Opening the Bin – Helsingborg, Sweden, April 27 – 29, 2017

Keynote speakers

Thursday, 9.10 – 10.00, on Skype

Professor Gay Hawkins (Western Sydney University)
Accounting for the Social in Sociotechnical Accounts of Waste?

Much of the recent literature on waste begins from the assumption that technocratic approaches focussed on managing it deny its complex social and political life. Analysing this life is at the heart of the burgeoning literature on waste across numerous social sciences and humanities disciplines. But is this replacing technical determinism with social determinism? Are contemporary waste studies – as theoretically sophisticated as they often are - in danger of what Woolgar and Neyland (2013) call 'closet constructivism'? This paper wrestles with the idea of waste as provoked, as an emergent effect or event in which difficult or new realities surface and pose challenges to us. The issue is how are these realities realized and accounted for and how does the contingency of waste become implicated in governing? Is it possible to claim that far from governing waste in the interests of efficiency or the environment we are actually governed by it?

Gay Hawkins is a Research Professor in Social and Cultural Theory at the Institute for Culture and Society at Western Sydney University, Australia. She works on theories of materiality, ethics and practices of everyday life, and the place of waste and water in contemporary political processes. In 2006 she published The Ethics of Waste (Rowman and Littlefield). Her most recent book, co-authored with Kane Race and Emily Potter, is Plastic Water: the social and material life of bottled water (MIT Press, 2015).

Friday, 9.00 – 10.00, on site

Professor Myra J. Hird (Queen's University)
Looking for Redemption in all the Wrong Places: Environmental Citizenship and the Long Duré of Waste Contamination

Canadian municipalities, like those in other countries, all emphasize the 3R's of waste: reduce, reuse, and recycle. Of these, recycling is the least environmentally friendly but encourages circuits of capitalist production and consumption. Using primary and secondary empirical data, this presentation will argue that governments in cooperation with the corporate waste industry successfully foster an 'environmental citizenship' identity based on individual and household waste diversion even though this accounts for a tiny fraction of waste's global production. As such, waste is a prescient example of neo-liberal governmentality that successfully manages populations, and diverts attention away from far more salient upstream waste issues that require democratic dialogue and collective action. I argue for the urgency of bearing witness to our global waste footprint based on our vulnerability to unpredictable and unknowable bio-geologic forces and the long durée of waste contamination.

Myra J. Hird is Professor, Queen's National Scholar, and Fellow of the Royal Society of Canada (www.myrahird.com). Professor Hird is Director of Canada's Waste Flow, an interdisciplinary research program focused on waste as a global scientific-technical and socio-ethical issue (www.wasteflow.ca), and Director of the genera Research Group (gRG), an interdisciplinary research network of collaborating natural, social, and humanities scholars focused on the topic of waste. Hird has published nine books and over seventy articles and book chapters on a diversity of topics relating to science studies.

Performance and Presentation

Friday, evening

Franziska Lauber, Artist (Switzerland)
Why we cannot show you the Wasteland performance, but why it is none the less with us.

The term „Wasteland" designates any unused urban or industrial area of land that has become barren and abandoned. In our western culture it defines characterizes any area which is lying unproductive or which is not being utilized up to its potential. It therefore frequently has a negative connotation. „Wasteland" also refers to a place, a time or a situation which generates not a positive feeling.
"Wasteland" is the title of my latest art project I would to present in the context/frame of „Open the Bin" workshop in Helsingborg. I've chosen this title for this work, because it deals with gelatin - a side product/waste of industrial livestock production.
This project aims to question our ways to designate, "produce" and revalue waste, and this especially in the context of intensive animal farming.
Starting point of this piece was the work I did in the Musée Jurassien des Arts in Moutier/Switzerland in 2015/16 entitled ‚On the Back of the Pig'. The artwork contained about 200 kilos of colorful jelly gums in form of different animal species, arranged carefully on the floor in the shape of an 8 x 5 meters long sitting pig. Gelatin - jelly gums main ingredient - is extracted from pig's fat. In this process jelly gums reshaped the pig it originated from.
"Gelatin is obtained from partial hydrolysis of collagen derived from natural sources such as skin, connective tissue, and bones of animals. The raw materials used in the production of Gelatin include cattle bone, cattle hides and fresh, frozen pigskins." (www.gelatin-gmia.com). Industries therefore handle cattle bones and -skins literally as waste-product.
After the exhibition, while uninstalling the art work, the team and I used bin bags to store all the 200 kilos of jelly gums. It was the cheapest and easiest way to store and transport them. Most of the artworks turn into waste after an exhibition. But as I saw the bin bags dissaminated in the exhibition space, I started to reflect about artworks and waste, and about how and why these bin bags filled with jelly gums could or even should become another artwork. I hereby was transforming my own „production waste" into new „material" for art production and waste meaning.
I started to think how I could exhibit these filled bin bags in a same sort of setting and add a bench to it. Why a bench ? Because I would like the visitors to be able to „contemplate" the bin bags and reflect upon animals and industrial farming, upon eating meat its ecological consequences, upon animal ethics and waste. The project could have a double layer: reflect upon animals in the intensive farming industry - where they are not considered as living beings with feelings, but simply as material, as raw resources from which one could make a profit. Reflect upon that industries side product - the spectator looks literally at a gelatin wasteland in an art space. Mass production is often connected with unused material. In this case, as already mentioned, bones and skins. Why should this industry not reuse this „waste" for producing other product? Is it a good thing to re-use this material for creating other products ? Is this even sustainable? Or should we rethink the entire, and often hidden, food chain production with its massif ethical and ecological issues?

Paper Abstracts

Thursday, 10.15 – 11.15

Finding and filling the forgotten food bin. Action research in an actor-network at KTH campus. *Greger Henriksson (KTH Royal Institute of Technology), Jan Rapp (Biogasakademin)*

In this paper we peek through doors, lids and fermenting gases of garbage rooms, bins and sour dough in the bureaucracy of waste sorting at a major university campus. The paper reports on ongoing efforts to introduce the collection of all factions in KTH, especially food waste from the staff canteen. The KTH administration is working on this, but progress seems quite slow, when considering that the collection system (run by Stockholm Vatten) and the use of biogas (e g for public transport buses in Stockholm) has already been running for several years. Other companies at the KTH Valhallavägen campus, e g restaurants, have implemented collection of organic waste around year 2014. The specific focus is therefore on Greger Henriksson's (KTH) and Jan Rapp's (non-profit lobbyist at the Biogas Academy) efforts to 'support and catch up with' the introduction of collecting organic waste. We account for, and reflect on, the actions and measures that we have taken ourselves, as well as on measures that the administration of KTH respectively property managers (Akademiska Hus) have taken. We preliminary call our approach action-research, and in our reflections we rely on theoretical perspectives such as ANT (actor network theory) and SPT (social practice theory).

Norm-critical Waste Service Development. *Marcus Jahnke (RISE)*

This paper will describe the application of norm-critical analysis in an on-going waste service design project. Norm-critical innovation is a recent concept in the realm of Swedish innovation policy. The concept is promoted by Vinnova (The Governmental Swedish Innovation Authority), but is based on both activist practice and research from disciplines such as feminist theory, consumer theory and design theory. With support from Vinnova's funding programme Norm-Critical Innovation, the city of Borås is currently conducting a service development project based on a norm-critical analysis of the waste situation in the million homes programme housing area Norrby. The analysis showed how an unequal waste situation between Norrby and other parts of Borås results in increased segregation. It also showed that tenants without easy access to a car are discriminated against in the current waste system, based on a logistics and economics of scale logic as it is. In the currently on-going service design project, which is based on a co-design process with tenants from Norrby, a number of service concepts for transporting bulky and hazardous waste to the waste station, and to different re-use facilities, have been developed. These concepts include a lending-concept that utilizes electric cargo bicycles, and is based on a social business model. All concepts include social, organizational, technical (for example apps), business model, logistics and other dimensions that will be analyzed through a combined social and norm-critical methodology in the winter of 2017. The paper will describe the concept of norm-critical innovation and will illustrate its application in the projects' first stage, and in the on-going concept development stage.

Valuating Waste: Containers, Bags, Bins and other Technologies of Dumpster Diving.
Turo-Kimmo Lehtonen, Olli Pyyhtinen (University of Tampere)

At the margins of the consumer society, voluntary dumpster diving fundamentally questions received ways of valuating the quality of food. In this paper we study this practice from the point of view of different technologies involved in it. The study is based on an on-going fieldwork conducted in Finland. Our claim is that the ways dumpster divers and freegans valuate the food stuffs in supermarkets' waste containers are dependent on the particular technologies required. First, dumpster diving is about becoming a specialist on the management of storage and preservation. Not only does this imply that one is able to decipher the information provided by the texts on packages or the material conditions of objects, but dumpster divers also create new ways for managing the routes of commodities from shop shelves via waste containers, bags and kitchen tables to their own freezers and, finally, to plates. Second, other tools are used for the concrete work of valuating and

sorting out what in the waste containers is potentially edible and what is not. These include not only things such as suitable clothing but also flashlights, cotton or plastic bags and, for some, rubber gloves. Without these, the valuation practice that literally needs to be 'hands-on' would be an impossibility. Finally, voluntary dumpster diving involves technologies of the self. It is inherently characterized by the ideas of politics, of good and beautiful life, and the means with which one makes oneself into a moral subject in the Foucaultian sense of the term.

Community Responsibility and Labourer Livelihoods in South African Waste Management.
Kathleen Stokes (University of Manchester)

Waste management is considered an underfunded and uneven infrastructure in South Africa, yet rapid urbanisation continues to increase demand for adequate service provision. While municipalities are responsible for service delivery, their obligations are influenced by a paradigm of 'cooperative governance' which seeks to distribute authority across various scales of government, business and society (Department of Environmental Affairs, 2011). In attempting to extend and improve waste management services and reduce overall costs, multiple urban municipalities have launched a variety of schemes encouraging community responsibility for local waste management. From public awareness campaigns to procurement schemes targeting community cooperatives and enterprises, these initiatives are often associated with discourses of job creation, active citizenship, and green economic development. While greater community responsibility may be seen to increase local economic opportunities and civic agency, it also risks devaluing and excluding a wider array of labour on the frontlines of waste management. Indeed, the emergence of community responsibility schemes has coincided with broader contestations among formal and informal waste labour groups and more general resistance to neoliberal reforms (Viljoen et al., 2015; Godfrey & Scott, 2011; Samson, 2010; Barchiesi, 2008; Miraftab, 2004).
Drawing upon in-progress research on community responsibility initiatives in Cape Town and Johannesburg, this paper will consider how the promotion of community responsibility in South African urban waste management affects frontline labourers' livelihoods. By comparing waste management discourses, plans, and expectations with labourers' working conditions and livelihood strategies, I hope to contribute to situated discussions surrounding waste practices, infrastructure, and politics. My research is part of the ESRC-DFID funded research project, "Turning Livelihoods to Rubbish?".

Thursday, 11.30 – 12.30

Why do Policies Fail to Reduce the Amounts of Waste? An Investigation of Swedish Planning for Waste Prevention. *Nils Johansson (Linköping University, KTH Royal Institute of Technology), Herve Corvellec (Lund University)*

At least since the early 2000s, reducing the amount of waste and its harmfulness has been a priority in the EU's Environment Action Program and on top of the waste hierarchy, which shall govern waste management. Consequently, each member state in the European Union should have a program for waste prevention as an integrated part of their national waste plan. However, although being a top political priority, the waste generation has hardly decreased. In Sweden, which is the focus of this study, the quantity of household waste increased by 2% between the years 2004 to 2014. During the same time period the total amount of waste including industrial waste increased by 45%. So why have policies failed to reduce the amounts of waste?
This study aims to understand why the Swedish authorities fails to prevent the increasing amounts of waste by interviewing officials at the concerned authorities as well as analyzing official documents such as directives, plans and programs at regional, national and local level. The documents were analyzed by identifying targets and especially the instruments suggested to reach the targets by coding according type of action, type of waste and life cycle phase in focus. The interviews aimed at assessing the implementation of the plans by asking about obstacles/opportunities, priorities, control and financing possibilities.
The document analysis demonstrates that the authorities set different forms of objectives, some authorities' sets generally formulated objectives that the amounts of waste shall be reduced, while others state specified targets with precentral decreases. When it comes to the municipalities, the once with an previously low amount

of waste per capita have often stricter targets than those municipalities that created more waste per capita. At the same time, there are commonly several parallel objectives for waste prevention in different official documents at the same authority level. There could thus be an uncertainty about which of the different objectives and associated measures that should be prioritized. The focus of almost all covered objectives is on waste from households or the municipal organizations, targeting textile and food waste. Since households and municipal organizations accounts for only a few percent of all waste generated in Sweden, the objectives contribute at best only to a small effect on the total amount of waste.
In the official documents a variety of instruments to reach the waste prevention objectives are proposed. Only in the Swedish waste prevention program there are over 100 proposals for action. However, since the objectives targets foremost household waste, the focus of the measures falls on individuals and the later phases of the material lifecycle; on consumption and end-of-life rather than on industrial actors and the design and production phase. The proposed measures for waste prevention are almost exclusively of informative character, rather than economic instruments. This means that incentives for households to reduce waste are lacking, while industry, producing most of the waste, almost entirely fall under the radar.
The authority with greatest responsibility to implement waste policies, the municipalities, are according law responsible for handling household waste, rather than industrial waste. At the same time, waste prevention means that measures needs to be focused on the phases before the material become waste, phases that the municipalities in general have no control over, expect from their internal organization. The way the current business model for waste management is constructed, which is based on waste tariffs, opens only up opportunities for municipalities to include waste prevention in their ongoing information campaign, since waste prevention is not included in the tariff. This means that there is capacity is lacking to work innovatively with testing and developing new methods for waste prevention.
To reduce the amounts of waste, the concerned authorities must be given authority to steer actors upstream and influence activities before the product has reached the market and eventually become waste. For this to happened, waste prevention needs to be removed from the waste hierarchy and the management of waste towards becoming a question about reducing consumption rather than only smart consumption.

