The circular economy: transitioning to sustainability?

Date: Tuesday 11 July 2017
Venue: Coventry University, TechnoCentre

This one day conference is hosted by CBiS (Centre for Business in Society), Coventry University, in collaboration with CReiMS (Centre for Research in Marketing and Society), Sheffield University Management School and the Academy of Marketing Sustainability SIG.
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The Circular Economy: Transitioning to Sustainability?

Welcome!

The Centre for Business in Society explores the impact of business and policy-making on society. Our interests in sustainable supply chains, ethical consumption and economic development have combined to stage this event, in conjunction with CReiMS (the Centre for Research in Marketing and Society) at Sheffield University Management School and the Academy of Marketing’s Sustainability Special Interest Group.

The conference centres on the emerging transition agenda for research within the broader social sciences around the interconnections between the circular economy and sustainability. We want to highlight the diverse and multifaceted range of issues stemming from the circular economy and sustainability, focusing on the ultimate goal of living well within environmental limits. Contributions have come from a wide range of institutions, reflecting the diverse nature of interest in this field and its growing importance.

We are very grateful to our keynote speakers, Marsha Smith of Super Kitchen and Nottingham Trent University, Professor Kirsi Niinimaki of Aalto University in Helsinki and Dr David Peck from TU Delft and the EU KIC EIT for Raw Materials.

Many colleagues have helped in the creation, organisation and management of this event, including Sheffield’s Professor Victoria Wells and Dr Caroline Oates, Manchester’s Dr Claudia Henninger and from CBiS Professor Sally Dibb, Dr David Bek, Professor Ming Lim, Dr Nick Henry, Dr Paul Sissons, Dr Solon Magrizos and Jordon Lazell; supported by CBiS PGRs Viktoria Lamprinaki, Rebecca Beech, Natalie Dukes, Lisa Ruetgers, Cristiana Pace, Malte Busch and Nora Lanari and CBiS’s support team of Nicola Boyle, Debbie McArdle and Mandy Bisla. The lion’s share of planning has been undertaken by Professor Marylyn Carrigan. Our thanks go to all: without their creativity, planning and management this event would not have been possible.

Professor Lyndon Simkin
Executive Director of CBiS
Welcome to ‘The circular economy: transitioning to sustainability?’

The conference team wish to extend a warm welcome to all delegates attending!

Today’s conference is hosted by CBiS (Centre for Business in Society), Coventry University, in collaboration with CReiMS (Centre for Research in Marketing and Society), Sheffield University Management School and the Academy of Marketing Sustainability SIG. We would like to thank you for your submissions, and congratulate you on being accepted.

The conference is aimed at the emerging transition agenda for research within the broader social sciences around the interconnections between the circular economy and sustainability. While the circular economy offers a seductive proposition as “an improved and applied conceptualisation of sustainable business” there are tensions emerging, and as yet little formal academic debate within the business literature (Murray et al., 2017: 370). This one day conference will take that conversation forward and explore some of those tensions in our roundtable discussions.

A circular economy is different to a traditional linear economy of production, consumption and disposal. A circular economy seeks to maintain the value of products, materials and resources for as long as possible, extracts the maximum value from them while in use, and then recovers and regenerates products and materials at the end of each service life (WRAP, 2016). This presents opportunities to reduce waste and the environmental impacts of the cycle of production and consumption; it can stimulate greater resource productivity, address resource depletion, security and scarcity and can potentially improve competitiveness. We know that technological and efficiency fixes alone have delivered limited gains, and many wicked sustainability problems remain deeply embedded in societal structures – in both the Global North and Global South. Researchers need to better understand this challenge if we are to help steer society to manage solutions. Therefore this conference will take up the call for new ‘Transitions’ - fundamental shifts in the systems that fulfil societal needs, through profound changes in dominant structures, practices, technologies, policies, lifestyles, and thinking (Bruyninckx, 2016). The call for abstracts has solicited a rich set of papers that advance our empirical, theoretical and conceptual understanding of the circular economy and sustainability, transitions and the circular economy. We hope therefore that this
conference will widen the interdisciplinary perspectives regarding sustainability, transitions and the circular economy.

The conference brings together academic, practitioner and public policy researchers from these key areas of cross-disciplinary research to present and discuss current research relevant to these issues.

Please note the conference proceedings will only be available online, and will not be given out as a hardcopy at the conference. We would kindly like to ask you to bring an electronic copy with you to the event.
About the organising institutions

**Coventry University**

CU is a forward-looking, modern university with a proud tradition as a provider of high quality education and a focus on applied research. Its students benefit from state-of-the-art equipment and facilities in all academic disciplines including health, design and engineering laboratories, performing arts studios and computing centres. It has been chosen to host three national Centres of Excellence in Teaching and Learning which has enabled us to invest substantial sums of money in health, design and mathematics.

The city-centre campus is continually developing and evolving, and there are plans for further investment in it over the next few years. CU has a major presence in Coventry, which contributes to the city's friendly and vibrant atmosphere and also enables it to foster successful business partnerships. Through its links with leading edge businesses and organisations in the public and voluntary sectors, its students are able to access project and placement opportunities that enhance their employability on graduation.

**Centre for Business in Society (CBiS)**

The Centre for Business in Society (CBiS) is home to specialist researchers within the Faculty of Business and Law. CBiS is responsible for nurturing and developing the research culture and expansion of dedicated research activity. Through understanding the impact of organisations’ activities, behaviours and policies, our research seeks to promote responsibility and to change behaviours so as to achieve better outcomes for economies and societies.

Its research groups are examining aspects of sustainability and ethical consumption in the circular economy, as well as investigating new models and policies in economic development to reflect changing societal values and realigned public spending. Emerging business impacts on society have led to new research teams exploring the economic and social impact of financialization at the national, organisational and individual level; behavioural change interventions to enhance societal well-being; and the impact of the digital economy in terms of data innovation and strategy, data protection and privacy.
CBiS primarily explores the impact of business on society and in recent years the digital economy and the financial crash present two of the most powerful areas of such impact.

**Sheffield University Management School**

Sheffield University Management School is a leading business school with a world-class reputation for high quality teaching, ground-breaking research and cutting-edge thinking. Through the distinctiveness of its graduates, excellence of its staff, intellectually rigorous research and network of international partners, it seeks to inform the practice of management and to make a difference to the community – locally and internationally.

Focused on sustainability and social responsibility, Sheffield University Management School has created a research environment that builds specialist capacity and nurtures the next generation of management academics. The role of The Sheffield Academic is clearly articulated: 'The pursuit of research excellence in relation to questions of high significance and public value in different fields of study, through the provision of intellectual leadership, support of the professional practice of the research community and the display at all times of the highest standards of research ethics and integrity.' The University of Sheffield is a leader in fostering Research Ethics and Integrity (REI) that places good academic practice – rigour, respect and responsibility – at its core.

**Academy of Marketing Sustainability SIG**

The Academy of Marketing Sustainability Special Interest Group was developed and launched in 2016. It provides a forum for researchers, teachers and practitioners who want to develop and share knowledge of sustainability and marketing. The SIG members will generate marketing research around sustainability; disseminate ideas and materials for teaching sustainability in marketing; and collaborate with practitioners to engage business with academic research. The overall aim of the SIG is to have a significant and positive impact on marketing and society.
Programme

08.30-09.30  Coffee and registration; PGR posters
09.30-09.50  Welcome
              Prof. Marylyn Carrigan and Prof. Sally Dibb, Conference Chairs
              Prof. Heather McLaughlin, Academic Dean, Faculty of Business & Law
09.50-11.05  Session One: Keynote Speakers
              Professor Kirsi Niinimaki, *Aalto University, School of Arts, Design and Architecture, Design Department.*
              Dr David Pek, *TU Delft*
11.05-11.35  Coffee break and posters
11.35-12.35  Session Two: Roundtable Discussions – Parallel sessions
12.35-14.00  Lunch; Coffee and posters
14.00-14.45  Session Three: Keynote Speaker
              Marsha Smith, *Super Kitchen and Nottingham Trent University*
14.45-15.45  Session Four: Roundtable Discussions – Parallel sessions
15.45-16.15  Tea break & Poster awards
16.15-17.00  Plenary Discussion
17.00        Close
Keynote Speakers

Professor Kirsi Niinimäki

Kirsi Niinimäki is Associate Professor in Fashion research in Aalto University, School of Arts, Design and Architecture, Design Department. Her research focuses on holistic understanding of sustainable fashion and textile fields and therefore she investigates connections between design, manufacturing, business models and consumption. Lately she has been interested to study fashion and textiles in circular economy context. Niinimäki is widely published in top scientific journals and conferences, e.g. in Journal of Cleaner Production, Design Journal, Journal of Sustainable Development. Moreover she has been a visiting researcher in TUDelft Netherlands, TUEindhoven Netherlands, Oklahoma State University USA and in EWHA University in South-Korea.

