuksessasi. Session kommentaattorina toimii professori Ari Lehtinen (Itä-Suomen yliopisto).

► Omaisuus ja omistajuus valtana tilaan

Siiri Pyykkönen (Turun yliopisto)

Esityksessä keskityn omaisuuteen (‘property’) ja omistajuuteen (‘ownership’) maantieteellisessä tutkimuksessa. Omistajuuden kysymykset ja merkitys suhteessa tilaan ovat vain vähän suomalaisessa maantieteessä tutkittu teema, joka kuitenkin vaikuttaa vahvasti siihen, kenellä on oikeus hallita tilaa ja valta vaikuttaa tilan käyttöön sekä kehitykseen. Omistajuus ja omaisuus eivät kuitenkaan muodostu vain objektin ja omistajan suhteena toisiinsa, vaan enemmänkin jonkun tahon oikeutena objektia kohtaan ja valtana siirtää näitä oikeuksia muulle henkilölle tai taholle. Kansainvälinen akateeminen keskustelu omistajuuksista lähtee usein omaisuuden määrittelyn kautta, ja juuri omaisuuden hallinnan kautta pyritään hahmottamaan maailmaa omistajuuksina. Suomessa omaisuus ja omistajan oikeudet määrittivät muun muassa Maankäyttö- ja rakennuslaissa (1999), mutta omaisuuden sijaan keskitytään vahvasti omistajuuden määrittämiseen. Omaisuuden ja omistajuuden termien erojen hahmottaminen on haastavaa ja termit jäävät usein epäselviksi. Esityksellä haluankin herättää keskustelua, miten suomalaisessa maantieteessä käsitetään omaisuus ja omistajuus ja miten termit eroavat toisistaan maantieteellisessä keskustelussa.

Asiasanat: omaisuus, omistajuus

► Lähiön sosiaaliset infrastruktuurit ja oikeus tilaan

Jenni Kuoppa (Turun yliopisto)

Arkiset sosiaaliset infrastruktuurit näyttäytyvät kaupungeissa yhä tärkeämpinä, kun budjettileikkaukset osuvat tärkeisiin hyvinvointia tukeviin palveluihin, ja kun kaupunkien kilpailukykyyn keskittynyt kehittämisspolitiikka jättää varjoonsa nykyisten asukkaiden elinolojen parantamisen ja erityisesti haavoittuvien ryhmien tarpeet. Mahdollisuudet kaupunkitilan käyttöön eriytyvät, ja samalla sosiaalinen polarisaatio muodostuu yhä vakavammaksi ongelmaksi kaupungeissa. On tarpeen tutkia arkisia tiloja, joihin voi liittyä lupaus mahdollisuudesta kohti sosiaalisesti oikeudenmukaisempaa kaupunkia.

Alustuksessa nostan esiin kysymyksen käsitteen ”sosiaalinen infrastruktuuri” hyödynnettävyydestä tilaan liittyvien oikeuksien tutkimuksessa. Käsite viittaa fyysisten tilojen, niihin kytkeytyviin sosiaalisten käytäntöjen ja toimijoiden verkostoihin, jotka luovat mahdollisuuksia sosiaaliin kohtaamisiin ja yhteyksiin, tarjoavat tukea ja vahvistavat kokemuksia sosiaalisesta oikeudenmukaisuudesta, solidaarisuudesta

ja yhteenkuuluvuudesta (Latham & Layton 2019, 3; Klinenberg 2018). Sosiaalisella infrastruktuurilla on usein jokin muu erityinen funktio; esimerkiksi urheilukentät, ostarit, päiväkodit tai uskonnolliset tilat voivat toimia sosiaalisina infrastruktuureina. Sosiaalinen infrastruktuuri on käsitteenä herättänyt kasvavaa kiinnostusta, mutta on tarpeen paremmin eritellä, mikä on tai ei ole sosiaalista infrastruktuuria, ja miksi.