Bringing Environment Back to Waste Management: a Case Study of Waste Policy in Finnish Lapland. *JarnoValkonen, Heikki Huilaja, Johanna Saariniemi, Veera Kinnunen (University of Lapland)*

In this paper we ask, what happens to environmental concern as waste closure travels from national policy to mundane waste management practices?
During the last 20 years Finnish waste legislation has been constantly modified in order to meet European Union's agenda to become a waste-free recycle society. The completely renewed waste legislation came into operation at the beginning of 2016. The new waste policy is based on the idea of "circular economy" in which waste is understood as by-products waiting to be economically utilized. As a result, waste has rapidly turned from something that there is too much into something that there is not enough. In short, waste has turned into a resource.
In this paper we trace recent changes in waste policy and waste-related practices in Finland. We have adopted the concept of "closure" developed by Maarten Haajer (1995) to illustrate how nationally defined understanding of waste within legislation and waste politics is translated into action at the operative, municipal level and how it, in turn, affects people's mundane waste practices. Our interest lies especially in what happens to the original environmental concern which has been wrapped inside the economical problem closure of waste.
In this paper we take waste practices in Finnish Lapland under closer scrutiny. Lapland covers more than a third of the geographical area of the country but has less than five per cent of the population. As the number of landfills in Lapland has been reduced from 15 to 3 since 2007, the waste transportation routes have become hundreds of kilometres long. Lengthy transportation routes together with tightened regulations as well as intense cooperation between officials, private sector companies and household actors related to transfer, relocating and reuse of municipal waste, makes Lapland an excellent case county to study how the national waste policy is enacted at the municipal level and in people's everyday practices.
Our ongoing *Society of Waste* -project seeks to understand waste in all its complexity from a social scientific viewpoint. The project seeks to understand, how does society shape waste and how does waste, in turn, shape society?

Reflections on Organic Waste Processing: Scale, Distancing, and Equity.
Sally Geislar (Yonsei University, Underwood International College)

Research on closed-loop systems (Wachsmuth, 2012) or circular economies (Gregson, et al., 2015) attempts to reduce urban ecological footprints, in part by redirecting food waste from landfills to be transformed into new inputs. However, the emergent systems of provision (Bulkeley & Askins, 2009) reflect broader trends of corporate consolidation of waste management (Strasser, 1999; Rogers, 2005) through state-subsidized, large-scale facilities (Platt & Goldstein, 2014), often leading to infrastructure lock-in (Corvellec et al. 2013). In this paper, I argue that these arrangements (re)produce both the power relations between communities, food, and waste management, and the distancing of consumers from their waste (Princen, 2002; Clapp, 2002; Geislar, 2016).
As new narratives redefine organic waste as a resource rather than a risk, (Corvellec & Hultman, 2012), its extraction to remote facilities under exclusive contracts increasingly becomes a question of equity. These materials must be re-conceptualized as a source of power; power to nourish soil to grow food, or to gain energy independence. Yet the lock-in of large-scale incinerators, composters, or anaerobic digesters (re)concentrates power among the vertically-integrated waste management industry. Instead, food waste material flows should be integrated into urban agriculture efforts via community-scale compost systems, or into new technologies making small-scale anaerobic digestion economically viable (Case, 2014).
The current assemblages also (re)produce the effects of distancing, severing important feedback loops between waste generators, their sorting practices, and externalities of processing. I outline an interdisciplinary research agenda for scholars and practitioners to understand whether and how localized control of excess food materials improves equitable outcomes for communities, reduces the effects of distancing, and reduces negative externalities of the food system by transforming the socio-ecological relationship between communities, their food, and organic waste processing.
This theoretical piece is informed both by my interdisciplinary research on urban food waste in the Netherlands, the U.S., and South Korea, as well as by my role implementing large community-based field experiments to inform a partnering municipality on their curbside organics recycling program in California.

Sustainability in Istanbul and Waste Culture Practices. *Hürriyet Konyar (Akdeniz University)*

We see waste culture as related with changing consumption relations. The new dimension of consumption culture in ethical form. Ethical consumption is preferred more especially in food consumption, the main object being the human health and protection of nature. A new environmentalist ethical understanding arises by the help of consciousness developed by environmentalist non-governmental organizations. We can say that the foundations of the emergence of the waste culture focusing environment and human health is in this new consumption understanding.
It is especially important for middle class individual to adopt this new environmentalist ethics and consumption understanding. New life style experiences are acquired by the desire of being healthy and living in a clean environment. But these individuals differentiate themselves by separating themselves from other classes by the help of this experience. This social segment who acquired ethical consumption understanding as cultural capital in accordance with Bourdieu's explanation, has an interest in natural food and their interest goes beyond acquiring organic food further to such activities like producing healthy food at home (e. g. yogurt, bread, etc.) or growing tomatoes at her on balcony. All these new practices open the way for realization of new practices about arrangement wastes. As practices like arrangement of wastes for protection of environment and not leaving food wastes were emerging as a result of a new consumption understanding, it is observed that waste culture is becoming rational by the help of smart technologies brought by urban life. Women are the most important implementing individuals in Istanbul. For this reason it is observed that these practices have gendered aspect. In the study which we made in Istanbul (between 2014 and 2016, TUBİTAK PROJECT NO:114K079) in this perspective, we collected data by having deep interview with 92 educated and professional middle class individuals who developed waste culture in compliance with a new food ethics. In this study; 1-food purchasing and 2-waste practices in consumption practices during cooking process.
Obtained findings belong to two different life styles in Istanbul one of them being conservative and the other as modern. It is observed that individuals living in conservative life style had developed practices protecting human health and environment in perspective of interpretation of Islamic sources. On the other hand, it is

observed that individuals living in modern life style had implemented waste practices considering environment and human health in perspective of urban living consciousness by participating to non-governmental organizations.

Thursday, 13.30 – 15.00

Constructing a Chaîne Opératoire: a Way to Understand how Urban Societies Relates to Waste. *Elisabeth Lebec (Université Paris 1)*

Recent researches in the field of urban metabolism and urbanism allow to consider waste management in cities as a both technological and social issue (Barles, 2015). If territorial ecology views waste as a material flow that crosses through cities (Fisher-Kowalsky, 1998), it does not deny the fact that this flow is socially produced and passes through a technical infrastructure - urban material network (Dupuy, 1984), or decentralized system (Coutard, Rutherford, 2009) set up by stakeholders and citizens. From this point of view, studying the way urban society sets up and uses technical systems is a way to explore the social and cultural relation that links urban this society and to her its waste.
The paper firstly expose outlines the theoretical contribution of technological anthropology (Leroi-Gourhan, 1943 ; Mauss, 1934) to urban studies for the comprehension of waste management in the cities, considering the technical systems, the matter, stakeholders and service users altogether: one way of studying theose three inseparable components of waste management is indeed through the chaîne opératoire approach (Lemonnier, 2010), that which allows to re-construct the order arrangement of the different steps used to produce an artefact - in that this case, waste technical waste systems in the city, as it allows to understand social and cultural matters underpinning a technical process. The second part of the paper illustrates the theoretical and methodological assessment of technological anthropology by relating a field survey that took place in Paris, around service users setting up a decentralized and technical system - collective compost bins – to spontaneously locally manage et re-use their own organic waste, with the financial help of public institutions. The construction of a chaîne opératoire of local composting allows to observe the material process involved in reducing and recycling waste and to seize the invisible and contradictory motivations of city---dwellers and public institutions in setting up this technical device. While the former seem to have invented a new waste management technology, - without willing it, as they rather consider their organic waste as a raw material-, the latter painfully integrate that new way of relating to rubbish in the networked city institutions.

Dirt and Freedom. *Udo Pesch (Delft University of Technology)*

In a number of respects, modern cities have bestowed us with models of human behaviour. Two of these models will be featured in this paper. First, there is the model of political liberalism, which has emerged from the need of urban dwellers to deal with people that have different political and moral orientations. Second, there is the pollution management model, which, in contrast with the urban political disposition, can be basically seen as intolerant: the aggregation of people implied an accumulation of waste streams, which have come to be managed by seeing waste as something that should be removed, as matter that should be made invisible. Both city-based models have their rural counterparts. In general, small communities appear to be much less tolerant to deviant ways of conduct and thought, while waste is seen as factual part of life, or even as a valuable resource.
Faced with the unprecedented urban challenges in terms of globalization, migration and pollution, we have to rethink the efficacy of these models. We cannot maintain the pollution management model, we have to become tolerant to waste, accepting it is a resource. At the same time, we have to withstand the threat of intolerance regarding diversity of people and their moral convictions. This paper will trace the political, economic and technological developments that either help or jeopardize the effectuation of these demands.

Trashures – Next Generation Waste Management.
Elin Önnevall , Annelise De Jong, Lizette Reitsma (The Interactive Institute Swedish ICT)

There is a growing attention for circular economy approaches in sustainable consumption. This is due to increasing awareness of the fact that materials are scarce and there is potential for retrieving materials into the cycle other than recycling such as direct reuse. This has been applied for several materials, such as textiles, but not so much with other types of household waste, such as plastics. This is a relative new field and connects various disciplines such as behavioural economics, social psychology and design. This paper presents a case study into turning household waste into treasures.
During 2014 half of the household waste (47%) consisted of combustible waste (sopor.nu). In this pilot 11 tenants in Uppsala has been given a box with the instruction of collecting plastics (not packaging) and textiles (non usable) for three weeks. On November 22nd 2016 we held a workshop together with a recycling design teacher in which the tenants were given the opportunity to learn how to create something out of their waste. After the workshop seven boxes were sent to three design companies. This material will be offered back as new products. Through interviews we will explore how the tenants look upon these new objects. Equally important for the project is to explore new ways of consuming and discuss the relationship with waste, consumption and wellbeing in everyday life.
Central to this project is also the idea of a more sustainable business model around the usable material that currently goes to combustible. Our focus is in line with a new trend in which materials previously seen as waste are now included in the circle again and returned to a market (http://www.oogstkaart.nl, http://www.reverseresources.net/). Our project also connects to research initiatives in the area of waste (RE:Source, Agenda Waste Free City) and the European initiatives including The 7th Environment Action Programme (EAP) as well as design research (Šimbelis et al 2016 and Loschiavo Dos Santos 2011)

Exploring the Landfill Commons. *Patrick O'Hare (University of Cambridge)*

This paper critically explores the conception of Montevideo's landfill (cantera) as an "urban commons" and extends this to waste repositories in developing countries more generally. Drawing on a year's ethnographic fieldwork conducted with waste-pickers (known as clasificadores) in and around Uruguay's largest landfill of Felipe Cardozo, it argues that as well as a technocratic space of risk management, the landfill serves the city's poor as a source of value, and a refuge from low-paid wage labour.
Oral histories collected from waste-pickers provide testimony of ways in which the Montevidean landfill has acted as a resource for vulnerable populations such as single mothers, Afro-Uruguayans, rural immigrants and the urban poor more generally. The attempt to restrict access to the landfill and its (waste) materials is conceptualized in the paper as a process of "hygienic enclosure", one which has been stubbornly resisted by waste-pickers. The paper then goes on to explore what arrangements govern current access to the landfill, what materials can be extracted and what forms of life are sustained.
The arrangements implicating access, extraction, enclosure and resistance bear a striking resemblance to the historical case of the English commons. A comparison of both cases challenges romanticized and idealized accounts of the commons in certain strands of contemporary theory. The reconceptualization of waste streams and repositories as "commons" also provides as new standpoint from which to understand current trends in the formalization, appropriation and technocratic management of discards.

Rethinking Rubbish: Unwrapping the Transformative Potential of Rubbish in Lagos, Nigeria. *Precious O. Akponah (University of Leicester)*

Drawing on the literature surrounding materiality (Dant 2005, Miller, 2005), the biographical movement of things (Appadurai, 1988) and specifically Michael Thompson's (1979) "rubbish theory", this paper aims to trace the 'social life' of rubbish in Lagos, Nigeria, to understand how 'rubbish' shape individuals' livelihood within a network constituting an economic, social, cultural and political nexus. In particular, this research explores how meanings of objects (rubbish) are negotiated and transformed from one context to another through processes of exchange, display and re-use. Such an approach questions and rejects the orthodox view

of rubbish disposal as limited to environmentalism and sustainability. Instead, the research pushes these boundaries, investigating how rubbish sustains livelihoods and relationships in cities like Lagos.
After spending 6 months participating, observing, and interviewing the key stakeholders involved in the organization of rubbish in Lagos (i.e. artists, householders, scavengers, scrap dealers), an understanding emerged of how the disposal and potential re-use of 'rubbish' serves as the life blood which fuels social and economic relationships between the various stakeholders. In particular, findings illuminate how meanings emerge following an interaction between the social and material properties – that is the co-creation and co-production of meanings taking place between subjects [people] and objects [things]. Not only that, the research shed light on how the marginal position of certain stakeholders (i.e. scavengers) overshadow the role they occupy in the waste management circle as well as their significant contribution to the informal economy.
Such findings highlight practical and policy implications for recycling and waste management. The conclusions are equally relevant to local Nigerian communities and stakeholders within waste management circles in terms of alerting them to the possibilities for creating value through rethinking our perception of 'rubbish'. Consequently, this could lead to an upturn that will serve as a bedrock for future economic growth and development for not just Lagos, but other similar cities in developing countries around the world.

Repair Movements' Commoning Practices. The Case of the Bike-Kitchen in Sweden.
Patrik Zapata, María José Zapata Campos (University of Gothenburg), Isabel Ordoñez (Chamers University of Technology)

In response to the current consume-and-discard society, the last years have seen a rapid proliferation of collective mobilizations around repair and maintenance, aimed at challenging the patterns of production and consumption within neoliberal capitalism. This paper contributes to current efforts to expand environmental movement and organization studies theories with the urban commons literature to explore the role of maintenance, repair and care in 'commoning'- or in other words creating urban commons. The paper is informed by the case of the Bike-Kitchen in Gothenburg, a bicycle repair workshop where abandoned bikes are recovered and given to members who are taught to repair them. In-depth interviews, ethnographical and visual observations support the analysis. In the paper we show how through their repairing practices, these movements develop the ability to reinvent, appropriate, and provide urban commons by transforming private assets –the bikes- and space, on their own terms, as an alternative to market and State. As it has also been observed in life-style movements, our analysis also notes how the openness of the commons movement, fuels a broad recruitment of participants driven by diverse rationales and motivations. The paper shows the ability of commoners to imagine and create the value-to-be and the affordances in these assets; as well as to develop the knowledge, competences and practices needed to recover and repair the bikes and create new urban commons. It also shows how these movements, without overtly expressing a conscious political action, challenge dominant institutions such as private ownership and recall alternative imaginaries through ideas of environmental stewardship, and duties of care.