In Aalto University Niinimäki runs the Fashion/Textile Futures research group. The group approaches research in the field of fashion, clothing and textiles in multi-faceted ways. A strong research focus is on sustainable fashion and textiles, but group members’ research activities also encompass material-based research, aesthetics and creativity studies, practice-based research, and strategic fashion and textile design. The research group is involved in several significant research projects, which integrate closed loop, bioeconomy and circular economy approaches in fashion and textile systems. Niinimäki is also a Study Programme head for Fashion BA and Fashion, Clothing and Textile design, FaCT MA.

http://ftfutures.aalto.fi/
https://research.aalto.fi/portal/kirsi.niinimaki.html
Dr. David Peck researches and teaches, in TU Delft, in the field of circular cities and critical materials. David is a senior research fellow in the faculty of Architecture and the Built Environment, with a focus on circular cities. He is also a Visiting Professor with Coventry University. Based on work from numerous EU funded research projects, current linear economy approaches mean that the security of resources will become increasingly constrained. David’s research proposes a circular approach to new business models, innovation and development in cities.

David is a TU Delft lead for the pioneer university status with the Ellen MacArthur Foundation for a circular economy. David is adjunct Professor at MIP Politecnico di Milano, Graduate School of Business and a Visiting Professor with Coventry University – both positions in the field of circular economy. David is currently the supervisor to two PhD's, one in Coventry University the other in Università IUAV di Venezia.

He is the TU Delft lead in a Horizons 2020 project, ProSUM - Prospecting Secondary raw materials (critical materials) in the Urban Mine and mining waste and recent H2020 project ERN – European Remanufacturing Network. David leads projects in the EU KIC EIT Raw Materials (sustainable exploration, extraction, processing, recycling and substitution). TU Delft is a leading Netherlands partner in this 2 bn Euro, 7 year+, project which has a focus on critical materials and circular transition.

David's talk will outline a challenge for society, business and government –resource constraint. He will explain how international business does not see the risks or the connection to a circular economy. In seeking answers his research took him back in time to World War Two, when significant resource constraint was dealt with. From this he then presents a framework to begin to address the circular challenges and opportunities ahead.
Marsha Smith

Marsha’s research concerns the new-commensality of ‘social eating’, as an emergent consumption and production practice and how that model has been taken up and proliferated by customers and producers of social eating spaces. Her in-situ, context-rich, sociological mapping methods intersect with social marketing theory to federate insights that invite social marketing to continue to move beyond individually-focused interventions towards campaigns that encompass and speak-to group practices. Marsha’s research interests are in salutogenic assemblages, social practice theory, participant action research, social marketing, the valorisation of social activism, and Public Health.

She has taken an interesting path between the academic and social sectors and become known for her can-do approach and success in directing the Super Kitchen social eating network. She was awarded a NESTA New Radical Award and has been an RSA Catalyst Award beneficiary. Marsha is currently a Visiting Fellow at The Nottingham Trent University having moved into academia to undertake research after 7 years of working in the third sector. She is a BA (Hons) Sociology graduate and completed a Masters by Research which explored body boundaries, technology, and identity practices. Marsha has been successful in securing funding to lead an exploratory research project into mapping Nottingham’s social eating network and this will form the basis for her PhD research. She has been a keynote speaker at the European Social Marketing Conference in Finland in 2016 and is presenting her current research at the World Social Marketing Conference in Washington DC in May, 2017.
# Roundtable Programme

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Abstracts (by session)

Session 2.1

An empirical investigation of barriers to the adoption of battery electric vehicles in the UK.

Dr David Jarvis, Professor Nigel Berkeley and Dr Andrew Jones.

Centre for Business in Society (CBiS), Coventry University

Threats arising from climate change and the depletion of natural resources have brought governments together through international treaties to set targets for carbon reduction and the use of alternative sources of energy. As a result of these international agreements, the transport sector, given its significant contribution to carbon emissions globally, as well as utilisation of increasingly scarce resources, has in the last decade become a major focus of attention for governments across the world. This is evidenced through significant investment to support a transition to greener, more sustainable automobilities, witnessed in the implementation of a range of policy instruments intended to stimulate the design, manufacture and take-up of hybrids, fuel cell and especially battery electric vehicles (BEVs). Manufacturers have responded by exploiting new technologies to produce vehicles that facilitate travel in smarter and more sustainable ways. However, to date the take-up of these has been slower than desired, attaining only modest market share, and a long way short of the level required to push such vehicles into the ‘mainstream’. This issue has stimulated considerable interest in academia and beyond in recent years given the consensus that alternatively fuelled non-internal combustion engine (ICE) vehicles are a critical component of a future transport mix which can meet the carbon reduction targets that have been agreed internationally. Given that electric vehicles remain the only viable mass market alternative to the internal combustion engine, and have been available to consumers in the mass market for more than five years, it is both timely and important to interrogate the factors underlying their low market penetration.

Existing literature suggests there are different types of barrier to BEV adoption as well as drawing attention to possible interrelationships between them, the way that one barrier can directly or indirectly influence another. However, it is argued here that the currency of this literature in helping to better understand barriers, and as such inform effective policy solutions to BEV take-up is limited. In Europe for example, the majority of empirical studies
report on the results of small metropolitan based demonstrator trials which tend to attract drivers already disposed towards green technologies. Much other research has focused on the utility of alternatively fuelled vehicles in a North American context where driving conditions and the ‘everyday’ realities faced by consumers in terms of required driving range are very different from those in Europe. Yet research that examines the reality and importance of barriers to BEV adoption from the perspective of mainstream car market consumers in Europe is lacking. This is problematic given that moving beyond the early adopter market and encouraging drivers to switch to BEVs ‘en masse’ is vital if the business models of manufacturers in producing a holistic and sustainable range of vehicle types are to be normalised and current emissions targets realised.

This paper addresses this gap, analysing data collected from a panel of over 26,000 drivers of internal combustion engine vehicles in the UK in order to gather insights into the importance of barriers to BEV adoption from ‘mainstream’ motorists. Such data are required in order to inform and underpin more effective policy solutions to address ‘the BEV market share problem’. As the second largest vehicle market in Europe, and with a national fleet of 31.6 million licenced cars as of August 2016, the UK provides an interesting context in which to explore these issues. This is particularly the case given the apparent failure of multiple policy instruments and investment by the UK government over a seven-year period in attempting to stimulate adoption of BEVs by UK consumers.
Can Markets Help Transitioning to Sustainability? Electric Vehicles, Producers and Consumers

Dr Carlos Ferreira, Centre for Business in Society, Coventry University
Email: carlos.ferreira@coventry.ac.uk

Prof Stewart MacNeill, Centre for Business in Society, Coventry University
Email: stewart.macneill@coventry.ac.uk

This paper presents a conceptual analysis of the potential for developing markets and new business models to promote a transition to a transportation system which includes more electrical vehicles (EVs). Consistent with a circular economy (CE) approach, the paper suggests: 1) the potential for promoting new business models among carmakers (contributing to local and regional economic development in the process) via servitization; and 2) the potential for changing the marketing of electric vehicles to consumers, through the constituting of status-based markets for individualised consumers.

The role of EVs in a transition to sustainability

The transport sector is estimated to be responsible for around 14% of carbon dioxide emissions worldwide. Furthermore, road transportation is responsible for localised emissions of pollutants such as NOx and particulates, which are known to result in health impacts. Despite progress in reducing noxious tailpipe emissions, the industry has been beset by accusations of malpractice and ‘cheating’ in testing. The so-called ‘dieselgate’ scandal (Cremer et al., 2015; Holloway, 2017, 2016; The Register, 2017), which has affected VW (the world’s largest manufacturer by volume in 2016) has cast a shadow upon the potential of internal combustion engines as the main form of road locomotion in the future (Bailey, 2016; McGrath, 2016).