Sosiaaliset nfrastruktuurit toteutuvat ja todellistuvat käytettyinä erityisissä paikoissa ja tilanteissa. Ne ovat olemassa toisaalta osana vakiintuneita suhteita, verkostoja ja jatkuvia institutionalisoituneita käytänteitä. Niihin liittyy tavanmukaisuutta: normit ja rutiinit vaikuttavat siihen, kuinka infrastruktuurit toimivat ja kuinka niitä voidaan hyödyntää. Näissä käytöissä ja instituutioissa määrittä se, kenellä on pääsy sosiaalisiin infrastruktuureihin. Mitä haasteita niiden syntymiseen ja toimintaan liittyy? Voiko sosiaalisen infrastruktuurin käsite tuoda jotain uutta tilaan liittyvien oikeuksien tutkimukseen? Alustuksessa hyödynnän alustavia havaintoja lähiöiden sosiaalisiin infrastruktuureihin liittyvästä tutkimuksesta.

Asiasanat: sosiaalinen infrastruktuuri, lähiöt, oikeus tilaan

► Vapaaehtoistyöetnografia tilallisten oikeuksien tarkastelussa

Mia Jaatsi (Turun yliopisto)

Tämä esitys avaa keskustelua tuoreesta menetelmällisestä kokeilusta suomalaisessa kaupunkimaantieteellisessä tutkimuksessa: vapaaehtoistyöetnografiasta. Turun yliopiston Oikeus lähiötilaan -tutkimushankkeessa (2020-2022) kerättiin kevään 2021 aikana etnografista aineistoa toimien samalla vapaaehtoistyössä Helsingin Kontulassa sijaitsevassa liikkuvassa päiväkeskuksessa. Vapaaehtoistyöetnografian menetelmällisenä tavoitteena oli paitsi liikkua urbaanissa marginaalissa ja saavuttaa hiljaisia asukaryhmiä, myös toimia vastavuoroisesti ja harjoittaa eettisesti korkeatasoista tutkimusta. Vapaaehtoistyöetnografia valotti tutkijalle uudenlaisia tilallisia kerrostumia ja arjen todellisuuksia, joilla keskustelua oikeuksista olla ja elää kaupungissa voidaan monipuolistaa. Kokeilun perusteella vapaaehtoistyöetnografialla on potentiaalia soveltua kriittisen oikeus- ja kaupunkimaantieteen tilallisiin tarkasteluihin, mutta tutkijan kaksoisrooliin liittyy myös menetelmällisiä ja tutkimuseettisiä haasteita. Esitys kutsuu kriittisesti keskustelemaan vapaaehtoistyöetnografian mahdollisuuksista maantieteellisessä tutkimuksessa sekä laajemmin tutkijan vastuista ja vastavuoroisuudesta tutkittavalla alueella.

Asiasanat: vapaaehtoistyöetnografia, tutkimusetiikka, urbaani marginaali

► Karseraalitila vai vankeustila? Käsitteiden suomentamisen haasteet

Virve Repo (Turun yliopisto)

Tutkija saattaa urallaan joutua tilanteeseen, jossa englanninkielinen käsite täytyy suomentaa ymmärrettävästi ja siten, ettei käsitteen merkitys muuttuisi käännöksessä ratkaisevasti. Tämä saattaa aiheuttaa yllättävän kiperiäkin pohdintoja. Tässä esityksessä tuon työryhmässä keskusteltavaksi käsitteen, jota käytin omassa väitöskirjassani ja jonka kääntäminen suomeksi lektiota varten tuntui erityisen haastavalta. Käsite ”carceral space” oli yksi väitöskirjani keskeisistä käsitteistä. Käsite on varsin olennainen ”carceral” maantieteessä (carceral geography). Tämä maantieteen alalaji on keskittynyt varsinkin vankilatutkimukseen. Väitöskirjani laajensi tutkimuksen koskemaan myös sekä laitoksia

(vanhainkoti, gero-psykiatrinen osasto) että yhteisöä (Christiania). Tällöin käsitteen kääntämisen haaste tuli vastaan, kun en voinut puhua suoraan vankilaitiloista. Aika pian hylkäsin anglismin ”karseraali” ja halusin oikeasti suomentaa käsitteen. Vaihtoehtoina olivat muun muassa ”rangaistustila”, ”kurinpitotila” ja ”rajoitustila”. Näissä kaikissa vaihtoehtoissa oli omat ongelmansa koskien muun muassa tutkittujen tilojen luonnetta ja tarkoitusta. Päädyin lopulta käyttämään käsitettä ”vankeustila”. Suurin syy tähän oli alkuperäisen käsitteen relationaalinen luonne. Koen, että myös suomeksi ”vankeus” voidaan kokea relationaalisesti, eli ihminen voi kokea olevansa ja elävänsä vankeudessa, vaikka hän ei olisikaan virallisesti vangittu.