Towards a Circular Economy…. of Proximity? Different Interpretations of Proximity's Typology. *Jean-Baptiste Bahers (Ecole des Métiers de l'Environnement), Mathieu Durand (Université du Maine)*

The circular economy is a new consensual concept, which is supported by all type of stakeholders in waste management (private companies, enterprises of social economy, NGO, Regional and local governments). However, circular economy isn't' well defined (Buclet, 2014; Gregson et al., 2015). What does it mean and at which scale is it implemented? The proximity principle advocates in the European and French regulations that wastes should be managed close to the point at which it is generated, but there is no definition on which geographical scale it is supposed to be respected (Cirelli, Maccaglia, 2015). How could we think on a local and circular economy including the social, economic and environmental issues of the industrial society? On the basis of a quantitative and qualitative methodology, these situations are analyzed and regrouped in a typology of six proximities.
The first objective of this text is to understand the implementation of the proximity principle according to the waste recycling chains. The methodology is based on analyzing the urban metabolism for few cities (Barles, 2014) and identifying the spatialization of waste flows. The geography of waste is dependent on the spatial distance, the interpersonal networks, the organization of waste chains and the professional partnerships. The

implementation of proximity is quite complex and affected by the "geometry variable" according to the types of waste. Some of them are managed at local scale such as the putrescible and fermentable waste, the bulky refuse, and final waste. Others are easy to transport (e.g. waste with high value added or hazardous waste). We aim at interrogating the criteria which determine these geographical issues (Bulkeley, Gregson, 2009). The complexity of Extended Producer Responsibility implementation is one of the key to study the spatial analysis of circular economy.
The second objective of this communication is to analyze the interpretation by all type of stakeholders in waste management. For this purpose, 57 semi-structured interviews were carried out between 2013 and 2015. The stakeholders, who were interviewed, were waste companies directors, social enterprises managers, producer responsibility organization (PRO) managers, state government engineers, regional government engineers, local government engineers, professional federation representatives, NGO representatives, and experts. We want to compare the discourse of the local governments with their political programs and the actions of waste companies. The insights of this research are to build different typology of proximity in the emerging circular economy. Therefore, there are lots of contradictions between stakeholders regarding the role of waste management plans, industrial strategies and stakeholders' practices.

Repoliticizing Waste: A Discursive-materialist Critique of the Circular Economy.
Francisco Valenzuela (Nottingham Trent University), Steffen Böhm (University of Exeter Business School)

The discourse of zero-waste and the circular economy has been championed by key players, such as the European Commission, management consultancies, NGOs, academics and multinational companies, in recent years. Given the all too obvious social and environmental crises associated with out-of-bounds growth capitalism, the circular economy has been one of the main references for rebuilding and reforming a political economy of sustainable growth. In this interdisciplinary paper, taking cues from philosophy, cultural studies, political economy and management studies, we detect a de-politicizing strategy in this attempt of reform, and, consequently, aim at re-locating a position for the politicization of the circular economy. We do this by offering a unique discursive-material theoretical framework, bringing together Marxist and Lacanian psychoanalytic readings of contemporary political economy. This will allow understanding both the subjective relation with the meaning of waste and the material exchanges that place the subject in the position to produce and consume waste as a valuable commodity. In our quest to (re-)politicize waste, we offer three practical steps that aim at interrupting the endless repetition of waste, which include attempts to eradicate it. We will illustrate this argument by making reference to the circular strategies of a range of multinational companies, including Ikea, H&M, Renault and Coca Cola.

Enhancing the Critical Perspective of Zero Waste through Post-normal Technologies.
Lucy J. Wishart (University of St Andrews)

Zero waste is a globally recognised term for waste reduction, and yet it remains an equivocal concept. Initially signifying a radical reorganisation of resource use within modern society, as the term has been more widely adopted, zero waste has become associated with technical and bureaucratic policy goals. This shift raises the question of whether zero waste has become an easily adopted signifier for sustainable resource use in what is otherwise a business as usual system. In this paper I assert the potential for post-normal technologies to promote a vision of zero waste which would encourage a more critical perspective on the organisation of modern resource use. My argument emerges from my realist governmentality analysis of the zero waste policy regime in Scotland in which I draw upon conceptualisations of zero waste from interviews with policy-makers and policy documents. I suggest that although elements of a governmentality for sustainable development are present within the Scottish regime, participants lack the knowledge, space and capacity to adopt the more radical elements of their zero waste ideas. I find that in the Scottish context, zero waste manifests as both a complementary and contradictory technical and philosophical goal. Using insights from this case study, I explore how the post-normal concepts of extended peer-communities; agonistic processes and ecological citizenship could enhance the potential of zero waste as a critical perspective on the organisation of resource use in modern society.

Thursday, 15.30 – 17.00

Plastic Roads to Zero Waste? On Paradoxes of Recycling.
Sven Bergmann (University of Bremen), Yusif Idies (Leipzig University)

According to the guardian, the city of Rotterdam considers to pave streets with recycled plastic bottles (Darroch 2015). By doing so, the roads should require less maintenance, perform better under extreme weather conditions, while the emission of carbon dioxide would be reduced, resources saved and plastic-waste problems could be revised. In brief: both company and city council are following the vision of a closed material cycle, in which plastic waste is expected to be contained or even eliminated.
From the point of view of Critical Discard Studies this raises different issues. As Gray-Cosgrove et al. have stated: long enduring wastes like plastics „may be spatially moved and „cleaned up"", but „continue to endure in time, which means remediation becomes an exercise in shifting materials in space rather than their elimination" (2015, 1). Hence, not the waste/resource itself is affected, but it's temporal and spatial mobility. This in turn may provoke drawbacks, unintended reactions, and at least questions: To which extent bottles can be recycled to roads? How much/many primary resource/s affords the "closed loop"? What is the conversion rate of the roads? How are they maintained? Are the plastics fixed in the streets or are they even more mobile (through effects of erosion)? So after all it has to be asked, whether the plastic road, intended as sink, may turn out to be a spill.
This collaborative paper is an approach of relating and intersecting our ongoing research on plastic pollution (Bergmann) and zero waste (Idies).

Municipal Waste Dump and Garbage Strike Politics in the Medium City of Sub-Saharan Africa: The Case of Bafoussam, Cameroon. *Rolande C. Makamte K. (University of Lausanne)*

Garbage strikes have taken place recently in cities of the global South revealing social movements against waste disposal politics and dumpsite. While the field of environmental justice has gained increased attention by researchers, so far, little is said about the forms of garbage strikes in sub Saharan Africa's medium-sized cities where the majority of Africa's urban population live. Furthermore, beyond a significant attention to poor waste management effects in the growing field of urban political ecology, not much evidence has been given to the connotations of municipal solid waste in these cities. This article contributes to fill these gaps through the case of Bafoussam in Cameroon, a rapidly growing medium-sized city with pluralistic socio-economic and urban characteristics. It analyses social movements around waste and therefore, the emergence of municipal waste's meanings developed in marginalised neighbourhoods and along municipal waste management chain. Rubbish is addressed as a resource disputed by some urban dwellers and rejected by others. Based on focus groups with urban minorities, semi-structured interviews with key stakeholders and household surveys, the paper identifies the forms of garbage strikes in Bafoussam and explores the vocabulary of rubbish over areas of the city. The article examines the expressions of socio-environmental inequalities related to waste disposal, and reveals that municipal dumpsite normally considered as an obvious improvement of urban cleanliness appears as an instrument for a minority to unveil development issues of their area through passive and political acts.

Studies in Eating, Walking and Wasting in the City.
Lynnette Widder (Columbia University), Jessie Braden (Pratt Institute), Joy Ko (RISD)

City life is characterized by peripatetic consumerism: paths through the city are lined with opportunities to purchase foodstuffs, either to satisfy our immediate hunger or to accommodate everything we might wish to cook at home. The routes we take say as much about us as consumers as do the purchases made: both qualitative and quantitative studies of city dwellers and of general consumer behaviors (Penn, 2005; Erincik et al, 2015; Berry, 1969) have ascertained that the synergy between space traversed and purchasing behavior is characteristic of both the city and the individual navigating it, with consumption occurring both opportunistically, along the route, and at a destination to which a route leads.

Using the powerful tools offered by GIS-based apps and GPS mapping, coupled with photo and text journaling integrated into the apps, to test urban movement/consumption link, we have completed a series of focused studies on the interfaces among eating, movement and waste production in upper Manhattan, New York City. The technology we deployed allows both quantitative and qualitative assessments. While "big data" methods usually aim to diagnose prototypical behaviors and motivations through the accrual of as many data points as possible, we have repurposed ubiquitous computing to offer a series of bespoke, highly individual case studies. Our five subjects each represent a unique variation on the interplay of movement, food consumption and waste – in particular, non-organic wastes, whose impact on New York's ecological footprint is most critical.
Our data analysis offers a broad spectrum of initial conclusions. These include insights into the comparative practices of on-line, dedicated and just-in-time grocery shopping. The analysis also addresses the outcomes in terms of non-organic waste of consumers' decisions to favor perceived efficiency by eating on the go and disposing of items in the public realm. Finally, the plotted tracking information, accompanied by real time photographs and journals, suggests how movement within the city is impacted by the quest for food; and, alternately, how the presence of highly varied food options is overlaid onto the typical spatial patterns pursued by the individuals studied.

An anthropologist and a toxicologist consider the potential 'hazardous' classification of polystyrene. *Trisia Farrelly (Massey University)*

Polystyrene (PS) is a petroleum-based plastic made from the styrene monomer, vinyl benzene. Since it was first commercially produced in 1930, it has been used for a wide range of commercial, packaging, and building purposes. In 2012, approximately 32.7 million tonnes of styrene were produced globally and polystyrene is now a ubiquitous household item worldwide. In 1986 the United States Environmental Protection Agency (EPA) announced that the polystyrene manufacturing process was the 5th largest source of hazardous waste. Styrene has been linked to adverse health effects in humans and in 2014 it was listed as a possible carcinogen. Yet, despite mounting evidence and public concern regarding the toxicity of styrene, the product of the polymerisation of styrene, PS, is not considered hazardous. This paper draws on the new materialisms to attend to the relational, unstable, and contingent nature of PS polymers, monomers, and other additives in diverse environments. We thus highlight the complexities involved in the political lives and afterlives of PS including its potential categorisation of PS as 'hazardous,' and the futility of demarcating PS as 'household waste.'

Values in a Bottle. *Dario Minervini (University of Naples "Federico II")*

Arguments about the relevance of urban waste sorted collection in minimizing environmental impacts are recurrent and well-known. One of these statements concerns the role of households in practicing a propter selection of materials. Citizens are continuously asked to directly support the qualitative and quantitative goals of the urban waste management also in economic terms. Indeed people participate in the co-construction of the "value" of waste that is performed in the recycling process, even if in a very specific stage. But the socio-material process of value construction extends from the production of the plastic packaging to material recovery and recycling, involving both private and public interests, in a multilevel governance scheme. So how the value of a plastic bottle is shaped "in practice" along the entire chain is not a mundane detail. How much is a plastic bottle worth? Who accounts for it? Who pays for it? Who benefits from it? In this paper there is an attempt to grab the complexity of these interrelated questions.
An ethnographic research strategy is adopted to investigate the case of the plastic packaging. In particular the shadowing of a plastic bottle is conducted and accounted. The pivotal idea is to follow the complete life cycle of a bottle focusing on what is generally considered a property of the bottle itself: its value. The empirical effort is characterized by a pragmatic perspective, looking to how value is performed in the chain more than why plastic worth more ore less. Values is considered a socio-material output of a heterogeneous and performative process in which socio-material devices, discourses, norms, actors, enact - and are enacted by – the plastic bottle. Actor-Network Theory (ANT) sensitivity leads the methodological and analytical strategy of research.

At the same time the research answers are inspired by a critical approach developed within the Foundational Economy (FE) programme. In short FE can be considered a field of research and a theoretical argument. The field fit with those sectors in which goods and services are taken for granted and provided as public utilities. The theoretical hypothesis is that a value extraction dynamic is enacted in this multi-sectorial field. In this case the point is "how" private actors extract value from the chain of plastic bottle production, use and recycling. In doing so we try to retrace the intertwinement between economic logics and the socio-environmental rhetoric about sorted collection of waste.
The specific focus of the research is due to the fact that in Italy plastic impacts the overall of packages (including paper, glass, wood, steel, aluminium) only by the 16,1% but represent the 74,4% of the total value of the so called CAC, an environmental contributions payed by the packaging producers (CONAI, 2014). Indeed the Italian packaging waste system is based on a compulsory National Packaging Consortium that manages the logistic and the economy of the different materials flows. In particular CONAI support municipalities in the sorted collection of urban waste, and is supported by the environmental contribution above mentioned. This consortium can considered a "black box" where is concentrated a relevant part of the valorisation process of plastic waste and the ethnographic shadowing of the bottle allow to retrace the agency of actors, devices, technologies involved.
The research is in progress and is being carried out in different organizations (a national packaging company, a multinational company of mineral water, a local supermarket, a municipal company of waste management, etc.), spread in different regions in Southern Italy. For each stage of the chain negotiations, meanings, judgment, discourses, procedures of creation and stabilization of the bottle value are observed and recorded.
Finally, in answering to the research questions, we will critically discuss the "active" role of the household in the process of value construction of plastic waste. The argument will be focused on the asymmetries affecting the relationship between agencies enacted within the socio-material network performing the chain of valorisation and the power of accountability and "visualisation" of waste value.