As a result, there is an on-going interest in EVs and their potential for effecting a transition in the transportation systems. Governments worldwide have offered various incentives for consumers wishing to acquire EVs. However, and despite these incentives, the uptake of EVs has been slow, confining these vehicles to a small niche of the total automotive market. On current standing, it seems unlikely that EVs will appeal to mass consumerism.
The carmakers’ side: new business models

Work on the growing importance of ‘value added services’ provides an interesting model for how the EVs market might develop. One key may be the development of ‘servitization’ business models (Baines et al., 2010, 2009; Baines and Lightfoot, 2013), in which producers develop on-going and individualised relations with consumers, as typically seen in the markets for luxury and status products. A servitization business model points to an interlinking of manufacture and services, and has been observed in a number of industries. To develop such markets would require that manufacturers not only to add value to EVs, but also that they constitute and integrate downstream networks with other companies, which can provide additional services and value for consumers. Among the companies which can constitute these downstream networks are Knowledge Intensive Business Services (KIBS), which provide services and can be drivers of innovation (Strambach, 2008). In the automotive industry, the practice can be observed in initiatives such as the VW’s Austostadt or Land Rover’s ‘experience days’, both of which are designed to add value to the automobile by providing interpersonal services around a standardised product.

An important area of support for downstream networks may be through regional economic development policies. Support for servitization in the market for EVs could provide an example where an innovation policy would be both beneficial and affordable as regions seek to position themselves within global networks. Examples of this include servitization around small car manufacturers in the West Midlands (MacNeill and Jeannerat, 2016), which provide buyers with extra services – including access to races, personalisation of vehicles, and even input into the development of the vehicles themselves.

The consumers’ side: a status market

Policy measures to improve the uptake of EVs have included supply-side measures (such as support for R&D and development of charging infrastructure) and demand-side measures (including tax credits/rebates and grants). Despite these, uptake of EVs remains low. In particular, the low status of EV appears to remain an important limitation. Apart from a small segment of the driving public, motivated by environmental aspects, EVs are generally not considered as direct alternatives to internal combustion-powered vehicles.
An alternative approach, connected to the development of servitization business models, could be the development of status markets (Aspers, 2009). Rather than focusing on QCD (Quality, Cost, Delivery) and aggregating consumers to estimate demand, as seen in a production (standard) market (White, 2002, 1981), status markets rely on individualised, knowledgeable consumers (Crevoisier, 2016). Appealing to differing aspects of consumer lifestyle, status and valuation may hold the key to future sales of EVs within a status or luxury market. The success of Tesla points to the potential of a status-market approach for improving the uptake of EVs. By focusing on high-end product and connecting closely with its consumers, Tesla uses them as both the locus of their R&D and product evangelists. An unknown company with no advertising budget, Tesla is arguably the only car manufacturer launched in the 21st century to become a household name – despite (or perhaps because) it sells only EVs.

**Integrating producers and consumers**

Analyses of markets often clearly separates consumers (demand) and producers (supply). However, such a separation is not helpful when trying to accelerate the transition to sustainability and a circular economy. Bringing together the two sides of the equation and facilitating knowledge exchanges and status creation between individualised consumers and carmakers may hold the key to helping develop the fledgling EVs market.

**References**


Baines, T., Lightfoot, H., 2013. Made to serve: how manufacturers can compete through servitization and product service systems. Wiley, Chichester, West Sussex, United Kingdom.


McGrath, M., 2016. Four major cities move to ban diesel vehicles by 2025. BBC News.


Electric Vehicles: Solving the rural mobility challenge?

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Government funded low carbon vehicle trials have demonstrated a clear distinction between the experience of owning and driving a petrol or diesel vehicle compared to an electric vehicle (EV). However, little work has been done on the differing experiences of urban and rural motorists and the potential impact of more extensive use of EV technology outside centres of population where services and employment opportunities are more dispersed and often not as comprehensive. Analysis from the UK government suggests that rural motorists face greater challenges in terms of higher driving distances and greater car dependency (Rural Services Network, 2013). Moreover, organisations and motorists in rural areas also face higher fuel costs than those in urban locations, a situation which can effect business competitiveness. Therefore, understanding potential mobility solutions for rural businesses and motorists is of particular importance. The aim of this paper is to examine the challenge for rural motoring presented by the adoption of EV technology and demonstrate how it differs in nature to that facing urban travellers using evidence arising from the Warwickshire Rural Electric Vehicle Trial (WREV).

Significant investment in policy instruments to stimulate the design, manufacture and take-up of hybrids, fuel cells and battery elective vehicles has been put in place to support a transition to greener, more sustainable automobilities. Manufacturers have responded by exploiting new technologies to produce vehicles that facilitate travel in smarter and more sustainable ways. However, the take-up of these vehicles has been slow, attaining modest market share far short of the level required to push them into the mainstream. Given alternatively fuelled non-internal combustion engine (ICE) vehicles are a critical component of the future transport mix needed to meet internationally agreed carbon reduction targets (Rezvani et al., 2015, Steinhilber et al., 2013, Gunther et al., 2015) this issue has stimulated considerable debate in academic and policy circles. Arguably, electric vehicles remain the only viable mainstream alternative to the internal combustion engine, and have been
available to consumers in the mass market for more than five years. However, without the appropriate infrastructure or financial support, rural businesses face challenges in adopting this technology.

In recent years there have been a number of EV trials, including CABLED in the West Midlands and Switch-EV in the North East. Academic studies including Graham-Rowe et al (2013) and Bunce et al (2014) have evaluated the outcomes of small demonstrator trials, but this analysis is also based on the findings of urban rather than rural activity.

A recent rural electric vehicle trial undertaken in the West Midlands sought to rectify this knowledge gap by testing a number of EVs in rurally defined locales in the county of Warwickshire over a two year period. In total seventeen rural SMEs took some part in this trial, with the participating businesses drawn from multiple different industrial sectors. These SMEs included traditional rural enterprises operating in agriculture and food retailing, plus those operating in newer economic sectors such as information technology and renewable energy. In addition to these sectors, companies from healthcare, events, construction, and vehicle repair were also involved.

During the course of the trial, data was collected from vehicles through ongoing monitoring of usage. However, in order to understand the behaviour of users and the advantages or disadvantages of using this technology, trial participants were asked to complete an in-depth interview assessing their experiences with the vehicle. This was in addition to the users completing a survey on joining the trial which assessed their motivations and early usage habits. This process enabled changes in behaviour and impacts to be evaluated.

The results of this trial gave a range of important insights into the challenges faced by rural motorists utilising EVs in both a private transport capacity as well as from a commercial perspective. Across the seventeen businesses, a total of 211,934 miles were driven in just over a two-year period, indicating that users were generally confident in the technology and suggesting that the vehicles were sufficient in supporting business needs. In using the vehicle, the majority of participants found that the EV was well suited to their short journey requirements, with 93% of survey respondents expressing this opinion. The type of travel undertaken by users was generally localised, with vehicles used for deliveries, visiting potential customers, exhibitions, and general ‘shuttle’ work. For example, one organisation
stated that they used their vehicle to transport staff. This short distance travel was underpinned by the average mileage per-trip being calculated at six miles for the Nissan vehicles. Even through driving distances were generally short there were still range anxieties expressed by several users. This was caused by two principle factors, one of which was a lack of confidence in the vehicle to deliver the required range, and the second being the shortage of public charging infrastructure in rural locations. In addition to this shortage of charge points in rural locations, evidence was also provided which suggested charging stations in urban areas were not being maintained or used correctly. This provided a deterrent to users attempting longer distance travel as they did not trust the charging infrastructure to be available when required. Charging stations provide an important psychological crutch to motorists, helping to lessen range anxieties and providing reassurance when undertaking longer journeys. For some of the businesses these concerns have ‘pushed’ them away from electric technology in the short-term. Additionally, without the subsidised lease, several businesses would not have been able to afford the high purchase price of the vehicle.

References


Rural Services Network. ‘Going the extra mile - resolving the rural transport challenge’ RSN. 2013. Available at: http://www.rsnonline.org.uk/analysis/going-the-extra-mile-resolving-the-rural-transport-challenge
Session 2.2

Matching community forms with an energy hierarchy: supporting the circular economy through energy sustainability.

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Overview

Community energy in the UK is a key part of the Government’s plan for decarbonising the energy sector, an integral part of a circular economy. This study explores the importance of community energy groups in this process. The findings reveal diverse views about what constitutes a community, and it’s different forms. The range of community energy projects is also diverse, forming a hierarchy of social and environmental change, from those that seek to improve levels of comfort to those that generate power and raise income. This diversity has implications for engaging communities in energy projects. After identifying the dimensions that characterise these communities, we develop a framework that maps different community forms with different levels in the energy hierarchy. This approach to framing communities can be used as the basis to better target energy messages.