Asiasanat: käsitteet, vankeustila, carceral geography

► Irakilaisnaisten käsitykset heidän oikeuksistaan tiloihin

Katri Gadd (Ihmisoikeusinstituutti, Åbo Akademi)

Jokainen kasvaa useiden aikatilallisten normien ja lakien vallitessa. Useat normit kehollistuvat meihin vaikuttaen, lähes automaattisesti, siihen minkä koemme olevan meille aikatiloissa mahdollista. Eri tiloissa vallitsevat erilaiset oikeudet, velvollisuudet sekä vastuut, jotka kaikki ovat jatkuvassa, joskaan eivät samanaikaisessa muutoksessa. Tämä saattaa aiheuttaa (kehollisia) jännitteitä, joiden vaikutuksesta oikeudet saattavat olla laillisesti turvatut, mutta eivät toteudu käytännön elämässä.

Tässä esitelmässäni kerron alustavista tutkimustuloksistani liittyen irakilaisien naisten elämään Irakissa ja siitä miten eri normit ja lait, esimerkiksi Irakin perustuslaki, uskonnolliset lait, heimolaki, perheen normit ja naisen omat arvot vaikuttavat naisen elämään ja toimintaan eri tiloissa ja tilanteissa, mihin tiloihin heillä on oikeus ja minkälaisina sekä mikä tai ketkä nämä oikeudet kulloinkin määrittävät. Esitelmässäni herätän keskustelemaan samanaikaisesti oikeuksista, velvollisuuksista ja vastuista.

Kyselytutkimuksen, irakilaisien naisten kirjoittamien päiväkirjojen sekä heidän tekemiensä taideteosten kautta kuvaan yhtäältä miten tutkimukseni irakilaisnaiset kokevat ja ymmärtävät oikeutensa ja minkälaisia normeja eri tiloissa vallitsee heidän näkökulmastaan. Näitä tiloja ovat esimerkiksi koti, katu, ravintola, Internet tai vaikka oma keho. Toisaalta kuvaan sitä, miten nämä naiset navigoivat näissä moninaisia odotuksia sekä sääntöjä samanaikaisesti yhdistävissä tiloissa saavuttaakseen elämässään sen mitä haluavat.

Alustavien tulosteni valossa vaikuttaisi siltä, että tiettyjen oikeuksien nauttiminen vaatii joidenkin velvollisuuksien tai vastuiden huomiotta jättämistä. Tämä tulee esiin eritoten monioikeudellisissa järjestelmissä, joita monet postkolonialistiset valtiot, kuten Irak, ovat. Tämä on toisaalta vartenotettava tieto myös muualta Suomeen muuttaneiden henkilöiden suomalaiseen yhteiskuntaan integroitumisen näkökulmasta.

Asiasanat: oikeus, velvollisuus, monioikeudellinen järjestelmä, nainen, Irak

► Miten soveltaa ‘lain väkivallan’ käsitettä karkotustutkimuksessa

Eveliina Lyytinen (Siirtolaisuusinstituutti)

Turvapaikanhakijoiden karkotuksia on tutkittu erityisesti ihmiskärsimyksen ja maahanmuuttotoiminnan rakenteellisen väkivallan muotoina. Alan tutkimuksissa on käytetty erilaisia väkivallan käsitteitä, kuten hallinnollista, byrokraattista ja hidasta väkivaltaa.

Näissä väkivallan käsitteissä tarkastelun pääpaino on usein väkivallan ajallisuudessa. Haluan kuitenkin tutkimuksessani korostaa tilan ja tilallisuuden merkitystä karkotusten väkivallan analyysissä ja siksi sovellan oikeusmaantieteellistä lain väkivallan (engl. law's violence, legal violence) käsitettä analyysissäni. Keskustelunavauksessani nostan esiin erityisesti kolme haastetta liittyen 'lain väkivallan' analyysiini: käsitteen käyttö suomeksi, sen tilallinen tulkinta ja kokemuksellisuuden esiintuominen.

