

Parallel session 3C-1.1

Infrastructures of extended urbanisation

Tuesday 12 November, 11.30 – 14.00

26 Bedford Way, Room 113

Chair: **Dr Andrew Harris**, Associate Professor, Department of Geography, UCL

Discussant: **Prof. Christian Schmid**, Future Cities Laboratory, ETH Zurich

The Masking of an Urban Southern Ocean

Charity Edwards, Lecturer, Department of Architecture, Monash University, Melbourne

This paper will consider the operationalisation of spaces least likely to correspond with traditional notions of 'the urban', such as the wilderness of the Southern Ocean. For emergent realities of planet-scaled urban processes – and increasing awareness of the imbrication of the deep sea, coastlines and cities across the globe – register an urgent need to extend current ontologies of 'the urban'.

Often described as at 'the end of the Earth', the Southern Ocean is an extraordinary geo-imaginary, removed from everyday experiences of the world (Elzinga, 2016). This is expressed through representations we continually encounter: visually, conceptually, and geopolitically. Mythologised pasts, visions of a 'pure' present, and techno-utopian futures all work, however, to limit our conception of the Southern Ocean.

Landed bias also renders oceanic volumes largely invisible: considered only as smooth shipping surface or opaque volume from which to extract resources. Oceanic space is, however, a clear manifestation of what Brenner & Schmid (2015) describe as 'extended urbanisation': vast landscapes co-opted by expansive and exploitative urban processes.

An urbanising Southern Ocean is thus a significant arena of critical disregard. The world's 'newest' and most vulnerable ocean hosts unusual entanglements of water, ice, weather, atmosphere, land and life, and is of great import to disruptions popularly framed via the Anthropocene. When we reduce the ocean to a mere backdrop for human action, our capacity to respond to planetary-scale transformations enacted by everyday urban practices is fundamentally diminished.

To further problematise this frontier of urbanisation, I will address the masking of an urban Southern Ocean, drawing on my ongoing doctoral research. I ask: How do urban processes manifest in remote environments such as the Southern Ocean? And in what ways do imaginaries represent this volume as un-urbanised, when evidence exists to the clear contrary?

Cities and the eel: Urban political ecology, metabolic flows, and the European Eel across the longue durée

Dr Seth Gustafson, Lecturer in Human Geography, UCL

For centuries one of Europe's most widely consumed fish, stocks of the European eel since the 1970s have declined upwards of 95%. Ecologists account for this via a range of anthropogenic factors: habitat loss, overfishing and contamination among others. While still regionally popular in Europe, high demand from municipal east Asian markets for young eels has made the European eel both the world's most trafficked species and its illicit trade immensely financially lucrative. While the eel is only one of many decimated species in our contemporary age of extinction, scholars are only beginning to articulate the position of cities in extinction crises. Furthermore, while urban political ecology and other similarly positioned subfields with a focus on urban-hinterland environmental connections have accounted for non-human flows of water, food, pollution, fertiliser and other commodities, human-animal relations understood through the lens of metabolism are still under-developed and under-conceptualised. Focusing on a range of urban-hinterland metabolic flows of the eel trade from early modernity to the present, this paper brings together theory from urban political ecology, extinction studies, environmental history and metabolic theory to understand the role of the eel in binding together cities, hinterlands, infrastructures and municipal institutions. It draws on moments of the eel trade's long historical geography to frame eels as lively capital, metabolised to feed growing urban and industrial populations – translated into various value forms across different urban, rural, and political contexts – and balanced on the precipice of extinction.

Urbanization without an Inside: sand, scale, and territory in Southeast Asia

William Jamieson, PhD candidate, Royal Holloway, University of London

This paper wishes to argue that granular materials are the perpetual outside of contemporary urbanisation, a necessary but occluded material scale upon which planetary urbanisation hinges by erasing its strategic importance.

The world is running out of sand, as numerous alarming news articles, journalistic exposés (cf. Beiser, 2018) and environmental science attest to (Torres et al. 2017). In terms of quantity, aggregates are only exceeded in consumption by air and water (Peduzzi 2014). Sand accounts for the majority of aggregates, as it is a key ingredient for construction, constituting around 60% of cement. Yet in spite of its quantitatively overwhelming presence in urbanisation, and the immense scale of its extraction, scant attention has been paid to this category of material. This paper intends to connect recent developments in materialist sub-disciplines of human geography to address the simultaneous ubiquity of sand in contemporary urbanisation, through concrete, and its almost complete absence thus far in these theories of urbanisation. Unlike other extracted resources, its use in construction derives not from a unique chemical composition or latent reactive properties, but from its size: it is smaller than gravel, and larger than silt. Sand is not a material, but a material scale determined by granular dynamics. This paper will tease out these granular dynamics through a brief characterisation of the Southeast Asian sand market: in the midst of ever-intensifying urbanisation, Singapore, the number-one importer of sand, has put additional

pressure on the sand market through its land reclamation project, financed by imported sand.

From an urban to a planetary metabolism: developing a theoretical framework

Arnout Sabbe, Program Developer Circularity in Urban Regions, Research & Valorization, AMS Institute, Netherlands

In a world characterized by proliferating population growth and its implications on natural resources and ever-expanding and densifying urban areas, the need to question and rethink the impact of human interventions on planet earth is undeniable. The concept of urban metabolism – based on Marx and Engels' description of an occurring 'metabolic rift' between man and nature (1867) – has been a successful metaphor to grasp the interactions between cities and the natural resources that sustain them.

Over the past decades, several methods and tools have been developed to describe and assess the urban metabolism of cities, but too often remained mere techno-scientific accounting exercises. Moreover, most urban metabolism research views the city as a black or grey box, neglecting that almost every metabolic process transcends 'the urban' to reach even the most remote territories of the earth (Ibanez & Katsikis, 2014).

Theories on planetary urbanisation – inspired by Henri Lefebvre's proposition of a "complete urbanisation of society" (1970) – provide a strong conceptual and ontological framework to overcome the criticisms of binarism (urban vs. rural, man vs. nature) and "methodological cityism" (Angelo & Wachsmuth, 2014) of urban metabolism studies.

Based on a systematic literature review of both the field of 'urban metabolism' and 'planetary urbanisation', this paper aims to upscale metabolic thinking through the conceptualisation of a 'planetary metabolism'. By linking urban metabolic processes with larger territorial and global systems at play, this paper will develop an expanded and reformatted conceptual and cartographic framework to explain the exchange of materials and energy between society and the environment in the 21st century.