Background

Community energy is seen by the UK Government as a way to help meet targets to reduce carbon emissions, with the potential by 2020 to produce between 0.5GW (2.2%) and 3GW (14%) of installed energy (Department of Energy and Climate Change, 2014). Reducing carbon emissions and securing supply without overloading the energy infrastructure, could also provide opportunity for new players (Eadson et al., 2014). As well as contributing to a circular economy, community energy schemes can deliver varied benefits, including meeting local needs, maintaining energy security, saving money and wider social and economic benefits. These could include stronger communities, the potential to improve skills education and generate work experience and satisfy needs for social esteem (Cherrier et al., 2012), (Department of Energy and Climate Change, 2014).
However, few citizens have been actively involved in energy projects, hence such projects are not considered normal practice (Rettie et al., 2012). DECC sees the key barriers to community energy as involving problems with access to finance; reliable income streams, such as the Feed in Tariff; the difficulties of becoming a licenced energy company and the wider problems of trying to navigate the regulatory systems for planning and network access (Department of Energy and Climate Change, 2014). Although recognising these as barriers, since the strategy was written in 2014, little has been done to address them, with the regulatory system for both financing and the sale of energy lagging behind practice.

If community energy projects are to meaningfully contribute to a circular economy, they need to be supported by policy and research. However, little research exists that shows how people use energy in the home or how they respond to the installation of new technologies (ICF International et al., 2015). The ICF International et al (2015) work showed that measures such as Green Deal and ECO did not necessarily lead to the expected carbon and energy reductions, due to a rebound effect as people raised levels of comfort rather than reducing consumption.

These issues highlight the need for research to understand how policy and funding can be prioritised to decarbonise the energy sector at a grassroots level that supports a circular economy. A greater focus on the community as the unit of analysis rather than the individual could be a useful approach. Energy consumption practices are not solely at the discretion of the individual, but influenced by their immediate household and extended networks, through which daily patterns of consumption are negotiated (McDonald et al., 2012).

There is also a need to support community energy across all levels of the energy hierarchy; supporting it as a social learning process, in which multiple diverse actors work together to learn collectively towards shared goals, responsibilities and actions that can be a stepping stone to mobilize consumers to behaviours that support the circular economy.

**Method**

This research developed an empirical overview of community energy in the UK. The study comprised a literature review of academic and policy documents, semi-structured interviews and a workshop. Participants included representatives from local authorities, NGOs, landlords, suppliers and academics. A purposeful sampling approach was used to identify
Findings and Discussion

The preliminary findings uncover diverse views about what constitutes a community, and their different forms. Several dimensions characterise these forms, including:

- the primary purpose or trigger for forming the community.
- the motivations for engaging with community energy, which may or may not overlap with the community’s primary purpose.
- the style of leadership.
- the types of properties and their energy efficiency rating.
- whether the community is geographically located.

The primary purpose of the communities we examined varied from a geographical community to a group of like-minded individuals, such as the WI, Faith Based Organisations, experts and non-experts in the field. This diversity is coupled with a variety of motivations, including a desire to improve the local area, save money, improve the environment and the passion of a champion. Not surprisingly, contributing to a circular economy was not a motivation raised. These groups first need to tackle fundamental issues, such as identifying funding sources, reliable suppliers or legal expertise. However, we found some evidence that once these hurdles had been overcome, particularly in the presence of an inspirational champion and other local support, communities began to look at energy projects that come closer to supporting a circular economy. For example in Leeds, plans exist to convert excess locally produced solar energy into hydrogen for heating. Such grassroots projects are of interest in their potential to inform more sustainable ways of living (White and Stirling, 2013). White and Stirling (2013) suggest that these bottom-up grassroots projects could be useful in highlighting the unsustainability of current systems, solving local problems in new ways and experimenting in methods that could inform or be integrated into the mainstream.

By exploring different forms of community based on the above dimensions, it is possible to map how these community forms connect with different levels in the energy hierarchy. We
show how this approach to framing communities can provide a useful basis for targeting different energy messages and consider the implications for practice and policy.

References


Sustainability or Circular Economy: Which one will you choose?

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The circular economy and sustainability notion of sustainable growth have attracted the attention of academia, policy makers and businesses. In spite of their popularity, there is no uniform understanding about their conceptual underpinnings, or about their distinctiveness and competitive nature. Similarly the similarities and differences between these two contesting concepts are missing. This gap is creating lot of confusion, and is potentially acting as a deterrent for UK businesses to sign up for adopting circular economy processes. This developmental paper seeks to tease out the conceptual similarities and differences between sustainability and the circular economy from an in-depth review of sustainability and the circular economy literature.

Keywords: circular economy; sustainability, closed loop system, circular business model, green growth.
Learning in the transition towards a circular bio-economy: A discourse approach to assess the social dimension of the bio-economy in Italy.

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Keywords: Bio-economy; Circular economy; Sustainability Transitions; Discourse Theory; Social Learning.

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World population growth, effects of climate change and ecosystem resilience reduction are demanding for a more judicious and efficient use of natural resources. In this context, promoting a bio-economy, where materials and manufacturing processes are able to produce food, fibres and other bio-based products with fewer inputs, less waste and greenhouse gas emissions with benefits for human health and environment, is an important step in this direction. As recently emphasized by the Italian Council of Ministers through its Bio-economy strategy (2016), bio-economy represents “a unique opportunity to reconnect economy, society and the environment”. The assumptions underlying this strategy are also included in the recent vision of the concept of circular economy, according to which, all processes, from extraction to production and consumption, are organized so that the wastes of someone circulate as new inputs for someone else while minimizing the overall waste. A transition towards a circular bio-economy that consider the traditional views of bio-based economy and circular economy as mutually beneficial for a more sustainable resource exploitation at a lower cost, encouraging the rise of new patterns of production and consumption able to add value to products and boosting jobs (IEEP, 2016). However, achieving this will require a joint effort by all concerned parties; it will not be enough just to use biomass for industrial applications or to employ regenerative instead of fossil based materials. It is not only to combine environmentally friendly knowledge into existing
expertise. To meet this challenge, a transition must take place also from a social point of view, stimulating awareness, dialogue, and thus social learning able to bring people to a more conscious behaviour for supporting innovation in social structures. The notion of ‘social learning’, although broadly applied in the literature on natural resources management (Cundill and Rodela, 2012 and Rodela, 2011), still appears hard to delineate since the variety of the incorporate meanings (Blackmore, 2010, Diduck, 2010, Muro and Jeffrey, 2008, and Vinke-de Kruijf and Wostl, 2016). Following Reed et al. (2010), social learning arises when social relations and practices affects understandings and beliefs of concerned actors that are part of a wider social system.

Social dialogues and learning about bio-economy opportunities and challenges play a key role in the transition process towards a circular bio-economy and in adapting more efficiently and effectively to the European Bio-economy strategy. In this framework, the research question of the paper aims at investigating and identifying those actors effectively engaged in the learning mechanisms concerning the transition towards a circular bio-economy, as well as the channels through which such learning processes take place.

The present study aims to tackle the above-mentioned tasks looking at the Italian bio-economy, a context that has recently experienced a large institutional recognition (i.e. Bio-economy strategy 2016), by integrating the multilevel perspective (MLP) approach with the discourse theory in order to explore the social learning dimension of a sustainable transition.

Following Vinke-de Kruijf and Wostl (2016), we model social learning as process lying on three interdependent levels: (1) the micro-level where individuals interact; (2) the meso-level involving organizations; (3) the macro-level, which is characterized by national and supranational governance and societal context (i.e. external actors).

In this context, an adequate learning outcome might give rise to windows of opportunity for technological niches to emerge, contributing thus to the alignment process between micro and macro sources of pressure that might ultimately determine a sustainability transition.

In order to appraisal such learning outcome a three-fold methodological approach is proposed. By interrogating the use of language within the bio-economy debates in Italy we will firstly try to identify landscape actors potentially influencing social learning process in the Italian bio-economy; subsequently, we will perform a source of pressure assessment.
aimed at conceptualising these struggles in terms of multi-dimensional discursive interactions; finally, we will derive the emerging storylines and emphasizing their role in the learning process for a transition towards a circular bio-economy in Italy. Our findings can contribute to the development an informed policy view on the learning mechanisms pursued in the transition towards sustainability.