Asiasanat: laki, väkivalta, turvapaikanhaku, poliisi, karkotus

30 Tourism geographies for sustainability

Session leaders: Henna Konu (Natural Resources Institute Finland LUKE), Kati Pitkänen (Finnish Environment Institute SYKE), Riikka Puhakka (University of Helsinki), Kaarina Tervo-Kankare (University of Oulu)

Tourism and recreation have a twofold relationship to many of the current environmental and societal crises. While they are influenced by and may contribute to these crises, they also have potential in offering solutions and creating awareness, and thus mitigating the negative impacts. For example, biodiversity loss and climate change, and the Covid-19 pandemic, call for rapid systemic changes in tourism and recreation and have (had) a huge impact on the travel and visitation patterns globally. In Finland, nature-based and second-home tourism, together with proximity tourism have become more popular among domestic visitors. The recent developments and identified challenges have also directed the attention on diverse sustainability aspects e.g. at destination level, in business activities and in tourist and visitor behaviour. While the society has become more urban and multi-cultural, relationships to nature are increasingly diversified. These changes may lead, for instance, to growing use pressure in nature destinations and changing characteristics of the visitors. The traditional image of a nature tourist/ outdoor recreationist may have to give space for new types of nature users and lovers, which has further influence on the sustainability of tourism and recreation. Meanwhile, the complex and inextricable links between human health and the health of natural systems are increasingly recognized. In this session, we welcome presentations that deal with the role of tourism and recreation in providing solutions, new approaches and lessons learned from the crises that we are or have been facing.

► Nature for all? Studying immigrant adolescents' relationship with and recreational use of nature

Kati Pitkänen (Finnish Environment Institute SYKE), Riikka Puhakka (University of Helsinki), Iikka Oinonen (Finnish Environment Institute SYKE)

Ways of using nature and experiencing it are increasingly diversified as the Finnish society is becoming more urban and multi-cultural. Sustainable nature tourism and recreation necessitate the inclusion of these changing ways and experiences. On the other hand, nature-based recreation can be one possible solution to promote the health and well-being as well as social integration and cohesion of people. In this study, we apply the framework of nature-based integration to study the immigrant adolescents' relationship with and recreational use of nature as well as the potential of nature to support their integration in the Finnish society. The study is based on a survey data

collected from 7-9th grade students in Lahti (n=1 121). In the analysis, we compare the immigrant and non-immigrant adolescents' responses. The results show that nature is an important part of the youth's everyday lives despite their ethnic or immigrant background. However, there are also some differences between the immigrant and non-immigrant groups. Based on the study results, nature can potentially have an important role in the successful integration of the immigrant youth in Finland.

Keywords: nature-based recreation, youth, immigrants, integration

► Adolescents' lived nature experiences and the perceived well-being effects

Riikka Puhakka (University of Helsinki), Eemeli Hakoköngäs (University of Eastern Finland)

Adolescents' decreasing contact with nature has raised worries in urbanized societies. Meanwhile, the well-being and health benefits of nature are increasingly recognized. Interacting with nature increases self-esteem and mood, helps to recover from stress, and improves the ability to concentrate. Natural settings motivate to exercise, and exposure to a diverse microbiota enhances immune regulation. Experiences in nature are also positively associated with stronger pro-environmentalism.

In this study, we analyse adolescents' leisure time experiences in natural environments. We pay attention to adolescents' outdoor activities, leisure time environments, and experiences of well-being. The study is based on 39 thematic writings written by 15- to 16-year-olds living in the city of Lahti in spring 2020. Adolescents' accounts of their nature experiences were analysed qualitatively by following the principles of hermeneutic phenomenology.

The findings show that the adolescents' nature experiences were often spontaneous, enabled by easy access to natural settings in urban areas. Although the participants described visiting natural environments as an everyday activity, they aimed to escape daily life filled with requirements and social norms. The adolescents described multisensory experiences including not only the visual, but also the audio, olfactory and tactile stimulation of natural elements. Natural environments afforded possibilities for shared experiences with friends and family but also for solitary experiences associated with positive meanings. The nature experiences were typically addressed by describing the psychological benefits, such as calming down or improving mood and positive feelings. Positive nature experiences are important to foster a lifelong nature connection and feelings of well-being.