BIG Dreams Burnout. *Jens Peter Mortensen (Danmarks Naturfredningsforening)*

The political and economic scandalized waste incineration sector stands in front of big changes in the transition to circular economy. Incineration of waste is destruction of resources but the incineration also supplies the energy systems especially the district heating grids with the lowest price fuel. The incineration sector has started the transition based on the massive critique of the scandalized new waste incinerator in the center of Copenhagen.
Food waste contains 80 % of water and cannot burn. The two biggest retailers concerns in Denmark protested against the new incinerator by collecting all food waste from their supermarkets in Copenhagen and deliver it for anaerobe digestion. They started food waste reduction programs too. The retailers spread the praxis to supermarkets all over Denmark and will hopeful also do it for supermarkets in other countries, Sweden, Norway, Germany and Poland if they have not done it all ready. Taken food waste out of the incinerators makes the incinerators produce more energy. Burning food waste requires double of energy than the content of caloric value.
Circular economy cannot be developed without extended cooperation between industry and municipalities. This is complex because both parties have to think new thoughts, new solutions and new cooperation forms especially on household waste/resources. Food waste from households is best collected separately by municipalities but it is not given that the operators of anaerobe digesters should be municipal. The important matter for the anaerobe digesters is the location close to the waste incinerators so that they can burn the produced biogas substituting waste. The digistate has to go back to farm land.
When it comes to other waste fractions it becomes more complicated especially when it concerns plastic and other packaging materials. For the moment most plastic waste collected is burned. This needs to be changed.
Collection and reduction schemes have to be developed. From the many different collection schemes all over Europe it seems to be two directions for reduction, collection and recycling of plastic: One municipal collection of low grade plastic recycling and one collection between retailer and consumer for reduction and high grade plastic recycling.

Friday, 10.15 – 11.15

Envisage Waste: Design Engagements from within a Bureaucracy.
Caroline Ektander (Independent Researcher)

What we throw and where it goes is a public dilemma that has gradually and imperceptibly been removed from our contestation over time. Built on this analysis, I started to court the waste department in Stockholm and my entanglements have since then only deepened.
The waste department within the state-owned company Stockholm Vatten hold an operative role in shaping our urban landscape through the contracting of waste services. These services include the collection and processing of household and company waste, as well as the building of physical infrastructure. The waste department is also solely responsible for drafting and implementing policies that push the waste agenda into the cities planning documents. Despite this instrumental role in shaping our cities, the waste department sit on limited proficiency in the field of urban planning and design.
Reacting to the design opportunity, I embedded myself within the bureaucratic body between 2011-2015 with the core mission to influence and shape decisions regarding waste visibility. I set out to understand the complex waste flows and to circumscribe points in the system – it's bounded spaces - where the contact between waste and citizen could be renegotiated and reimagined through design. The outcome of my practice was a handful of built artefacts, a set of processes and relations knitted between the splintered departments of the bureaucratic landscape.
In this paper I will, in a practice-based spirit, retrace and reframe my entanglements with the bureaucratic body and systematically unpack my interventions. I will go on to propose new trajectories and territories of engagements with waste within the public body, while staying true to my conviction that waste needs to be repeatedly and relentlessly acknowledged and contested.

Attempts at "Climbing Up" the Waste Hierarchy: Participatory Design and Makers' Culture to Explore New Practices and Infrastructures for Waste Prevention. *Anna Seravalli (Malmö University)*

ReTuren, a neighborhood upcycling center has been a pilot for a new waste handling service, driven by VA SYD, Malmö municipal waste organization. By using participatory design approaches and makers' culture, ReTuren has been involving diverse actors in exploring new practices and a possible infrastructure for waste prevention. The paper draft presents and reflects upon such exploration, discussing its outcomes and the methods, which have been guiding it.
Waste prevention has been depicted as a major rupture for the waste branch, since "wasting less" challenges traditional reasoning about and existing orders within waste handling (Corvellec and Czarniawska 2014). Thus, the question of "climbing up" the waste hierarchy seems to require both new actions and practices for behavioral change, as well as new infrastructures to support and organize such actions and practices. To further articulate the notion of infrastructures, a possibility is to build on the work of Star and Ruhleder that define them as relational, practical and situated arrangements including not only technological artifacts but also knowledge, competences and people. Additionally, they underline how infrastructures and the practices they support are mutually interdependent and continuously influence and modify each other (1996).
ReTuren has been experimenting with improving the handling of household waste and with different activities to encourage waste prevention among citizens. Such experimentations relied on Participatory Design approaches and entailed the active engagement of different actors who collaborated in and for ReTuren. This constellation of different actors provided competences and knowledge for driving ReTuren. Moreover, it played a fundamental role in the continuation of ReTuren, when the decision of interrupting the pilot was taken. In such respect, ReTuren has been also a matter of exploring a possible infrastructure for waste prevention.
When it comes to the approaches, a central role has been played by infrastructuring and commoning. Infrastructuring (Hillgren et al. 2011) entailed to align different people, resources and knowledge and consider how, on the long-run, such a constellation could be maintained and support ReTuren functioning. To nurture the commitment of the different actors , the pilot relied on a commoning approach (Seravalli 2014), which actively fostered co-ownership over ReTuren among the different involved actors. In infrastructuring and commoning for ReTuren, a central role has been played by makers' culture. Makers' culture refers to a growing

number of initiatives in which non-professionals engage in repairing and making things by collaborating with each other and sharing knowledge. In ReTuren, makers' activities were organized to inspire citizens towards waste prevention and they provided also the opportunity to align different actors' concerns about ecological and social sustainability.
ReTuren has been exploring how alliances across sectors and with citizens can support waste prevention practices. In order for such emerging infrastructure to be sustained in time, it arose the importance of grounding co-ownership and collaborative processes on the ground but also among managers from the different organizations and decision makers.

Householding, Care, Recycling, Female. Keywords in the Social History of Textile Repair in the last 200 Years. *Heike Derwanz (Universität Oldenburg)*

At the precise historical moment when the quality of clothes gets poorer and poorer, the purchase of new clothing is cheap and easy and young people are said to be unable to do any textile repair, the art of visual mending appears. This practice exposes the broken parts as it highlights the repair work. As a countermovement to the practice of throwing away and part of the slow fashion practices, visual mending counts as upcycling because a changed product with other qualities has been created (Fletcher 2008:113ff). In the do-it-yourself scene, artists like Celia Pym, Beth Billups or Tom of Holland are well known for their works of visual mending. Through her aesthetic work the value of clothes and repair is re-enacted ut here with an eccentricity in opposition to the everyday appeal of unpaid female household practice that prevents waste.
The article employs data of an ethnographic fieldwork about mending firstly in households, secondly in a museum textile collection and thirdly via visual mending blogs. It then shows that repair practices are mostly forgotten in the cultural anthropology of textiles (Mentges 2005) with a last exhibition in Germany in 1983 (Flick-Werk). Not to mention that it did not find its niche in the prevailing fashion studies and is said to be invisible in science (Twigger Holroyd 2016:285; König 2013:571; Kaschuba 2003). Only some texts like Langreiter/Löffler (2013) in Germany or König (2013) and Smith (2014) actually focus on repair even though it should be a central topic in research about everyday practices in anthropology. From the perspective of sustainability research there is now an interest (see Mendrs Workshop at Plate 2015) that draws connections to moral motivations beyond scarcity or crises as its framed in older texts (Flick-Werk 1983).
Through my ethnographic data on textile repair in Hamburg/Germany and media analysis I will contextualize these practices between images of female care work, frugality and world saving through recycling. The question of the meanings of repair in changing historical contexts will lead through the text.

"Follow the Things" - Donated Clothing in a Reuse Mall Context.
Lars Hedegård, Eva Gustafsson (University of Borås)

This study is inspired by the "follow the things" movement that trace and document the history and travels of ordinary consumer goods such as jeans, shopping bags, food, blouses or hair extensions (see http://followthethings.com/ for a collection of travel reports). Narratives about products' origins and transformations have become part of the discourse on sustainable consumption, and it has been suggested that the post consumption phases of goods should be included in these narratives (Gregson et al (2010). This study can be seen as a response to their call, and we start our inquiry at the containers for textile recycling at the ReTuna mall - the world's first mall for reused goods - (see www.retuna.se). The narratives of garments will be documented through interviews with the donors, and we will shadow the garments through the re-cycle process at the ReTuna mall. ReTuna Mall aims for reuse, i.e., to re-introduce disposed garments to the fashion consumers visiting the mall. Accordingly, some garments will re-enter the consumption phase, but most garments are likely to be sorted out and re-defined into other purposes than being wearable.
Reuse s one f the most common strategies used by fashion companies in their attempt to make the supply chain sustainable (Kant Hvass 2016). Obviously, reuse f fashion reduces the demand for new garments, which in turns reduce the negative environmental impact of the textile production processes (Woolridge et al. 2006, Farrant et al. 2010, Castellani et l. 2015). Reuse of fashion goods has the same basic structure as that of waste management, i.e., organized in three separate phases: collection, sorting and reprocessing. The literature on

reuse in general is extensive, and studies on fashion reuse have become popular too. To give some examples, studies of consumers fashion disposal behaviour concentrate in most cases on disposal channels, behavioural motivations, disposal reasons and demographics of consumers that behave in specified ways (Laitala 2014). Studies that focus on donation of fashion as disposal method on the other hand (i.e. Ha-Brookshire and Hodges (2009), Ekström et al. (2015) describes general motives for the disposal, but do not uncover the actual process or the activities that are involved in the donation - i.e. why is the individual garment donated and how is the sorting performed. These type of questions are touched upon in studies of the practices of sorting (Hawley 2006, Botticello 2012), but these do not follow the garments through the whole process. Of interest for us is also studies on waste management in general, e.g., Åkesson's (2012) study on how a disposed goods are transformed and given new meanings as they travel through the phases of reuse; that what is waste at one phase will transform into a resource in another. Disposed goods can also, with or without disassembling, re-appear in different shapes with different meanings at another stage in the process (Gregson et al. 2010).
As stated above, we will trace and document the travel of donated fashion garments through the collection, sorting and reprocessing activities at the mall. For each step we pose two major questions: what happens and who/what are involved in this. In doing so, we take on the ANT approach to ur objects of study and consider non-humans as equally possible instigators of actions and inscribers of meaning as humans. From our literature review, we believe that our study provides a somewhat novel approach to fashion reuse, and that it has the potential to contribute to the growing body of knowledge of sustainable fashion.

The B Side of Social Innovation. Grassroots Technologies Development and Waste Picker Cooperatives in Greater Buenos Aires (Argentina). *Sebastián Carenzo (Universidad Nacional de Quilmes)*

This paper draws on an ongoing collaborative ethnographic research developed with Reciclando Sueños a wastepicker´s cooperative located in Greater Buenos Aires. This collective experience Currently has been developing experimentation skills for recycling materials recovered from households and industrial locations, managing to develop a sort of "verticalization" of its production process. In addition, they have focused its experimental praxis on post consumer plastic materials that lacks a market to be commercialized, and therefore, are buried in landfills. Drawing on an ethnographic analysis of this active experimental work I will focus on three related analysis lines:
In the first place, my current reflection raises an uncomfortable question: which actors are legitimately qualified to develop practices of technological innovation in the field of waste management in our contemporary urban societies? This issue becomes especially relevant if one consider that this creative/experimental praxis is carried out by "cartoneros" (wastepickers) who lacks the symbolic, economic and technical capitals required to socially legitimate these competences.
Secondly, my aim is to challenge the linear relationship between "value adding" and "technological development" when analyzing the situation of informal recycling. Specifically I discuss the top-down, linear and deterministic approaches to address social innovation issues that are promoted either from gubermental and non-gubernmental institutions.
Finally, a third reflection addresses the limits of this practice of innovation that does not follow established bureaucratic and procedural standards. Departing from the notion of epistemic (in)justice, initially proposed by Miranda Fricker (2008), I draw a critical reflection on the requirement of transparency, as a key issue that shapes innovation skills aimed at waste management, and defines what is still thinkable and (un)thinkable in this field.

Governance of Peri-urban Metabolism. Linking Waste Management and Urban Planning.
Andreas Obersteg, Jörg Knieling (HafenCity University Hamburg)

This contribution is produced in the frame of the Horizon 2020 Project REPAiR (REsource Management in Peri-urban Areas: Going Beyond Urban Metabolism). REPAiR aims at extending the concept of Urban Metabolism (UM) through two aspects: by exploring the roles of governance, territorial and socio-cultural characteristics; and by strengthening the relationship between resource management and design - not only of products, but also space.

For these purposes REPAiR will develop, test and implement strategies for improved urban metabolisms in six peri-urban living labs in the case study areas of Amsterdam, Ghent, Hamburg, Łódź, Naples and Pécs.
The focus of this presentation will be firstly on results of a governance analysis in the case study areas, with a special emphasis on the governance setting of the case study in Hamburg. This case study aims at improving waste metabolisms with a priority on bio waste. Its area comprises peri-urban parts of the district Hamburg-Altona and the County of Pinneberg. The area is characterized by a variety of urban and peri-urban settlement types (e.g. urban cores, village centers, suburban detached houses, large housing estates, retail, logistic etc.), open spaces (e.g. agricultural land, natural preservation areas, etc.) and a very distinguished concentration of tree nurseries and horticultural farms (circa 500 enterprises).
Within the presentation, the governance setting and the various stakeholders will be mapped and an overview of their interests and possible conflicts will be given. The stakeholder setting comprises 4 main typologies: actors from the public sector on numerous governmental levels (municipal, county, land, national, EU) and different fields (waste management, environmental planning, spatial planning, business development); the private sector (agricultural enterprises, waste management, recycling, housing and real estate); intermediate actors (NGOs, economic chambers, associations); and citizens (inhabitants of different types of quarters and neighborhoods with different socio-economic and cultural structures as well as different types of built environment).
The presentation will conclude with an outlook on next steps in the research, including a typology of different settlement types to be examined and first ideas for participatory research in these areas.