References


Vinke-de Kruijf and Wostl, 2016, A multi-level perspective on learning about climate change adaptation through international cooperation, Environmental Science & Policy · August 2016
Technological growth and development has helped humanity to make life easier with possibilities to have faster processing than before. This steady and speedy growth has brought many negative aspects along with its positive impact, and therefore has/is gaining risen attention by both the academic scholars and industry practitioners. The speedy production pattern requires raw materials to be supplied at the same pace, and encourages consumption patterns accordingly with short life cycle of the products. This raises the concerns for infinite availability of resources. Boulding (1966) started to raise awareness on this issue and further studies were carried out by Pearce and Turner (1989), highlighting the imbalance in the economic system and the environment, with no clue to recycling (Su et al., 2013). Several initiatives and models emerged to address this issue and the most recent development in this regard is Circular Economy (CE), which has and is gaining momentum.

It is believed that CE has existed for much longer (Murray et al., 2015), and that it cannot be dated back to any specific time but it has gained increased attention since late 1970s (Webster, 2015). The underlying reasons for the development of CE are resource scarcity, over extraction, rising costs, negative impact on environment, and the overall attitude towards the issue (Gregson et al., 2015) (Boulding, 1966). The concept is believed to have its roots in the Eco-Industrial Development concept (Geng & Doberstein, 2010), and Ecological
and Environmental Economics (Ghisellini et al., 2016). The historic industrial development model by Henry Ford can also be linked to be laying foundational understandings for it (Braungart, 2002). Many other frameworks and strategic initiatives such as JIT (Liker, 2004), Green Production and Logistics (McKinnon et al., 2010), Lean (Thomas Goldsby, 2005), etc. have been developed. Despite the great contribution of these approaches, which indeed is positive, it is evident that their utilisation has been with the focus on optimization in the linear model which is take – make – dispose (Ellen Macarthur Foundation, 2015), also known as “Cradle to Grave” (Braungart, 2002). The linear mode of production: Take – Make – Dispose, assumes and largely depend on mass supply of easily accessible resources and energy, which is contrary to reality at hand in the face of scarcity of resources (Webster, 2015). CE defines a new approach to deal with this issue.

The literature review portrays the Circular Economy as truly embracing the business operations from the holistic point of view, dealing with resource recovery (Gregson et al., 2015) (Singh & Ordonez, 2015) (Li et al., 2013), resource efficiency and effectiveness (Hu et al., 2011) (Schulte, 2013), sustainable production and consumption, industrial symbiosis, zero waste, design for recycling, remanufacturing, waste prevention (Velis, 2015), and product life/ end of life cycle management (Webster, 2015) (Greyson, 2015) (Ellen MacArthur Foundation, 2015). The explored literature reveals the scholars exploring CE’s scope in the areas of industrial implementations in both production and service, policy development and implications, strategy development, and the adaptation of CE and results. Literature further points to 3 major barriers for the implementation of circular economy as being: Policy, Technology, and Public Participation (Geng & Doberstein, 2010).

This paper analyses the literature and identify the gaps utilizing the Mckinseys 7S tool (McKinsey & Company, 2016) but was not limited to, to explore the areas for future research streams. These gaps are identified in the following eight cross/interlinked dimensions that needs attention for the realization of full potential of CE: Waste Process, Wastage Reprocessing, Quality/Perception, Industrial Capability to utilise, Network/ Partnership/ Collaboration, CE and Role of LSCM [Logistics and Supply Chain Management], Financial/ Economic aspects of CE, and finally the legislative aspects.

The authors strongly believe that CE has great potential in resolving the challenges faced in the current economic system worldwide, but authors do agree that to expect CE’s
implementation with hundred percent results and to achieve the goal of zero waste is unrealistic, as in one form or the other, the waste will be created which is neither recoverable nor renewable. CE’s distinct characteristic make it the most ideal way to revolutionize the economic system with goals to minimize the waste and maximize the utility at the optimal level. Further research would strengthen the application of CE to develop/support the sustainable model of business.

References


Customer-oriented business actions to accelerate the transition to CE

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Acceptance and integration of sustainability as part of company strategies and operations is becoming widespread among businesses (Dyllick & Muff, 2016). This gets complemented with a bottom-up pressure on more sustainable products and services coming from society and international organizations like United Nations (UN). UN’s Responsible Consumption and Production is the Sustainable Development Goal (SDG) driving business behaviour towards sustainability. Beside the pressure from political discussion, also consumers are pushing companies to become more sustainable (Brochado et al. 2016). Therefore, new types of collaboration between companies and their customers, as one of their key stakeholders, are needed to achieve sustainability goals. Circular economy (CE) approaches are one of the ways in which this is happening. This imply a higher emphasis on practices such as using waste as raw material, designing products to be recycled, transforming businesses towards product-service systems, repair, recycling refurbishing and collaborative consumption (Spring and Araujo, 2016; Bocken et al. 2016.)

CE has been in many connections viewed as a promising way to help addressing the pressures of more sustainable production without downshifting consumption but changing the unsustainable consumption patterns towards more sustainable ones (Ghisellini et al. 2016; Bocken et al. 2016, 2014; Hobson & Lynch 2016). Previous studies have identified the factors that influence the consumer acceptance of circular services and products (Antikainen et al. 2015; Lammi et al. 2011; Mylan 2015; Rexfelt and Hjort af Ornäs 2009). These include: order to offer superior value, services and products have to be easy-to-use, time saving, low-risk and cost-effective (Antikainen et al. 2015; Lammi et al. 2011; Mylan 2015). Encouraging more responsible consumption can be done from a business strategy perspective as well as from the government or policy perspective. Moreover, the introduction of a life cycle
perspective when looking at products has been a key element of this shift, bringing new opportunities for collaboration between companies and customers at the design, use and disposal stages of the product life cycle. Also new forms of service-based collaborations are arising in the context of the CE. Especially services are intangible in nature and can be regarded as relational, interactive processes with customers (Edvardsson and Olsson, 1996; Grönroos 1990).

This research investigates the customer role in the transition towards circular business models. Indeed, we study how customers influence the different business strategies that companies put in place to move towards circular products, services and operations. Our research question is framed as: How companies interact and deal with customer demands, values and expectations related to the CE? The research is a qualitative empirical study as part of a collaborative research initiative. We have conducted a set of interviews in 10 companies based in Finland, UK and Spain, considering both the B2B and B2C sectors. The interviews have been consequently analysed following a categorised coding process. We have concentrated to find out what are the company solutions to following questions: How do you cascade sustainability to your products and services? What strategies do you use to communicate this to your customers? What is the customer response to that? The findings from this coding process have been analysed on a case-based basis, thus, considering the specific business context of the companies studied.

Preliminary results indicate that several business strategies are used to deal with customer demands and expectations. Different actions are put in place to match customers’ demand, mixed with companies’ own motivation towards more sustainable production patterns. Moving towards CE is seen by some companies as the subsequent step in the search for resource consumption reduction and therefore, for cost saving measures. Others approach this transition as a means to build brand reputation and being acknowledged for their sustainability related initiatives. Moreover, customers may be willing to pay extra for products and services that are branded as sustainable or environmental friendly. Handmade or handcrafted products are associated to a premium price, thus, implying a new way of looking at luxury products. On the contrary, when these products compete with regular products, companies face problem of balancing pricing (premium vs non-premium) and the level of sustainability / circularity embedded in their products and services.
Companies’ priorities to decide which new products/services to go for, is strongly connected to their business values and mission. They often look at the essence of the business and consider their relatedness with this essence and with the current portfolio. This seems to be particularly important for companies highly oriented to solve sustainability challenges. Our preliminary findings show that the strategies adopted, actions and priorities defined vary significantly between sectors and different type of markets.

This collaborative research sets the background for a deeper understanding on how companies respond to customer demands and sustainability. Further research will be framed to address differences between sectors and markets as well as to investigate consumer preferences. This would give us a comprehensive picture on how the transition towards the CE can be done.

Keywords: Business strategy, circular economy, customer demand, sustainable consumption and production.

References


Evaluation Aspect of Regional Development Policy based on Circular Economy (CE)

Assumptions

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European Union experience with CE strategy of development started in 2008 with Directive 2008/98/EC on Waste and further Europe 2020 Strategy for Smart, Sustainable and Inclusive growth for 2014-2020. And since this time, a new era of the CE idea could be observed in Europe. The modern CE concept became wider and much more complex in comparison with the first CE world initiatives: German and Japanese resource and environmental policy (Triebswetter and Hitchens 2005; Moriguchi 2007; Bilitewski 2007), China CE national strategy and Circular Economy Promotion Law (2009), and in the 11th, and 12th ‘Five Year Plan’ in China.