Keywords: adolescents, well-being, experience, nature, outdoor recreation

► Nature's eudemonic wellbeing benefits

Johanna Jämsä (University of Turku)

Nature's wellbeing benefits are well researched. However, most research on this is done from the hedonic perspective that focuses on the immediate benefits like decreased stress, lower blood pressure or better mood. In my PhD research, a central concept is eudemonia, which has not yet had the attention in the nature context it deserves.

Eudemonic perspective takes a long-term view on human wellbeing by focusing on the benefits that make life feel meaningful. My research asks how nature supports Turku

inhabitants 1) self-acceptance, 2) autonomy, 3) meaningful life, 4) personal growth, 5) good social relations and 6) environmental mastery. All dimensions of eudemonic wellbeing.

I approach the question by utilizing a mixed-method approach, using both quantitative and qualitative data:

- 1 Public Participatory GIS (PPGIS) data of Turku inhabitant's outdoor behavior and the ecosystem services assigned to different outdoor places
- 2 Writings of the Turku inhabitants relationship to nature created in our *Luovasti luonnosta* creative writing workshops developed with community artists Niina Aho and Satu Suvanto

Age groups compared in this study are 15 to 24 years old and 60+ years old.

Asiasanat: eudemonia, nature's wellbeing benefits, creative methods, PPGIS

► Outdoor recreation and nature's contribution to well-being in a pandemic situation – Case Turku, Finland

Nora Fagerholm (University of Turku), Salla Eilola, Vesa Arki

Urban green infrastructure provides a range of experiences for people and various health benefits that support human well-being. To increase urban resilience, exceptional situations, such as the covid-19 pandemic, are important to learn from. We aimed to understand how the residents in Turku, a middle-sized city in Finland, perceived their outdoor recreation changed and how nature contributed to their subjective well-being during the early phases of the pandemic. Sites of outdoor recreation and associated ecosystem service benefits were gathered through a map-based survey. In addition, the contribution of nature on subjective well-being was measured through statements and the perceived changes in outdoor recreation behaviour through self-reported number of days and open responses. Data was analysed through quantitative, qualitative and spatial methods.

The results show that nearly half of the respondents increased outdoor recreation. The spatial analysis revealed that the most often visited recreation sites were near forests, semi-natural areas and housing areas as well as relatively close to respondent's residence. Furthermore, outdoor recreation increased at sites offering multiple cultural ecosystem service benefits. The results indicate that people's opportunities to adapt to the pandemic conditions differ greatly. The nature's contribution to subjective well-being during COVID-19 was important regardless of respondent's outdoor recreation behaviour. Our study highlights that urban planning should respond to different needs for outdoor recreation in order to widely, and in a just way, promote the well-being benefits of urban nature during a pandemic, and to increase the resilience of the city and its residents.

Keywords: covid-19, ecosystem services, Finland, green space, public participation geographical information systems (PPGIS)

► Securing sustainable snow for winter tourism industry – SnowApp climate service as a decision-support tool for resort management

Ilona Mettinen (Arctic Centre, University of Lapland), *Martin Coath* (Arctic Centre, University of Lapland), *Roxana Contreras* (Arctic Centre, University of Lapland), *Jusu Toivonen* (Rukakeskus Ltd.)

Downhill skiing is an important branch of winter tourism in Northern Finland. Winter tourism industry relies on cold climatic conditions and reliable snow cover for economical success. In Northern Finland, climate change is expected to decrease snow cover days by 20-30 %, and climate change influences also the amount and quality of snow. Particularly the early season conditions are at risk.

Snowmaking and snow storage are increasingly used as adaptive strategies for improving snow security in ski resorts. This presentation introduces the SnowApp, a climate service for winter tourism industry that was co-designed by a multidisciplinary case study team in the Blue-Action: Arctic Impact on Weather and Climate (EU Horizon 2020) project in 2016-2020, with Rukakeskus Ltd as the pilot company.

The SnowApp climate service offers a reliable 4-week forecast on snowmaking conditions and is particularly useful in predicting longer warm spells such as those in the early winter 2018. The SnowApp can help ski resorts to optimize the timing of snowmaking so that energy consumption and costs are minimized while early season start and highest possible customer experience are ensured. The SnowApp can be replicated in other ski resorts in Finland and potentially in all snowy countries.