Friday, 11.30 – 12.30

Constructing the Waste-scape – Spacing Practices in a Waste Management Company.
Anette Hallin (Mälardalen University), Carina Färm (Vafabmiljö AB)

As the awareness of the need for strategies for sustainability has grown, the interest in waste management has increased. With policy documents like Agenda 2030 and the European waste framework directive , waste management is on the agenda of international, national, regional and local governments, and the pressure to manage waste well is increasing, also in Sweden. The purpose with this paper is to explore how a waste management company deals with this increased pressure on an organisational level. We do so through by analysing a case.
The case is a mid-sized waste management company following the business model that is common among several waste management companies in Sweden. The business model includes three types of activities: public service activities that collect solid waste from households, commercial establishments and industry; processing activities that transform this waste; and marketing activities that enable products and recycled material to re-enter the economy (Corvellec, Bramryd, & Hultman, 2012). Formerly a company owned by 12 municipalities, but since 2016 a municipal body of its own with representatives for the former owners (the municipalities) as executive board, the organisation has undergone great changes during the past year. It has taken over all members of (white collar) staff that previously worked at the municipalities with waste management issues and has today increased responsibility for what types of waste to collect and process. Today, the organisation totals about 250 employees, including administrators, managers, customer service, sales personnel, as well as waste management workers of various kinds.
Semi-structured interviews have been undertaken with 21 managers at the company. In addition, an ethnographic approach has been used where the researcher has spent one day a week during 6 months at the company, observing and documenting meetings and participating in waste management activities. The empirical material consists of transcripts of the interviews, field notes and photos taken during the days at the company. In addition, this paper is written in collaboration with the director of the company, and together the authors have worked inductively, from a curious stance and shared interest in how organising happens on a micro-level and how this can explain what goes on in the company.
A first analysis of the empirical material shows that the multi market-exposure of four different and conflicting markets, the markets of politics; waste-as-material; technology; and commerce, that Corvellec & Bramryd has identified in another study of Swedish wastemanagement companies not only exist also for this company (Corvellec & Bramryd, 2012). Our analysis however also shows that the logics of the four related markets not

only play a strategic role for the company, but that they play out on an organisational level and on a day-to-day-basis, creating internal conflicts within the company.
We then explore how the four logics are constructed by those voicing them, in time as well as in space. This way we are able to dismantle the spacing practices (Vásquez & Cooren, 2013) of the waste scape of the waste management company is constructed; "waste scape" here referring to the organisation as a whole rather than to the physical place where waste is dumped and/or processed (cf Alley, 1998). These spacing practices disrupts the organising of the company and creates tensions, but at the same time seem to work as a basis for creativity and development (cf Drazin, Ann Glynn, & Kazanjian, 1999).
We conclude that managing the conflicts that emerge as the different logics clash as different spacing practices take place on an organisational level on a day-to-day basis, is thus not only a strategic challenge (cf Corvellec & Bramryd, 2012), but a managerial and leadership challenge of waste management companies.

Evidencing the Waste Effect of Product-Service Systems (PSSs).
Herman Stål (Umea University), Hervé Corvellec (Lund University)

This paper adopts a waste-centric analysis of Product-Service Systems (PSSs) to demonstrate that they do not automatically contribute to a dematerialization of the economy, a decoupling of production from material and energy consumption, and thus a transition toward sustainability. A qualitative analysis of various Nordic fashion PSSs that uses a combination of Tukker's (2004) classification of PSSs and the European waste hierarchy model demonstrates that the waste effect of a PSS is independent of its being a product-oriented, use-oriented, or result-oriented system. Rather, the effect depends on how the business model of the PSS organizes material flows at production, distribution, use, and post-consumption stages in relationship to prevailing waste regimes where the PSS operates. We suggest that if a PSS is to reduce its waste effect and contribute to dematerialization, its business model should design material flows that fit with the prevailing waste regimes within the area it operates and prioritize waste prevention before considering reuse, recycling, energy recovery, and landfilling.

What Is and What Should Be Food Waste: Trade-offs between European Institutional Tendencies and Regional Stakeholders' Discourses. *Raquel Diaz-Ruiz (Polytechnic University of Catalonia), Montserrat Costa-Font (Scotland's Rural College), Jose M. Gil, Feliu López-i-Gelats (Polytechnic University of Catalonia)*

Increasing attention are being devoted to anti-food-waste initiatives comprising both governmental-led and grassroots initiatives. The diversity in the ways food waste is dealt goes with the diversity in the ways it is conceptualized. There is neither official definition nor a definition generating large consensus. Multiple discourse on food waste coexist. This points the food waste domain not only as an emerging issue, but also as a largely controversial one, particularly in Europe, but not only. Despite the existing discrepancies, there is wide consensus on the magnitude of the challenge and the urgency of taking action. This was reinforced by the declaration of the Sustainable Development Goals (SDG) in 2015.
The influence of food waste definitional mind sets (discourse) on the prevention and reduction policies is crucial. In fact, both sides are interrelated. What is and should become food waste is currently being discussed nowadays with special attention in the European Commission within the new Circular Economy Package. This process could be understood as an attempt of institutionalization of a given mind set (discourse) to impose a common definition and reduction targets, and specific agenda. But, halving food waste as it is proposed in the SDG requires the implication of every single stakeholder, at all levels: worldwide, European, national and local. Regional and local agents need to be particularly considered throughout the process of framing the problem as in the end the implementation of prevention or reduction actions will always be local. This process is just a sample of the occurring struggle among diverse discourses to signify food waste and accumulate strength to propose specific agendas. The vocabulary and definition used, that is the discourse, crucially influence the perception and attitude of different stakeholders towards the problem, and the policies that will finally be sponsored.
In view of that, the aim here is to examine the implications of the multiplicity of representations and interests held by regional food and waste stakeholders in order to include them in the current discussions. In particular, we focused on the Catalan context in which the use of the vocabulary in Spanish or Catalan has even more

negative connotations than the concept in English. Now that there is still no official definition or vocabularies is important to understand stakeholders' discourses to create debate spheres in which they feel comfortable to speak. To do so we carried out an exploratory analysis in two stages: i) in-depth interviews to stakeholders along the food supply chain with different profiles: governmental, private sector, social/sensitized ones; and ii) implementation of different workshops and in-depth interviews with stakeholders of the primary, industry and wholesalers food sector.
The results point that the concept of food waste, and especially the Catalan and Spanish terminology, generates a clear primarily rejection effect on food sector stakeholders. Stakeholders use a large variety of terms while focusing on different particularities of the domain. In addition, we identified four definitional discourses comparable to one of the European definitions of food waste. Moreover, we deepen on the acceptance of this definition based on the destination of the waste treatment within the fruit and vegetable, milk, meat and cereal sector. Despite the disagreement on the destination and vocabulary used there are some common points to work with. Based in our findings we discuss some practical and social implication as for example the necessity or not of using different vocabulary in Catalan and Spanish. Or how to adapt the concepts to communicate the issue to different stakeholders depending on the aim of the communication.

The Politics of Food Waste – Governing Waste Reductions through Social Innovations.
Tobias Gumbert (Münster Univerity)

The reduction of food waste and its ecological and economic impacts has risen rapidly on public policy agendas in recent years. Governance strategies favored by international organizations and national political actors are predominantly technological solutions, optimizing food chains, gaining more accurate data concerning the extent of food waste, reforming date labeling and creating public awareness through campaigns and informational approaches. While many of these measures target entire food value chains, there has been a dominant tendency to focus on regulating the sphere of food consumption and editing wasteful behaviors.
A growing number of local and transnational anti-food waste initiatives widen this scope of reduction measures beyond the focus on efficiency gains and consumption behavior. A range of initiatives, such as the UK-based "Feedback" network of activists and food savers for example, critically address the role and responsibility of a multitude of actors within the "production" of food waste as well as existing structural dynamics, and foster a return to traditional strategies of avoiding food waste and thereby advocate absolute reductions. And yet, many governance schemes aim at incorporating these initiatives as "social innovations" that combat the inefficiency of the global agri-food system, thereby legitimizing Circular economy narratives and the dominance of the Waste hierarchy model through civil society participation.
The paper gives an overview of different anti-food waste projects and initiatives in the UK and Germany, their diagnosis of the waste problem, preferred solutions, goals and their motivations to engage with this issue. While some activists and socio-environmental anti-food waste movements question the win-win prospects of the economy/ecology dichotomy explicitly, others tend to buy readily into this discourse. A central question in this regard is whether a bulk of these relatively new initiatives can easily be integrated into existing governance arrangements of reducing food waste or if these practices can be categorized as alternatives to dominant political trends that are able to import innovative ideas to improve and/or correct current reduction trajectories. To answer this question, it is vital to understand to what degree these initiatives perceive themselves as being political, critical of a modern consumer culture and the growth paradigm in general. A content analysis of position papers, media reports and qualitative interviews will constitute the basis for the analysis.

Cohabiting with Trash. *Veera Kinnunen (University of Lapland)*

The European Union has set as its long-term goal to become a resource efficient "recycle society" by 2020. The ultimate goal is that the inevitable side-products of living will no longer be treated as an unwanted surplus to be gotten rid of but instead as a resource that can be reused again and again. In a perfect recycle society the materials flow in an endless circular motion and there is no need for new raw materials. The European Union is strongly guiding both production and waste management in this direction with its waste policies and legislation. This goal also affects how people live their everyday lives in homes and offices. Waste has become

a complicated matter and new routines and treatment practices are constantly forming around waste. Waste has ceased to be an abject to be quickly flushed down the drain or dumped in the bin. Instead, people are constantly finding innovative ways to co-exist peacefully with it. In this paper, I will illustrate the creative craft of living with waste through one specific form of waste treatment: Bokashi composting. In the practice of Bokashi composting waste matter is something that is not merely taken care of out of duty, but something to be thoroughly and joyfully engaged with. It is treated as a cohabiting companion that communicates and cooperates with the composter. I argue that Bokashi composting as a practice creates a new kind of ethical relationship with waste that is based on affectionate reciprocity and generosity (see Diprose 2002; Hawkins 2006). I am tempted to take the argument even further and add that bokashi practice enacts a new ontological stand in which boundaries between humans and other organisms are melted together. Humans as well as composts are no longer treated as clear unities but instead as lively meshworks (Ingold 2010) of microbes and other organisms.

"They just keep escaping and then coming back to haunt me": Fleeting Encounters and Fragmented Objects in the Flea-Market. *Tara McAssey*

A 2009 report by the United Nations Economic Commission for Europe found that the European Union produces over two billion tonnes of waste and this is rising steadily every year. This is exacerbated by the reduced lifespan of many Western commodities, governed by the constant flux of trends. This results in goods being deemed redundant when they are no longer chic, rather than no longer useable. Such 'failures' of material goods to remain useful, necessary and wanted are often trivialised as being indicative of consumer greed and a predilection for 'newness'.
However, while waste may be defined as a 'spectral horror' (Hetherington, 2003:164) it can also be a resource. Disposal never removes goods completely but instead moves them along to other sites, creating new resources and forging new social practices.
Drawing on ethnographic research in Dublin, this paper explores the entanglement of humans and recycled/'pre-loved' belongings for sale within a flea-market in post-recession Ireland. The flea-market could be considered a trash heap composed of the detritus of society; a hodgepodge of broken, dusty, old objects. Yet, this superfluous, omnipresent trash, unwanted by most, comes to represent something very different for the flea-market's attendees.
The flea-market represents a subversive space where we witness the metamorphosis, and the reconditioning of, trash into useful, coveted and desirable objects. Here, second-hand exchange absorbs surplus 'waste' and propagates low-waste modes of consumption. This conduit for 'trash management' illustrates how people creatively utilise abundances of rejected material goods within iconoclastic spaces as an integral part of cultural expression. This paper seeks to explore how such practices of reassigning 'usefulness' and meaning to previously 'useless' and unwanted objects, translates into new discourses, value systems and social practices which are simultaneously multiple, contested and transformative.

Friday, 13.30 – 15.30

From Waste to Energy: (Re)Cycling and Circulating Urban Flows. *Laurence Rocher (Lyon University)*

Everyday practices regarding waste generation (such as composting, re-using) as well as policies stemming from local, national or European authorities (such as waste hierarchy or compulsory levels for material recycling, calls for circular economy, but also measures related to energy and climate concerns) induce a changing nature of waste that end up in municipal facilities. Material flows of waste are expected to evolve, given that quantities are meant to reduce, but also because of the sophisticated separation that has to be implemented in response of higher objectives of recycling. These changes are marked by sound uncertainties, despite of the increasing data produced and analysed by assessment tools and observatories. In the same time, socio-technical systems on which urban waste services rely are highly path-dependant, obdurate, driven by their own temporalities (such as the renewal of installations).
Eco-cycling urban waste induce a larger « problem-span » (from preventing/avoiding waste to valuing recycled materials or energy) and a growing number of separated flows. We hypothesis that these reshaped

flows has to meet with intricate infrastructural, organizational and jurisdicisional systems. By analysis waste-to-energy projects (from literature and real case studies in France and Europe), we aim to shed light on the complex issues and uncertainties urban services have to face when talking about managing these flows (of waste, of materials, of energy). We will show how the notion of 'reversibility' is taking importance in law, in decision-making, and in ruling plants and infrastructures.

The (Un-)becoming of Urks: Infrastructure Maintenance as a Liminal Condition.
Björn Wallsten (Linköping University), Hervé Corvellec (Lund University)

This paper starts from an understanding of subsurface urban infrastructures as consisting of two distinctly different realms. The first of these is the connected, functioning one that supply modern societies with system services. The second one is the disconnected shadow world of "urks", i.e., rejected and left behind cables and pipes that have accumulated in quite substantial amounts as systems
have been continously altered (extended, retracted, repaired and so on) throughout decades of urban development (Wallsten, 2015).
Following from such a view, maintenance work might be understood as a luminal condition that on top of the fixing and mending that its normally associated with, also includes the decomission of superfluous system parts. Thus, maintenance is also a process of sorting things out in which urks are deported to a world where they remain materially present but no longer serve a societal function.
We regard infrastructure maintenance as a liminal rites de passage orchestrated by maintenance workers. In these interventions, system parts occur as waste-like, unstable, flickering that might be for example repaired and re-connected and yet again perform a systemic function, they might be disconnected and forgotten underground, or they might be dug up and recycled. In this way and contrary to the ANT argument that becoming must occur in relationships, system parts become urks when their relations are abruptly cut and their former linkages seize to exist. In order to engage in such an analytical effort, the role of maintenance and repair crews is pivotal since they are the gatekeepers through which all urks (un-)become.