Recently the importance of the CE idea for EU regions became obvious and a larger number of local and regional initiatives were pushed into action with the purpose of transforming a leaner economy model approach into a circular economy model approach (Smol at al., 2017). So, the author proposes to investigate CE influence on five regional development areas: CE-economic regional development; CE-environmental regional development; CE-social regional development; CE-spatial regional development; CE-cultural regional development.

It should be stressed that the aforementioned areas concern not only hard regional capital development (like resource or energy efficiency etc.), but also soft regional capital (environmental education level, regional comminutes CE awareness, new knowledge and skills needed for circular economy society, new ways of collaboration etc.) development.

Each mentioned area of CE should be monitored in order to track progress on the way to CE-based regional development. The most efficient and most transparent way of such monitoring is a system of indicators, which can estimate each CE area in relation to regional development.
Recently, a number of studies were devoted to CE measuring. Different methods were proposed and discussed for circular economy measuring at the micro level and the level of industrial parks (Ellen MacArthur Foundation, 2015, Valerio Elia at al., 2017, Haoran Zhao et al, 2017, Wang et. Al, 2017). The current study focuses on the regional level, so evaluations are supposed to be used for the design of future evaluation indicators, which help regional authorities to monitor CE strategy implementation and progress. There are some studies dedicated to CE indicators at the regional level, which were done in China with case studies for some cities and regions from this country (Geng at al., 2009, Qing et al. 2011a, Jiang Guogang, 2011, Yang Qing et al, 2011b, JIA Chun-ronga and ZHANG Junb, 2011). The majority of them are based on the index method where local and regional peculiarities were taken into account. But such indicators couldn’t be transformed into indicators for European regions where local and regional conditions and priorities are completely different. Moreover, in 2011 a national system of circular economy indications was introduced in China, and they were categorized into four groups: resource output, resource consumption, integrated resource utilization and waste disposal/pollutant emission indicators (Geng et al., 2012). The main limitation of such an approach is that the same indicators were proposed for national and regional level. So, regional level indicators were not specified CE evaluation aspects which influence CE-based regional development.

This year The European Commission is going to present The CE Monitoring Framework and it would be applied at EU and national level of Member States. It is, for sure, not enough to monitor progress at the local and regional levels. Moreover, it is unknown which kind of monitoring (qualitative or quantitative) it would be. And nothing was said about the possible indicators included in such monitoring framework. So, it is necessary to pay attention to CE monitoring framework at the regional level. For doing this, it is vital to specify which evaluation aspects should be taken into account for monitoring regional CE progress. So, the author proposes evaluation aspects for CE Regional Monitoring Framework (tab.1).

Table 1: Evaluation aspects for CE Regional Monitoring Framework

<table>
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<tr>
<th>Regional Development Areas</th>
<th>Evaluation aspects of CE Monitoring Framework</th>
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<td>• economic growth;</td>
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| CE-economic regional development | • innovative development (CE-based technical innovation);  
|                                 | • regional industrial symbiosis systems development;  
|                                 | • urban industrial symbiosis development;  
|                                 | • recourse consumption level and resource efficiency level;  
|                                 | • energy consumption and energy efficiency level;  
|                                 | • energy balance in the region;  
|                                 | • water consumption and water usage efficiency;  
|                                 | • share of CE products and services offered in the region;  
|                                 | • share of SME enterprises with CE business model;  
|                                 | • share of CE based GPP;  
|                                 | • CE investment projects funded;  
|                                 | • CE R&D funded.  
| CE-environmental regional development | • waste recycling rates;  
|                                     | • air pollution rates;  
|                                     | • renewable energy production/usage;  
|                                     | • Water reuse.  
| CE-social regional development | • CE awareness of citizens and business sector;  
|                                    | • CE related education;  
|                                    | • CE-based level of employment;  
|                                    | • Circular society development initiatives;  
|                                    | • social innovations;  
|                                    | • life expectancy;  
|                                    | • urbanization level;  
|                                    | • CE-based collaboration/collaboration platforms;  
|                                    | • exposure of air pollution on human health at the region;  
|                                    | • NGOs activities related to CE.  
| CE-spatial regional development | • CE-based special planning;  
|                                  | • CE public space;  
|                                  | • CE-based transport infrastructure;
| **CE-cultural regional development** | • CE-based forms of the art;  
• CE product design solutions in region;  
• CE architecture solutions in construction sector. |
|--------------------------------------|-------------------------------------------------------------------------------------------------|

Evaluation aspects presented in table 1 would be helpful for designing future CE regional indicators in order to do simple and effective regional monitoring. Such monitoring would be one of the key points for faster and more efficient transition to CE model of regional development in the EU.

**References:**


Session 2.4
I Shop Therefore I Am: Creating Sustainable Behaviours in Clothing Consumption

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I Shop Therefore I Am: Creating Sustainable Behaviours in Clothing Consumption

Background:

It has long been acknowledged that everyday consumption practices of Western societies are environmentally unsustainable. Consumption of clothing is a pertinent case. Clothing is important as evidenced by a global garment industry valued at around US $1.7 trillion and employing approximately 75 million people (Fashion United; International Labour Organisation). There are significant environmental costs from resource inputs, manufacture, use and disposal of clothing. For example, more chemical pesticides are used in growing cotton than any other crop, while non-natural fibres involving petrochemicals during production release nitrous oxide, 310 times more environmentally damaging than carbon dioxide (Green Choices). Purchase and use of clothing has a significant carbon footprint from emissions and water use. This impact occurs while approximately only 30% of clothing, valued at around £4000, in our wardrobes was worn in the last year (Williams, 2016). Research to date, has tended to focus on the textile industry and closed loop manufacturing
(Wilson, 2015) and the sustainable design process (Earley and Goldsworthy, 2015) along with clothing recycling and disposal (Birtwistle and Moore, 2007). While a need for consumer behaviour change is clearly identified as important for systemic change, little insight is provided as to how this can be facilitated. Previous research (e.g., Hassan, Shiu and Shaw, 2016; Shaw, et al., 2006) reveals the significant barriers to more sustainable clothing practices even among the most committed ethically concerned consumers. In seeking to extend sustainability beyond a small niche group of ethical/green consumers, this research seeks to develop a richer understanding of the challenges, barriers and opportunities of sustainable clothing consumption among ‘mainstream consumers’ to mobilise these into opportunities for behavioural change. This is important as it focuses on the space between design and disposal that is currently under-represented. Here consumer purchase and usage are critical in maximising the cycle of clothing use and the associated input and disposal benefits that will result from such a shift. This research will gain critical insights into existing consumption habits and identify how more sustainable approaches to clothing (non)consumption could be made accessible in practice to a mainstream audience in the UK through case studies of alternative (non)consumption practices.

Methodology:

Following Lury’s (1997: 77) suggestion to “think in terms of object-people practices”, a multi-method qualitative study will be undertaken as a way of gaining an understanding into current consumer clothing practices and engaging consumers in the creation of more sustainable approaches. Purposeful and snowball sampling will be employed to recruit a diversity of 18 case participants (Bryman and Bell, 2007) who are active consumers of new clothing (i.e., they purchase new clothing at least once a week). The research will focus on consumer depth interviews (McCracken, 1988), wardrobe audits (Pilcher, 2011) (including photographic and video recording) and diaries (including textual, on/offline platforms and video). These approaches will be used to gain insights into current consumer behaviours and will engage participants in a set of differing sustainable (non) consumption practices over a sustained period of, initially, 2 months. Interpretation and analysis will involve multiple iterations of coding, repeatedly returning to the multiple forms of data to refine thematic codes. The focus is dialogical and reflexive, thus, the data collection and analysis are integrated into an interactive, iterative process. The photographic and videographic data will
be used in tandem with the textual recordings as they each capture different aspects of the consumption phenomena (Penaloza and Cayla, 2006) with the visuals depicting the aesthetic cues and kinaesthetic aspects of clothing consumption.

In the presentation, we will report the findings from the research. Specifically, we will discuss how consumers understand their current clothing acquisition and how they respond to, manage and maintain more sustainable approaches to clothing consumption.