The Blue-Action project received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 727852.

Keywords: climate service, ski tourism, climate change, snow security

► Evaluating local carbon compensation models for tourism

Henna Konu (Natural Resources Institute Finland LUKE), *Kaarina Tervo-Kankare* (University of Oulu), *Èlise Lépy* (University of Oulu)

Climate crisis is more evident than ever, and tourism industry should contribute to mitigation activities and find solutions for considerably reducing its carbon footprint. In many cases, however, emission reductions fail to be sufficient and carbon neutrality is difficult, if not impossible, to obtain. To reach carbon neutrality, compensation or offsetting of the remaining emissions is thus essential. Compensation does, however, appear surprisingly complex, especially in the case of multifaceted tourism industry.

To support the industry in its mitigation efforts, we are developing a framework for evaluating the suitability of diverse local CO₂ compensation approaches and models for tourism sector. The framework includes two main themes: issues and criteria that are linked to the region/area in which the compensation activities take place, and issues and criteria connected to the feasibility, credibility, and transparency of the compensation model(s). The first theme includes the evaluation of region's potential for carbon offsetting (e.g., carbon storage potential, suitable areas for the compensation activity, and the potential to offset emissions of tourism sector) and the additional benefits/synergies for other (cultural) ecosystem services that support tourism activities (e.g., biodiversity, landscape, and recreational values). The second theme evaluates the compensation activity in terms of credibility and acceptability issues. Currently, the framework development is still in progress.

In this presentation, we will present the current version of the evaluation framework and provide viewpoints to the key insights and challenges faced in the development.

Keywords: local carbon compensation, carbon neutrality, tourism

► **Using electricity data for second home research: prospects and challenges**

Janika Raun (University of Helsinki), *Pasi Okkonen* (University of Helsinki), *Olle Järv* (University of Helsinki), *Manu Rantanen* (University of Helsinki), *Torsti Hyyryläinen* (University of Helsinki)

Abstract is not published.

Keywords: second home, Covid-19, electricity data, South-Savo, mobility

► **Institutional perspective to sustainable tourism and tourism governance in protected areas**

Aapo Lunden (University of Oulu)

The presentation aims to discuss nature-based tourism (NBT) cultures in Finland from an institutional perspective. The presentation draws from the author's PhD project, with the aim of (I) analysing changes in tourism governance (focusing on Parks & Wildlife, Metsähallitus) in protected areas in the past two decades, and (II) to discuss new institutional theory in explaining how changes and reforms at the level of governance and governing organisations influence sustainable tourism frameworks and ideals in Finland.

Empirically, the presentation draws from ongoing work analysing Parks & Wildlife annual reports, national, regional and destination level tourism strategies and key sustainable tourism documents of Metsähallitus. Its premises is to explore the challenges related to the Parks and Wildlife's double aim (protect and use) and triple goal (conserve, provide opportunities for leisure, economic utilisation) while increasingly acknowledging tourism's negative contribution into some of the modern societal unsustainabilities.

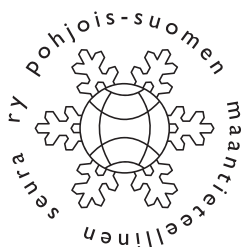
By drawing from institutional theory, the presentation discusses sustainability challenges in protected areas tourism through four different ethe: the mutualistic symbiotic governance ideal, the stewardship based administrative ethos, efficiency underlining organisational logics, and cultural ethos of universal access. By building on institutional logics perspective, the presentations looks at and problematise institutional logics and traditions and governance myths that guide sustainability frameworks in protected area tourism.

Keywords: sustainable tourism governance, institutional theory, governance logics



Maantieteen päivät on vuosittain Suomessa järjestettävä maantieteilijät ja aluetieteilijät yhteen kokoava tieteellinen konferenssi. Vuonna 2021 tapahtuma järjestetään Oulussa 4.–5.11. yhteistyössä Oulun yliopiston maantieteen tutkimusyksikön, Alue- ja ympäristötutkimuksen seuran, Pohjois-Suomen Maantieteellisen Seuran, Suomen Maantieteellisen Seuran ja Oulun yliopiston maantieteen opiskelijoiden ainejärjestön Atlas ry:n kanssa.

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