Recovering food waste and the appropriation of spaces in the city of Lyon.
Fairley Le Moal (University Lyon 2, Stockholm University)

Numerous innovative ways of sorting out and recycling waste are practiced worldwide, in a context where criticism leveled at the consumer society is on the rise due to the requirements of sustainable development.
This paper focuses on civil responses to the phenomenon of food waste and is based on a master's thesis in anthropology where I examined the processes through which unsold products found in supermarket bins and after street markets are recovered for consumption purposes. The ethnography was based on four months of participant observation and various interviews led with two groups in Lyon (France), namely *Récup & Gamelles*, a non profit gleaning organization and *Les Gars'pilleurs*, an informal dumpster diving movement.
Gleaning and dumpster diving activities used to be mainly praticed by destitute people and/or in informal activist spheres, but my research has proven that the recycling of food unsold food is also being appropriated by institutions, and companies. This observation of a plurality of actors mobilized around food waste enables us to put to the forth the dynamism of waste as a category, of which meaning is constantly negotiated according to the socio-cultural context, the time and the space.
From a material perspective, food waste can be understood through its mobility as an ex-commodity that has lost it's exchange value. By retrieving unsold products, the actors are reinstating the usefulness of abandoned materials and therefore gaining control over the production of value. This visibilisation of waste also generates appropriation processes of urbans spaces and contributes to processes of the making of the city. Spaces of waste become places of food supply.
Studying waste from an anthropological perspective, trying to understand the meaning of waste for the actors managing it gives us a lens through which to make sense of social change and political action.

Friday, 16.00 – 17.30

Wasting Folded: Notes on Consumers, Consumption and Food Excess in Everyday Life.
Sebastian Abrahamsson (Copenhagen University)

In 2011, the FAO published what was to become an influential and widely-cited report on global food waste, its extent, causes, and possible means of prevention. At the very beginning of the document a clear distinction is made between *food loss* (which takes place at production, post-harvest and processing stages) and *food waste* (which takes place at retail and consumption stages). Whereas the former relates mainly to infrastructure, transportation and management as well as issues to do with weather and pest attacks, the latter relates mainly to human behavior. More specifically:

> "At the consumer level, insufficient purchase planning and expiring 'best-before-dates' also cause large amounts of waste, in combination with the careless attitude of those consumers who can afford to waste food…Food waste in industrialized countries can be reduced by raising awareness among food industries, retailers and consumers." (2011: v)

The premise of the role attributed to the consumer in the quotation above is that s/he i) is a bad planner, ii) has a careless attitude and iii) is unaware of the problems with food waste. In this paper I wish to complicate the configuration of the food consumer/food waster as it is often presented in anti-food wasting campaigns, reports and policy documents. Drawing on examples from secondary sources as well as from fieldwork, I suggest that food wasting does not only happen when, or if, edible food is discarded in a bin. Excessive production of food, or the "misuse" of resources to produce animal protein may, for example, be considered wasteful if feeding a growing world population is at stake. Closer to everyday life, possible food waste may also become a relevant factor when planning a weekly menu, and shopping food, for a big family; potential waste is built into supermarket campaigns and retail strategies ("buy 3, get 1 for free"); packaging and the size of prefabricated meals may also determine whether a food goes to waste or ends up being eaten; and food waste management and recycling makes us, possibly, question the very idea of wasted food altogether.
In this paper, then, I wish to suggest that configuring waste as an outcome of consumer behavior is misplaced. Instead I will argue, drawing on topological ways to conceptualize time and space, that wasting is *folded* into and along the entire food chain from production through to consumption and disposal. Not as an actual wasted food item, but as a potentiality – an "absent presence" that troubles the (still) edible, yet perishable, food item in question. If food waste is approached in such a way – that is, as a potential outcome of growing, storing, making, marketing, packaging, branding, advertising, managing, purchasing, cooking, eating, etc. foods – it becomes untenable to suggest that the solution to the problem is raising consumers' awareness.

Food Waste Across Space and Place: Understanding the Transition of Food into Waste in the Context of Urban Lives in the UK. *Jordon Lazell (Coventry University)*

Consumers continue to be responsible for a substantial proportion of food wasted in developed countries. Such concerns should be placed at the forefront of addressing food waste since efforts to minimise food waste within the food supply chain will achieve little if the end consumer throws away or mismanages perfectly edible food. We need to understand why consumers are so wasteful and despite increased academic research exploring this issue, several gaps and limitations exist in current knowledge. Solely agentive and cognitive considerations of how consumers behave have been challenged given the attitude-behaviour gaps demonstrated (Lazell, 2016), thus prompting a call for alternative approaches to consumer food waste behaviour (Evans, 2014). Such behaviours are inherently complex given the demands on consumer within their everyday lives (Quested et al. 2013), with performances of consumption embedded within the routines and habits of daily and weekly routines (Warde, 2005;2014). Much of the research on food wastage at consumer level is focused on the home due to the domestic anchoring of food activities however there is a lack of understanding of how practices outside this space hold influence. Questions remain over how different arrangements of living, such as differing consumption, working and leisure patterns, influence the decisions made and actions taken by consumers that lead to food wastage.
This paper gives further understanding of the transition of food into waste at consumer level. Specifically insight is given on how food consumption and subsequent food wastage behaviours are shaped by other practices performed over the spaces and places encountered in everyday life. A practice based approach was

taken, drawing upon the actual lived experiences of consumers to comprehend how the management and wasting of food varies across different patterns of living. An innovative mixed method qualitative approach was employed. 23 participants completed the study designed across two stages. Those involved took pictures of food prepared, eaten and thrown away and also collated shopping receipts for a period of a week. Following this a semi-structured interview took place where a discursive narrative was drawn from discussion of materials collected as well as participant employed mapping of weekly routines, places visited and their household arrangements. Findings indicate that comprehending consumption behaviour across spaces provides critical insights into the determinants of food waste at consumer level. Breaking down consumers into patterns of living arrangement serves as a useful way to differentiate habitual behaviours that lead to food wastage. Potential new focuses to develop and further current food waste prevention initiatives are offered.

Modern Kitchen - Utopia Redux or Hopeless Cause. *La Vergne Lehmann (University of Adelaide)*

In the decades following World War II, the modern western kitchen started to develop through the combination of improved infrastructure in the form of facilities such as running water and electricity coming directly into the home along with the post-war manufacturing boom that was able to supply homes with a range of new kitchen appliances. In the supply of food to consumers, industrial agricultural practices led to an increase in the range and availability of produce and food processing technology increased the shelf life of many packaged food products. This was the modern Kitchen Utopia.
However, by 1960 when Vance Packard published 'The Wastemakers', kitchen appliance manufacturers had already identified the kitchen as a room where they could promote increasing consumption of kitchen appliances through planned obsolescence.
Since that time changes to lifestyles, working habits, technology, food health standards, labelling and food availability along with increased knowledge of different cultural food options have inevitably changed what and how people purchase, prepare and consume food. The food we consume is a combination of the organic food produce that we either purchase or grow ourselves, the processes by which we prepare and cook that food for consumption and finally the activity of consumption. All of this occurs in our kitchen and as a consequence produces waste. The kitchen was Utopia no more.
But kitchens produce more than just food as waste. Other waste by-products include the transient packaging materials and the more durable gadgets and infrastructure. In recent years the problem of rapidly growing landfills, the environmental impacts of poorly managed landfills and the recognition that much of what was being thrown away still had some value has seen the emergence of waste resource recovery. This positive reappraisal of waste materials, with their value increasing is a direct result of greater recognition of waste as a resource that can be put to better use through recycling and reuse.
Consequently, where once we considered the consumption – waste process to have a relatively linear path, that process can now result in a number of pathways where items or the materials in those items can be diverted back through the consumption system several times before they complete their journey. Perhaps we are finally seeing a Kitchen Utopia Redux.

Wastelands - an Oceanography of Trash. *Petra Beck (Centre Marc Bloch)*

Oceans contain higher and higher concentrations of plastics and debris. With over 270 000 tons of plastics in the oceans[1] a message in the bottle will be hard to find. Marine pollution is growing. In 2050 there will be more plastic in the oceans than fish, a study stated recently[2]. Plastic is floating, the debris is forming gigantic assemblages; nightmares of consumption. Here it is: the "away" of throwing something "away". The "away" that doesn't exist. Being a "Place of no return", an "awayplace", a space, that can contain polluted things is an idea, that is connected to the socio-technical imaginary "ocean" since the ancient world.[3] Millions of tons of plastic "disappear" into the oceans every year, without evidence of their whereabouts. Here the material, origin of calculated chemicalphysical-
synthesis processes and rational design choices, becomes an amorphous, mystic matter, without a grasp. Plastic becomes the ocean and part of its myths. To counsel these assemblages and hear their "excruciating complexity"[4] and to see them as "an open-ended collective" is the aim of this ethnographical research.

The project examines the oceans as a specific thingspace that relates people and things on a global, biochemical, ecological, political and social level. The research focuses also on the complex materiality of plastics itself. How to work with plastics' complexity? What new conceptualizations of human-environment interfaces and relations emerge? How is plastic challenging the entities "nature" and "culture"? How do materialities and knowledge circulate through various scales – from nature-culture interfaces on a molecular level to global environmental politics and infrastructures?
The open questions concerning the quantification of microplastics, its complex interactions, behavior and effects are still as ubiquitous as the material itself. Over 10,000 types of plastic polymers, countless additives, complex interactions, a per annum production of 260 million tons, an almost infinite scope in usage, all this raises "the issue of the ontological status of plastics" (Gabrys, Hawkins, Michael, 2013: 4). And also methodological questions: How to develop an interdisciplinary language to work with "plastics"? How to deal with complex scaling processes? How to empirically work with global phenomenona?

Designtransposal Workshops: Visualising the North Atlantic Gyre.
Katarina Dimitrijevic (Goldsmiths College University of London)

We live in a plastic debris era. In the first decade of the twenty-first century plastic production quadrupled in comparison to the end of last century. Our global oceans are the largest unprotected ecosystem on the Earth. Anthropogenic litter is present in all marine habitats, from the coast to the most remote points in the oceans. Plastic and metal are the most prevalent litter item found on the deep sea bed. Plastic waste is concentrated in five rotating currents, known as 'gyres.' (Maximenko et al., 2012) Marine research has revealed that synthetic polymers are a toxic pollutant, as they are spread throughout all the world's oceans. Currently 269,000 tons of plastic composed of 5.25 trillion particles are afloat at sea (Eriksen et al., 2014). The impacts of plastic pollution, after entering the food chain, through ingestion, are: cancer, malformation and impaired reproductive ability (Takada, 2013).
KraalD is a design praxis, embedded in a social narrative which strives to journey beyond the product design vocabulary, exploding the design advocacy framework within socio-cultural, environmental and critical discard topics. The praxis argues that a "changing relation to disposal is a changing relation to oneself." (Hawkins, 2006) Thus, the overall aim is to promote the minimization of future urban landfill, nurturing socially relational and ecocentric attitudes. This paper explores design workshops as a social research method (Rosner et al., 2016) entangled with 'languaging' (see e.g. Tham, 2016) in design research practice. Therefore, it is worth mentioning at the very beginning that this research will use self-derived vocabulary, languaging within the text in order to 'flip-flop' (Bataille, 1991) in between complexity currents of the climate change, everyday plastic litter and design research; approaching aquatic pollution and rise of the 'Plastisphere' (2012) through the visual narrative of Designtransposal workshops held in various UK's High Educational settings during 2015. In reflecting upon three workshops facilitated by KraalD, the paper will further expand upon the initially posed question: How can we gaze in to the radical environmental changes facing us in the 21st century and visualise toxic chronic disaster in a joyful way?
The Designtransposal workshop is combining design advocacy and marine scientific data, as a participatory platform to support making, re-use and discussion on the social, cultural, political and science qualities of waste and 'social things.' (Brown, 2001) Worksop facilitates a 'trash talks' (see e.g. Spelman, 2016), a joyful conversations platform to create awareness of Global North's 'living in denial' (see e.g. Norgaard, 2011), hoping to support change in personal daily habits, materiality values and emotions with/in things. The paper will be visually narrated with the workshops' outcomes and praxis visual analysis, e.g. making and experiencing a toxic plastic soup at a Goldsmiths, University of London, graduate student workshop and co-creating garbage patch installations at University for Creative Arts & Falmouth University undergraduate student workshops, as the visual representation of the North Atlantic Gyra's qualities. The design workshops approach allows invisible marine debris to become visible, through do-it-yourself (DIY) and do-it-with-others (DIWO) technologies.
How can we transgress the surplus-driven consumer culture? Perhaps in taking on the seemingly valueless discarded plastic; in transposing things into a floating objects and 3D installations, we can reveal how disposed materiality can contain a dimension for spaces of possibility, creating new values and even hope for a Global and Planetary 21st century de-pollution scenarios. Thus, it feels as a personal imperative call, to all human

collective that in order to raise new planetary paradigm, I/We need to start fundamentally transposing the way we design, manufacture, distribute, consume and dispose in our toxic futures.
I trash therefore we are.