References


'Global Fashion Industry Statistics - International Apparel' (Fashion United)


Green Choices

https://www.greenchoices.org/green-living/clothes/environmental-impacts
Accessed 30 January 2017


Textiles, clothing, leather and footwear sector’ (International Labour Organisation)


http://www.huffingtonpost.co.uk/sam-williams1/the-environmental-impact-_1_b_13546078.html

Accessed 30 January 2017

Driving Circularities in the Food Supply Chain: The Sustainable Role of Alternative Food Retail Enterprises (AFREs)

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The concept of the ‘circular economy’ is mooted as a new approach which can help facilitate the successful transition to a sustainable future, but there exists very little academic debate around the concept either within the business or sustainability literature (see Andersen, 2007; Murray et al., 2017). Similarly, despite much attention given to the topic of sustainability throughout the marketing discipline (McDonagh and Prothero, 2014), academics and NGOs (e.g. WRAP) have only recently started to question the sustainability of the retail sector (Thornton et al., 2013; Manna et al., 2016).

More recently, a range of alternative food enterprises have emerged more recently which challenge the dominant mode of food retailing (Manna et al., 2016; Holweg et al., 2010) by incorporating social, environmental and economic forms of capital. Therefore, in response to calls for research which explores how businesses are cultivating a more actionable agenda for sustainable growth (Prothero et al., 2011; Vicdan et al., 2016), this study explores how alternative food retail business models drive circularities to ensure the transition to a more sustainable food supply chain. As the concept of the circular economy is limited in its application of social and ethical dimensions (see Murray et al., 2017), this research also draws on the conceptual lens of the sustainability marketing model which emphasises the social and ethical (see Belz and Peattie, 2010; Lim, 2016). In so doing, this study contributes to the marketing literature by advancing an empirical-based conceptualisation of sustainability marketing to reveal the driving circularities of food by AFREs.

Literature Review
Essentially, the circular economy turns waste into a sustainable system that is then used to create goods/services (McEachern, 2012). Situated mainly in the industrial ecology literature, the notion of the circular economy is relatively new to marketing and management disciplines and is also referred to in other disciplines as closed-loop systems or life-cycle thinking (Bocken et al., 2016). Given its crucial role in re-designing our use of resources and building a more resilient economy, the Ellen MacArthur Foundation (2015) advocates a greater adoption of a circular approach. However, a key limitation of the ‘circular economy’ is that it is “virtually silent on the social dimension” (Murray et al., 2017, p.376), thus limiting attentiveness to the moral and ethical dimensions associated with the food supply chain.

Therefore, to ensure the food supply chain has the capacity to continue into the future without “compromising the ability of future generations to meet their own needs” (World Commission on Environment & Development, 1987, p.8), businesses must reflect upon the “interrelated systems of which it is a part” (McArthur et al., 2016, p.281). Taking more of a critical approach to the whole sustainability marketing process, Carrigan et al. (2016) provide an empirical insight into the complex harm networks that operate within and across the jewellery sector, demonstrating the potential for greater collaboration between institutional forces, businesses and transformative business models to avoid unintended harms and create social value. Therefore, to ensure ‘deep’ or ‘real’ sustainability, a more holistic, social and collective approach to sustainability (Belz and Peattie, 2010; Lim, 2016; McEachern, 2012) together with the concept of the circular economy could prove invaluable, when driving the transition to a more sustainable food supply chain.

Methodology

Given the exploratory nature of this study, semi-structured, in-depth qualitative interviews were carried out with fifteen owners, store managers and/or members from each AFRE in the UK between late 2015 and 2016 (Silverman, 2016). To secure participants’ involvement, a convenience sampling approach was adopted. Consent to participate was obtained and ethical approval was received from the corresponding author’s University prior to data collection. Each interview was recorded and transcribed verbatim. After making verbatim transcriptions of the interviews, the interview analysis involved coding and the development of initial themes (Miles and Huberman, 1994).
Findings & Conclusions

All AFREs focused on the ‘alternative’ nature of their business model and how they aspired to curb unsustainable practices within the existing food supply chain. For some AFREs, there was an acceptance that perhaps their food products were priced more expensive than mainstream retailers, but many put this down to these retailers not calculating the negative externalities involved in traditional food retailers, for example OTW claimed that “It’s not the cheapest food, but our fruit and veg is loose, so they’re shouldn’t be any waste, which is cheaper in the end”. Drawing on circular economy principles, CS argued that their sustainability values helped to “save 35,000 tons of food from going to land fill”. Compared to narratives surrounding deceitful accounting practices and aggressive supplier relationship investigations, many AFREs also spoke of their enduring efforts to ensure a “symbiotic” relationship with suppliers. While much of the ‘social’ and ‘ethical’ activities discussed were targeted at local activities, many AFREs spoke about their role in the global food supply chain and how they went about making this more equitable and sustainable for all. Operationally, most AFREs adopted a collective approach to sustainability and implemented transformative business models to avoid unintended social and/or environmental harms to create social value.

Overall, the adoption of circular economy principles together with the sustainability marketing model (Belz and Peattie, 2010; Lim, 2016), has helped to advance an empirical-based conceptualisation of sustainability marketing to reveal the driving circularities of food by AFREs. This conceptualisation offers marketing practitioners and retailers the potential to integrate further the additional dimensions of sustainability as well as incorporate a more circular approach to retail management. Arguably, AFREs offer a much more holistic and circular alternative to mainstream food retailers. Thus, their market presence can help both business and consumers transition to living more sustainably today and in the future.

References


Lim, W.M. (2016) “A blueprint for sustainability marketing”. Marketing Theory, 16(2), 232 - 249


Fulcrum points and the circular economy: lessons from food waste and food surplus redistribution

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The reduction of food waste in the food supply chain has been a key policy mandate since the establishment of the FAO in 1945, but despite this there are still significant losses occurring at all points along the supply chain (Parfitt et al., 2010). In the UK, Defra coordinates all government policy on food, although many aspects are devolved. Additionally, much of the UKs food policy is influenced by EU legislation (Defra, 2010). In terms of global production networks, it is argued that globalised food production and trade is a way of managing volatility and ensuring food security by spreading risk, ensuring diversity of supply and keeping prices competitive (Defra, 2010). Reducing the amount of food that is wasted is a key aspect of national food security and the Waste and Resources Action Programme (WRAP) is working with producers to reduce food waste and develop recycling opportunities (Defra, 2010).

There has been much analysis of global production networks and supply chains, recognising transnational production and international divisions of labour. This literature has often focused on the production of goods without regard to their consumption or their end of life (Coe & Hess, 2013). Gregson et al. (2010) have argued that by using a ‘follow the thing’ approach to understanding supply chains it is possible to disrupt conventional thinking that ignores flows ‘down the value chain’ and to bring into focus the back end of the value chain, a commodity’s end of life. In their work they examine things that are considered waste and show that rubbish is not an end-point, but ‘a fulcrum’ at which point value can be rekindled. This chimes with Coe and Hess (2013) who argue that what is waste to one person becomes a commodity to others as it enters a new cycle of production and consumption.

This approach to waste has not, until recently, been applied to food. In this paper I attempt to integrate approaches from waste management, human geography and management studies by following the path of food, at a time when it is considered waste or surplus, as it enters and leaves a food redistribution system. I do this in order to unsettle deliberations
about food as waste or surplus as a means of feeding people in food poverty. Moore (2012, 781) points to Žižek’s ‘parallax view’ for a ‘more than human’ justification of waste as a foci of study; she argues that waste can be viewed as a parallax object ‘which disturbs the smooth running of things’ (p781, citing Žižek, 2006). This can also be applied to food as waste; by changing our observational position food as waste can be reconfigured as food to eat, disturbing the linear ideal of a food supply chain within which wasted food is a norm.

The paper explores food waste and food surplus redistribution and shows that management concepts including supply chains and industrial symbiosis (Chertow, 2000) are useful for deliberating the potential for such food to remain a key part of the food system, ie to be eaten. By the additional input of the concept of ‘fulcrum’ points I show the specific locations at which food that is surplus in one domain can be utilised as a raw material in another. Further, by reconfiguring the waste hierarchy in to a food waste hierarchy, the ways in which surplus food can become part of a circular economy is demonstrated.

In this paper I argue that using an industrial symbiosis approach in conjunction with supply chain thinking enables the narrative of food as waste to be opened up and inspected. Taking as its starting point the contested configuration of food as waste, the paper argues that taking a supply chain approach helps with identifying the points of intersection at which food takes on various guises, as food, surplus and waste. I examine the ways in which such ‘material’ is reconfigured at these various points on its journey from surplus back to food. The paper identifies that all food that circulates within this ‘redistribution’ system should not be considered waste or surplus and demonstrates that by using circular economy thinking instead of linear economy thinking it is possible to reconfigure the food waste hierarchy to minimise the amount of food that is wasted and uneaten.