Sand, Sky, Bottle Caps, and Bird Bones: Recovering the Animal in Chris Jordan's Visualizations of Marine Plastic Pollution. *Micha Gerrit Philipp Edlich (Leuphana University of Lüneburg)*

In recent years, American photographer and filmmaker Chris Jordan has aimed to visualize what cannot be visualized and thus can be neither fully comprehended nor ethically considered. In the first installment of Running the Numbers: An American Self-Portrait, a series of digitally manipulated images begun in 2005 and collected in print format in 2009, Jordan interrogated, sometimes with acerbic wit, the excesses of an insatiable consumer society and grappled with the mind-boggling statistics that are commonly used to capture and, to some extent, mask the magnitude and detrimental impact of (late-)capitalist phenomena such as GMC Yukon Denalis or Barbie Dolls. In 2009, Jordan started a related and yet conceptually and aesthetically very different project to represent a major environmental problem that is literally out of sight, beneath the surface: On the Midway Islands, Jordan began to photograph and film young seabirds that were either painfully dying or had already slowly suffocated after being fed random pieces of plastic that their parents had collected in the so-called trash vortex, a remote area in the North Pacific the size of Texas filled with flotsam and jetsam. To the casual viewer, these haunting images, particularly the close and close-up shots of decomposing bird cadavers, their chests stuffed with gaudy, plasticky debris, evoke conflicting emotions similar to those triggered by, to give but one example, Emmet Gowin's austere black-and-white aerial photographs of the lunar landscapes of the Nevada Test Site. Jordan's macabre tableaus also issue a challenge to scholars in the fields of visual studies, discard studies, environmental literary and cultural studies, and animal studies, as they point to an issue that has been, particularly in comparison to other long-term, large-scale, but similarly elusive environmental problems such as radioactive waste, toxic pollution, or global climate change, underestimated and neglected. Jordan's photographs and film project not only pose pertinent and timely questions concerning ignored but nonetheless pressing environmental concerns such as ubiquitous and highly mobile plastic trash, but they also challenge viewers to consider how spatially removed, inaccessible, and hence invisible problems such as the trash vortex can be visualized, comprehended, and ethically considered. In addition to the issue of mediation, his photography and film project Midway: Messages from the Gyre thus highlights questions of affect, ethical regard and responsibility for human and nonhuman animals, materiality and embodiment, or (global) (inter-)connectedness in contemporary environmental(ist) discourses. An investigation of these concerns in particular and Jordan's project in general, particularly in the light of recent discussions of "rubbish ecology" (Patricia Yaeger's term) in American Studies, trash and waste in ecocriticism (cf., for instance, Heise or Phillips), the visual turn in environmental literary and cultural studies (cf., for example, Dobrin and Morley), and, more specifically, animal death in animal studies (cf., for instance, Johnston and Probyn-Rapsey) is long overdue, and this contribution aims to address this gap in the literature. By pondering the disturbing finds of Jordan's photographic and filmic beachcombing mission in Midway vis-à-vis a variety of related cultural representations, for instance online travel blogs or scientific papers dealing with mobile trash and trash vortex, this contribution not only attempts to trace and theorize the gradual emergence of an exemplary environmental problem in contemporary media as well as from specialist to public discourses, but, perhaps more importantly, also to extend the recent work by Chia-ju Chang at the intersection of waste studies and critical animal studies. In other words, it not only attempts to gauge the possibilities and potential pitfalls of transformation, magnification, and distortion that an interventionist artistic project such as Jordan's necessarily entails, but it also aims to prevent the erasure of the vulnerable animal body from the anthropocentric record. Ultimately, this contribution seeks to offer an alternative to the general perception of Jordan's photographs as anthropocentric memento mori by insisting on the spectral presence of animals amidst accumulations of human trash.

Unpacking Waste and Creating Opportunities for Emancipating Change.
Jutta Gutberlet (University of Victoria)

In combining photography and text, I seek to illuminate dominant facets and discourses on waste that emerge through different ontologies and epistemologies. Broad understandings of waste, its management and the perceptions of waste workers regarding their everyday experiences from around the world will be contrasted in this photo-essay style paper. Community engaged research on waste and with waste pickers in different parts of the world, particularly in the global South, has generated rich material on the diverse and often reaffirming perspectives and voices of stakeholders working with waste or in waste management. Common lived experiences, as well as distanced discourses on waste and those who work with waste, capture part of the materiality of waste and suggests the scope of the immaterial aspect of waste and its consequences. What is waste? Hazard, filth, manageable object, resource or commodity? It is difficult to understand the meaning of being one of millions of waste pickers worldwide, without having felt the sensation of hundreds of flies trying to land on you, smelt the disgust of rotting household waste, sensed the pressure of immanent risk while working at a landfill, suffered from stigmatization for working in busy streets of Southern metropolises collecting and transporting recyclables. Waste issues are related to location and to scale. Waste is generated locally and yet quickly becomes a global problem because of the time-space mobility of waste. The scope of the impacts from waste depend on how individuals, communities and governments deal with it. Some forms of waste treatment such as waste-to-energy, are promoted as immediate technological fix to the problem of growing waste generation, tackling the problem at its roots. What does it take to perceive waste differently, how can we tackle the threats related to it? Waste has a unique fluidity and hypermobility, permeating spaces and remaining in time. The oceans, a final receptor and sink for leftovers from production and consumption, are a permanent witness for our historical mismanagement of resources. The disruption in space and of place due to waste accumulation has severe consequences to the livability for all living species on this planet, compromising future generations. What are the narratives that speak to the vastness of waste related challenges and what can promote structural and transformative change? Education, and more so, liberating education in the sense of Paulo Freire, consisting of generating acts of cognition rather than mere transferals of information are needed, questioning the politics of production, consumption and discard. Waste is political and so is education. Words and images are ways of gathering information to codify real situations and real people.

How to Make Your Compost. Waste and New Practices in the Light of Chthulucene.
Antoine Mérot (Irstea/ Pacte)

The world experiencing a critical period of doubts and reconsider the Human place in Nature. In Grenoble metropolitan area (France) the inhabitants may have the choice to recover with their environment through composting practices. Thus, the compost would make it possible to reconsider our organic waste, non longer like dirty matter, but as a resource. To explore this field research, I will borrow an anthropological approach. In this way, in immersion alongside my interlocutors, I try to create cooperations with them. For the time being, I have seen many conflict situations but also some synergies. Hence, former rural populations, « neo-rural », urban gardeners and semi-urban market gardeners do not have the same relation to the soil, the living. In this sense, the interrelations beetwen human beings and non-human beings – like animals, vegetables and invisible entities – seems related to this life experiences. This situation suggests that the non-human/human living-together is a deep, convivial and messy coexistence.

The Specter of Waste *Lisa Doeland (Radboud University Nijmegen)*

We are haunted by the specter of waste. While we try to stack away our nuclear waste in places no one will ever return to (hopefully), burying and burning 'residual' waste, it keeps coming back. Not full circle, but in strange loops, like the plastic soup that is taking possession of the oceans, of fish, of us.
The moment we stop desiring objects, they become waste. We use disposable items, minimizing care, saving time. But of course these items don't go away. Waste lingers. Waste remains. We act as if things are inert until they come to human consciousness and as if they become inert after we are done with them. But they don't. They remain. Or come back later. To live with the specter of waste is to be aware of this.

Although there is ample attention for the temporal dimensions of waste (Viney, Thill) and also mention of the "specter of waste" (Scanlon) and the "spectral quality of waste" (Viney), the spectrality of waste has not been dealt with head on. Drawing on the "spectral turn" of the nineties, that is not so much a turn to the spectral, but a spectralization of the turn (Del Piaro Blanco, Peeren) I will examine the spectrality of waste. What happens when we think of waste in terms of something that has no defined origin, that defies notions of linear progress and has no fixed destination?
The figure of the specter famously turned up in Jacques Derrida's The Specters of Marx. Derrida uses the specter to address metaphorical ghosts, to deal with figures that are simultaneously present and absent, giving rise to an ambiguous ontology and a paradoxical state of being and non-being – a "hauntology". I will take up Derrida's spectrality and show how this ambiguous ontological status can also cling to something as material as waste. For don't we act as if our world is filled with ontological U-bands (Morton), taking waste to some "away"?
Derrida writes that to speak with ghosts is also to mourn them. How can we mourn in terms of spectrality? How can we deal with – to use Guy McPherson words – that we 'completely trashed this place'? Mourning in terms of spectrality is not about localizing ghosts and keeping them buried, but about the act of learning to live with them. To live with waste. We should therefore resist the urge to conjuring away all specters in the name of a redeemed whole, a true Heimat (Jay) and keep in mind that the unheimlich resides in the heimlich (Freud). If the earth is our home, than our house is a haunted house. The clear distinctions between inner and outer, canny and uncanny, wanted and unwanted cannot be maintained. Timothy Morton remarked that "to be a thing is to be haunted". We have tried to sever ourselves from "Nature" and from other (life) forms, but we have failed. We have tried to keep the bad things out. But on a global scale there is no "away", stuff just goes somewhere else. We therefore have got to include specters and spectrality. It was not our house to begin with.

Saturday, 9.00 – 10.30

Overcoming Consumption Before It Consumes Us – The Challenges of Living According to the Zero Waste Philosophy in Today's Society. *Lise Benoist (Uppsala University)*

In its last report of 2014, the International Panel on Climate Change (IPCC) unequivocally presented human-made greenhouse gas emissions as the primary cause of global warming. It is acknowledged by the Office of the United Nations High Commissioner for Human Rights (OHCHR), that climate change's unprecedented consequences will "directly and indirectly threaten the full and effective enjoyment of a wide range of human rights by people throughout the world". In this time of environmental crisis, the issue of waste constitutes one of the most pressing ecological concerns that have to be dealt with. In such a context, the Zero Waste movement embodies one of the civil society-led solutions to overthrow people's environmental footprint. By promoting the right to Environmental Protection, stated in Article 37 of the Charter of Fundamental Rights of the European Union, and more specifically the right to a clean and healthy environment, it aims at tackling the issue of waste management, but also the challenge, beforehand, of waste reduction. The Zero waste philosophy also goes beyond the practical plan: based on a "less is more" mindset, it aims at denouncing and questioning the nonsense of the consumption society, and its dramatic environmental effects.
However, implementing such an idea into practice on an individual level proves to be a serious challenge. By focusing on the French population, and more precisely on the people interested in living according to the Zero Waste philosophy, I want to find out what are the practical and societal obstacles that those people come across and face on a day-to-day basis. To that end, I first conducted an expert interview and then provided my sample with an online survey. Assuming that the main challenge is our
consumerist society accompanied by a lack of environmental awareness, I will mainly rely on articles analyzing the issues of waste and overconsumption. A better identification and understanding of the challenges to the Zero Waste philosophy in today's society will allow us overcome them more efficiently.

Waste as "Resources" in a Community Organization: The Municipality of Capannori (Italy) and the "Zero Waste Families" Project. *Marta Ferri (Zero Waste Research Center)*

In 2007 Capannori (Tuscany, Italy) was the first European municipality to adopt the Zero Waste strategy. Committed to waste reduction, the municipality of Capannori have proactively adopted waste reduction practices, as outlined by the EU in their 2015 Circular Economy Strategy package, by supporting local and international projects involving industries and the civic society. Some examples of these projects are the "Circular Economy: a Local District", the "Life Eco-Pulplast", the "Daccapo Reuse Center" and "Pick the Paper up!" projects which respectively involve industries in Lucca Province, local charitable companies and schools in the Capannori's territory. However, since 2014 the residual waste (in terms of urban solid waste management) flow has stopped at 20%. Despite the high separate collection rates and the decrease of waste generated, the municipality are perplexed at the sudden halt. Devoted to achieve "zero" residual waste by 2020, as outlined in the Zero Waste strategy, the municipality of Capannori in collaboration with the activists of the Zero Waste Research Center and the local waste management company, recently started a pilot project focusing on the urban domestic waste generation called the "Zero Waste Families of Capannori". The participants of this project are 15 families (understood as domestic users) and the main aims of the pilot are: a) to build an aware and educated community about waste value and role in the society; b) to decrease the amount of residuals generated by the local population.
Connected to the international "Zero Waste families" initiative, promoted by the Zero Waste Europe Foundation, the "Zero Waste Families of Capannori" project seems to promote the idea that waste (the recyclables and compostable) are community resources, while residuals (considered useless and even unhealthy) are a problem that must be solved. Since this project would promote the construction of a "community inside a community", with special rules to follow (e.g. monitoring the recycling waste flows and compost what they can) and special bonuses (e.g. a discount on the waste fee), this paper aims to explore the effects of the "Zero Waste Families of Capannori" project on the community, in terms of the changes promoted in: the town organization; the waste management; the waste policy.
Another focus of analysis is the role given to waste in the project. In this context, waste is theorized as an ambiguous material category because it both represents an object and a social act – e.g. the act of judging something useless or unhealthy and the consequent act to dispose of it. This ambiguity is also determined by the complexity of the process of "wasting", which – according to O'Brien (2008) – is a field of socio-political and economic struggle. Taking into account the ambiguity of waste as a material category and its role and value in a context aiming to create a circular economy, like the municipality of Capannori, this paper wants to understand if waste seen as resource in a community could take features of commons. Commons are here understood as community resources capable to promote an alternative socio-economic and political societal organization. Viewing waste as a community resource seems to go towards the changes required to promote a more sustainable society and something policy makers should consider further in their promotion of the circular economy as an "exit-strategy" to the actual situation of progressive lack of resources.
In conducting this analysis I intend to use an ethnographic approach, related to qualitative research e.g. semi- and no-structured interviews, fieldwork, participant observation, discourse analysis, and document analysis. Being both a social researcher and the project manager of the "Zero Waste Families of Capannori" project, this position could give me the unique possibility to get access to all project data, to decide how to conduct the project and to personally know all the actors involved e.g. the municipal administrators, the local waste management company's employees involved, the activists of the Zero Waste Research Center that work in the project, the domestic users that volunteered to participate to this. Furthermore, I have professional connections with the Zero Waste Europe's activists who are working on the international "Zero Waste Families" project.
To conclude, I believe this argument relevant because it is analysing a current socio-economic phenomenon such as the attempt of communities to put into practice circular economy's activities and the changes they must promote in terms of town organization, waste management and policy. In the municipality of Capannori, this effort seems to be enforced by the presence of the Zero Waste strategy's practices already existing in this context (e.g. door-to-door separate collection, homecomposting, reuse and repair centers, no-packaging shops and street markets, environment education projects at school, public events promoted to create awareness on sustainability, the work of the Zero Waste Research Center on the territory). The same municipal policy appears to be influenced by this background as demonstrated by its support to local and international "zero waste" and environmentalist projects (e.g. read above) and the political will to give economic bonuses to the

users that reduce their waste (Pay As You Thrown Fee, bonuses to who does home-composting and participates to the "Zero Waste Families of Capannori" project). Another relevant point in my argument is about the role of waste in this context. In fact, thanks to the background created by the Zero Waste strategy, among civic society and even the local industrial sector it is spreading the idea that waste materials are resources. At the same time, it is also spreading the knowledge that materials that cannot be recycled, reused or composted are useless, unhealthy and must be reduced progressively. This seems to contribute to the promotion of the idea of a community organized on the zero waste practices, dedicated to implement a sustainable development process also recalled by the 2015 EU's Circular Economy Strategy package.

Circular Economy as an Idea for the Recycling of Waste Electrical en Electronic Equipment in Sweden. *Jolanda van Rooijen (Uppsala University)*

In this chapter I follow a report and its messenger as a central actor, and observe not only where the arguments of Circular Economy as in the report and its perceived benefits are simply accepted in several other publications, but also where criticism is ignored and governmental policy adopts the recommendations from the report.
A lot of reports are produced in the market, for example by governmental or non-governmental organizations, businesses, and marketing organizations. These organizations frequently classify their own work as "research projects" or "research studies", or "case studies" thus blurring it for the general public to deviate between solid academic work that can withstand peer-to-peer scrutiny and a study or marketing document that is spiced with some academic elements.
A lot of the latter reports of unknown quality lead their own life and depending on how these are launched and accompanied by marketing scripted press campaigns, such reports can reach a near unquestioned status, the content accepted for (near) truth and become the basis for subsequent policy decisions and/or investments in for example research funding.
In April 2015, an interim report (R1) with the name "The Circular Economy and Benefits for Society; Swedish Case Study Shows Jobs and Climate as Clear Winners" was published by The Club of Rome or TCoR (The Club of Rome, 2015). The co-author of R1 is Anders Wijkman. This interim report (R1), and the preceding and following process are followed through newspaper articles, some in the form of debate articles, of which one resulted in public response and subsequent discussion. Besides the newspaper articles, public meetings such as the introduction of R1 at a breakfast meeting or at Almedalen were attended remotely, over direct Internet connections or watched after publication. The content of R1 is communicated in an iterative way and is followed over a year, from 9 Feb. 2015 to 9 Feb 2016.
This report was produced by a highly respected international think tank, namely The Club of Rome (TCoR); launched by a former EU politician Anders Wijkman (AW) who is a highly respected environmental profile in Sweden. AW is a central actor, he is co-author of R1, co-president of TCoR, and chairman of the The Swedish Recycling Industries' Association(Återvinningsindustrierna)
AW is what in "Makt utan mandat, de policyprofessionella i svensk politik" (Garsten, Rothstein, & Svallfors, 2015) is, described as a policy-professional, more specifically a wonk (taken from American political journalism. Swedish: klurare. p.142), a person who works on "policy development, who reflects on how institutional systems can change and how social insurances and taxes need to be formed…. they change systems, they build institutions."

Electronic Waste Management Practices in Urban India: A Study from STS Perspective.
Anwesha Borthakur (Jawaharlal Nehru University)

Contemporary urban India is engrossed with massive challenges concerning environment and resource-friendly management of Electronic waste (E-waste). Unprecedented growth of India's consumer electronics market (including the IT sector) leads to an increasing penetration of electrical and electronic equipments into the country. Once obsolete, these equipments become E-waste, contributing significantly to the country's toxic waste stream. E-waste contains considerable portions of hazardous chemical toxicants and precious metals. While precious metal components (including gold, silver etc) present in E-waste provide significant incentives for recycling, hazardous chemicals (mainly in the form of persistent organic pollutants and heavy metals) pose

serious threats to the human health and environment if not meticulously managed. Thus, the already existent solid waste management problem in India has been aggravated manifolds with the advent of domestically generated and illegal imported E-waste. Managing responsibly this considerable volume of E-waste is a mammoth task. This paper is an attempt to evaluate the current E-waste management practices, with special emphasis on consumers' disposal behaviour and awareness, in two emerging Indian cities- Bangalore (popularly known as the 'Silicon Valley of India') and Pune. Primary investigations have been carried out in these two cities. Considering the theoretical frameworks of 1) Conspicuous Consumption, 2) Theory of Planned Behaviour and 3) Throw-Away Society, a conceptual layout of 'Public Understanding of E-waste' from Science and Technology Studies (STS) perspective has been prepared in order to analyze the E-waste crisis in urban India from its roots. We conclude that E-waste has the potential to grow unabated in the near future in urban India. Our challenges rest in ensuring responsible/sustainable E-waste disposal behaviour and increasing awareness among diverse consumer stakeholders. Further ensuring sufficient infrastructural provisions and administrative control in terms of stringent E-waste policies is essential in order to address this crisis in an adequate detail.

An Actor-network Perspective on Waste in the Steel Industry: Following Recycling Controversies.
Fionn Mackillop (Heriot Watt University)

This presentation is based on ethnographic research carried out on the steel industries of the UK and China over a 2 year period. We present an analysis of waste management in the steel industry by engaging with actor-network theory (ANT). Our perspective here centres on the fluidity of the definitions of 'waste' according to national socio-technical conditions and approaches, but also relative to different sections of the production process in selected steel plants. Drawing on Latour's notion of the 'actant' (Latour 1993), we approach waste through the prism of agency, on the one hand, and its status as an 'actor-network', a hybrid of material, social and discourse, on the other hand (Latour XXXX). The agency of waste, just like all materials, gives it the potential to 'push back' and interfere with humans' plans; waste can emerge in all parts of the production process and pose significant problems from a material point of view (oily waste that is hard to process) as well as a regulatory one (where to store waste and how to process it?). However, waste can also be transformed into value by being used in other industries or reincorporated into the production process. Our analysis will therefore invite us to consider the polysemy of this notion of 'waste' in the steel industry, as well as beyond. This flexibility of waste as an 'actor-network' opens up interesting possibilities in terms of recycling and/or waste minimisation, and, ultimately, in terms of the developing contribution of industry to sustainability.

State of Art in Circular Economy, Review and Further Research.
Sönnich Dahl Sönnichsen, Jesper Clement, Niels Kornum (Copenhagen Business School)

The paper offers a review of some of the trajectories waste handling in a Scandinavian context are inclined to move along. Research that has been conducted in this context shows a range of barriers and opportunities of varying impact, which have to be addressed.
Despite that, the EU-Commission encourages member states to skip the linear approach and identify greater opportunities in a circular economic perspective and move up the ladder of the waste hierarchy, the waste sector in Scandinavia can be characterized by an institutional, technical, cultural and material lock-in relative to more sustainable solutions. Research points to that assembling the collective, is distracted by split associations that divides the value chain in two different logics. In order to assemble the collective drawing on Callon´s four processes of translation, a model has been created, to analyze the dynamics among actors, human and non-human, through their cultural complementarities. The cultures actors represents are differentiated, in a non-hierarchical way, by either being enhancing, orthogonal or antagonistic, towards the circular economic perspective. By engaging this model, we point at introducing an oligoptic perspective in the waste handling literature and research conducted in the framework concludes that the EU Waste Directive is acting as a ´glue´ in the retention of actors obligations to the overall network in waste handling and thereby pushing the waste handling up on the ladder of the Wastehierachy. Further research should refine and enlarge the model with the environmental and economic consequences of a transition to a mere circular economic perspective, in a given actor-network.

Saturday, 10.45 – 12.15

Waste's Social Order. A Historical Perspective. *Anne Berg (University of Michigan)*

Waste is a category of the future. It focuses public fears about climate and the planetary resources, it highlights technological problems and inspires a wide array of "solutions." Most importantly, it underscores the fragility of our way of life and points – almost unmistakably – toward a gloomy, dystopian history that is yet to unfold. I would like to break with this line of thinking and instead investigate waste as a category of the past, a fossil, if you will, of the dominant social order in which it was produced, recycled and cast away. And like other fossils, waste holds one of the keys to understanding the dynamics that hold a social order together – dynamics that otherwise remain hidden from view.
I shall hope to use this contribution to illustrate this point, drawing my primary examples from an extreme case – the Third Reich. Precisely because the ideological underpinnings of National Socialism are readily apparent, the connections between social organization and society's wastes, their use and management come into sharp relief. The extent and comprehensiveness of the Nazi waste regime might be surprising if we work from the assumption that waste practices, waste management and waste politics are necessarily connected to questions of environmental sustainability. Historically, approaches to waste have cast questions of "sustainability" primarily in economic and social terms. In Nazi Germany, limited national resources and their thorough exploitation as well as national health and racial
purity chiefly occupied the regime. Wastes and their management promised answers to concerns powered "the solutions" the regime examined and implemented to guarantee a global racial order – in utter disregard of an already ailing planet. As I have argued elsewhere, the Nazi Racial State was one of the first, modern state to implement zero waste as an political goal and official policy. Even though the Third Reich serves as an extreme example in these respects as well, many of "the solutions" to the "problem of waste" that were first implemented on a massive scale under its auspices, have since been divorced from their racist underpinnings and translated into green agendas with which we now hope to combat the global waste crisis.
Drawing attention to the histories of waste and waste-management practices, I seek to illustrate some of the deeper and disturbing continuities that characterize modern, industrialized societies irrespective of their ideological hue.

Waste as Intention: the Representation of Waste in American TV Series. *Fanny Verrax (INSA)*

This paper identifies and provides an analysis of waste behaviours in contemporary American TV series. Following the principle that the very definition of waste lies not on its materiality but on an agent's intention, two categories of actors are considered: those who "throw away", and those who "pick it up". The paper shows that in each case, environmental concerns are massively absent from the range of characters' motivations represented on screen, which are rather based on economic, social or emotional factors.

The Forgotten Liam's, or: What Does It Actually Mean to Recycle E-Waste?
Stefan Laser (University of Kassel), Alison Stowell (Lancaster University Management School)

In 2016 Apple introduced Liam, the recycling robot. Liam specialised in breaking down, separating parts and recovering materials from iPhones. Liam presents himself – yes, masculine he is – as a lovable robot that cares for our stuff. And he gets things done, 1.2 million iPhones a year, Apple claims. Accordingly, Apple advocates that Liam (as a line of robots) has the ability to reintroduce resources into the global economy thereby reducing the impact to the environment. One just has to send them one's phone; they will take care of it. However, we ask, how does this robot and Apple's strategy relate to existing e-waste recycling operations? Drawing upon ethnographic data gathered from recycling, IT asset recovery, refurbishment and repair organisations in Germany, the UK and India, we explore what it means – industrially, organisationally, and manually – to work with e-waste. Utilising Jackson's (2014) notion of "rethinking repair" we emphasize the forgotten historical infrastructures of waste that characterize this endeavour. We argue, to breakdown, separate and recover waste efficiently is an on-going challenge as finding and defining this very efficiency is one of the major problems to solve, again and again.

The adoption of Liam is indeed an interesting vision, but if we confront the emergence of this robot with our research findings an ambiguous picture unfolds. On the one hand, Liam successfully and elegantly reproduces approaches of the recycling industry: e-waste is framed as something negative and toxic that professionals have to deal with (breakdown); a very systematic approach is presented to categorize and evaluate electronics designated for recycling (separation); and, as a result, materials are extracted based upon their proclaimed economic value (recovery). On the other hand, this robot emphasizes a rather narrow recycling strategy that puts achievements of the existing industries at stake. Liam, we argue, is merely Apple's way of integrating (parts of) the recycling process into its in-house value chain. There are even recycling experts who claim that "Apple's recycling robot wants your old iPhone", while replying: "Don't give it to him."1 Why is that? Liam results in deskilling handicraft workers by transferring their knowledge into software (breakdown); waste-work is reinforced as a particular type of masculine, low-skilled labour (separation); and Apples technocratic scheme to deal with broken/used phones, our research suggests, is just one of the many strategies at present to deal with waste, for instance leaving repair and refurbishment out and thus stabilizing a hegemony of shredding (recovery). In short, Liam presents us with the key issues of the circular economy-approach.

Wealth in WEEE: Mapping Value in Waste Electrical and Electronic Products.
Jessika Luth Richter (Lund University)

An extended producer responsibility (EPR) programme entails the establishment of collection schemes designated for targeted products like waste electrical and electronic equipment (WEEE). When policies based on EPR were first developed, it was assumed WEEE did not have value. It is now clear that some WEEE does have value; however, this value can be perceived differently for various stakeholders and in different contexts. WEEE with value also has implications for existing EPR policies. As WEEE represents an increasingly important waste stream, not just in size but as an urban mine for critical materials, these different perspectives and contexts of value is also of fundamental concern for circular economy initiatives.
This paper would map out value for WEEE, using a mapping tool developed by Bocken et al. (2013), which helps identify the different stakeholders who can perceive value. This paper will build upon the tool to also identify key contextual factors influencing the value for these stakeholders. The mapping of value will be descriptive, rather than quantitative; in order to discuss key factors and assumptions behind quantified values often used in modelling. Three cases are considered for illustration and discussion of the implications of how value is perceived and influenced. First, the case of mobile phones is considered, where value is already recognised by several key stakeholders already challenges have been experienced in relation to collection is leakage from formal collection paths into alternative collection paths. The second case examines fluorescent lighting, which is a classic WEEE category considered without value (but arguably has value to some stakeholders under certain conditions, which will be discussed). The third case will consider a rapidly developing WEEE steam: photovoltaic panels. The value of this waste stream is not yet clear and allows for discussion of how the mapping tool can anticipate value in the future, but also discussion of contextual factors that will likely influence future scenarios.

Creation of Waste and Value in a Market-driven System. The Case of WEEE.
Jennie Olofsson (Mittuniversitetet)

This article investigates the situated practices of sorting, disassembling and recycling of waste electrical and electronic equipment (WEEE) that take place at Swedish electronic waste recycling plants. In doing so, it shows that the terms waste and value are means through which the materiality of WEEE are both stabilized and destabilized. More specifically, the situated practices of sorting, disassembling and recycling are fraught with meaning-making practices where WEEE – and more specifically the economic value that they generate – are subjected to continuous reappraisals and struggles, something that in turn determines the organization of sorting, disassembling and recycling of obsolete electrical and electronic equipment. The interlinked practices of sorting and disassembling also serve to transform the status of WEEE, from waste to tradable entities. As WEEE, and more specifically the economic value that they generate, are subjected to continuous reappraisals and struggles, the organization of sorting, disassembling and recycling changes accordingly.