The study was conducted using a ‘day in the life’ ethnographic approach to data collection, incorporating observations and interviews with key informants during two full days at two organisations involved in the redistribution and consumption of surplus food in Greater Manchester. Additional ‘key informant’ interviews were conducted with relevant individuals including, for example, the Director of Public Health for Salford, alongside an analysis of relevant grey literature. A review of the literature on surplus food redistribution supplemented the primary research, in order to confirm the categories of organisations
involved in redistribution and to identify the points of intersection that require greater problematizing.

This paper contributes to the debates on food waste and food poverty by demonstrating that food that is surplus to requirement should be considered within the framing of the circular economy, arguing that supply chains and industrial symbiosis mean that the term waste should be dropped in many instances and the term food re-appropriated. By highlighting points where food waste/surplus becomes food again, we can see this food as part of the food system itself, delegitimising terms that stigmatize the eating of such food – i.e. where eating such food is presented as charity rather than normal.

References


Session 2.5

Does upcycling exist? Exploring the conceptual distinctions between the down-, re- and upcycling trinity and cascades.

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In order for the circular economy concept to deliver upon its transformative potential, the lack of precision of definitions and assessment measures to improve circularity need to be addressed (Haas et al. 2015). This paper aims to take on this challenge by making a conceptual contribution towards distinguishing between the different resources life-extending strategies that are at the heart of the circular economy concept (Blomsma and Brennan 2017). Specifically, we examine the meaning assigned to the concepts of ‘downcycling’ (e.g. Koffler and Florin 2013), ‘recycling’ (e.g. Geyer et al. 2015) and ‘upcycling’ (e.g. Pauli and Hartkemeyer 1999; Braungart et al 2007; Sung 2015) and compare the use of this trinity to that of ‘cascades’ and ‘cascading’ (e.g. O’Rourke et al. 1996). We base our discussion on academic literature between 1991-present and use as one of our selection criteria the use of at least two terms of the trinity. We supplement the sources thus uncovered with selected seminal grey literature in the waste and resource discourse.

This paper is structured as follows. Firstly, we briefly discuss the origins of the recycling concept, which emerged mid-19th century. This is followed by a brief discussion of the emergence of downcycling from 1977-1990. Next, we focus our discussion on the period 1991-present, where down-, re- and upcycling start to co-occur (see Fig. 01). Subsequently, we review the meanings uncovered and compare these with the concept of ‘cascades’ from the perspective of value preservation as well as of value destruction and value generation (Bocken et al. 2014). This discussion elucidates that the distinction that the recycling trinity offers is not robust: where downcycling is used as a term with technical connotation to denote a process that reduces material quality unnecessarily, upcycling is not used
(consistently) as its antonym (Lakoff and Johnson 2003). That is: upcycling does not (consistently) refer to the restoration of a raw material to a pristine or virgin-like state. Instead, it denotes situations where what is considered a low value resource in one use-context, is taken to another use-context where it is regarded as of higher value. We illustrate this observation with case examples.

In essence, in situations described as upcycling a redefinition of value takes place where specific properties of the resource are evaluated differently from one context to the next. However: all cascades involve such a redefinition of value. We therefore propose to designate such situations not as upcycling, but as a cascade. Moreover, consistently using the ‘cascades’ label has the potential to generate a deeper understanding of the nature of resource transformations when substance or material cascades are compared to product and energy cascades (Stahel 2006; Chertow 2000). Thus, while we acknowledge the aspirational and inspirational role the term ‘upcycling’ plays, we propose a distinction between the terms used in the contexts of marketing and academia and argue against its use as a technical term when attempting to address questions regarding the strategic implementation of the circular economy concept.

Emergence and co-occurrence of down-, re- and upcycling trinity
Fig. 01 Timeline depicting the emergence of down-, re- and upcycling, with more detailed depictions of the periods where the respective terms first appeared. Note that this graph depicts use of the terms in general literature and is not confined to literature covering the waste and resource debate. Nevertheless, it is taken to be a useful proxy for the use of the terms within this debate. “Cascading” is not included, due to its wide use outside of the waste and resource discourse. This overview is limited to 2008, due to the fact that this is the limit of freely available data on Google Ngram.

References


The Upcycling Movement: Pursuing Hedonistic Sustainability

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The planet cannot sustain current levels of resource depletion and waste production (United Nations, 2011). Unsustainable consumption practices have been identified as a key detriment to the physical environment (Jackson, 2005a). However, consumption of sustainable products currently available on the market are “disheartening at best” (Eckhardt et al., 2010). An identified issue by sustainable consumption researchers has been the traditional positioning of sustainability in opposition to capitalist systems (eg CSR Policies, Green Activism) (Prothero and Flitchett, 2000). Upcycling is an emergent consumer-orientated movement, in which individuals take materials which would normally be considered waste, and in some way transform them, to create objects of higher value. This study takes a cultural approach to understand consumption practices, and investigates upcycling as an alternative form of sustainable consumption which already embraces capitalist structures. Upcycling is presented as more appealing to individuals because it exists partially as a hedonistic pursuit – a normative way through which consumers already consume.

Cultural perspectives on consumption recognise consumption practices as irrational, and not necessarily goal-orientated towards functional utility (Schaefer and Crane, 2005). Consumer goods now have a significance which goes beyond their utilitarian character and commercial value (McCracken, 1986). Consumers do not consume goods for what they are, but rather for what they can symbolically add to aid the construction of ones continuously evolving identity (Levy, 1959). In itself, this presents difficulties in encouraging sustainable consumption practices (Schaefer and Crane, 2005), as individuals are not willing to forgo an all-important self-identity, and are therefore considered to be “locked-in to practices of
unsustainable consumption” (Jackson, 2005b). Current market attempts to position ‘green’ products are found symbolically unattractive to consumers (Hurth, 2010), and this contributes to their failure in the marketplace (Eckhardt et al., 2010).

If sustainable consumption is instead considered amongst the social and cultural functions by which consumers currently consume, there may be a more potent mechanism to encourage sustainable consumption practices (Schaefer and Crane, 2005). Holt (2002) importantly notes that emotional states are found to be embedded in consumption practices. Individuals experience consumption objects using interpretive frameworks (Holt, 2002), resulting in emotional states such as hedonism (Holbrook and Hirschman, 1982). Hedonic pleasure specifically, is often sought through consumption objects (Dobscha and Ozanne). Baudrillard (1997) outlines that in contemporary society, consumers do not just have a right, but also a duty to seek pleasure. In this sense, pleasure can be obtained through either the act of object acquisition, and/or the possession of that object over time (Campbell, 1987). Hedonism can be sought during the act of acquisition itself (eg. shopping) (Woodruffe, 1997), and also, through related consumption activities such as DIY and craft (Tanembaum et al., 2013).

The theme of this conference ‘The Circular Economy’ encourages the consideration of consumption objects which move continuously and repeatedly through the consumption process. A cyclical view of consumption stands in opposition to the traditional view of the consumption process as a linear process from acquisition to disposal – disposal being the end of the consumption process. Diagram one (See Appendix One) proposes a cyclical view of consumption, in which objects can move from ‘disposal’ to ‘acquisition’ (Brosius et al., 2013) and therefore ‘connect’ the current conceptualisation of consumption from linear to cyclical. This interpretive study using ethnographic methods, investigated the upcycling movement – a movement which see’s individuals actively use disregarded materials to create objects of higher quality or value (See Appendix Two). Upcycling can be regarded as an activity which connects the identified ‘disposal’ and acquisition’ components of the consumption cycle. As a consumption practice which objectively fulfils a move towards the circular consumption cycle, this study asks: How does upcycling inform culturally sustainable consumption practices?
First, upcycling can be considered an alternative form of sustainably-orientated behaviour. As outlined above, traditional green market offerings are failing (Eckhardt et al., 2010), however upcycling is becoming increasingly popularised. As an individualistic, consumer-orientated practice, upcycling is construed as something in which consumers can directly engage. Upcycling is constructed by individuals as ‘fun’, quirky’ and ‘cool’, which offers more appealing symbolic associations than those offered by traditional green market offerings (See Appendix Three). Individuals can construct an identity with the alternative symbols associated with upcycling and sustainability collectively. Second, upcycling exists as a form of hedonistic sustainability. Upcyclists experience emotional states brought about by the upcycling process and completed upcycling projects including; self-expression, self-indulgence, relaxation, pleasure, pride, amongst others. The personalisation of consumer products adds to the experience of ‘expressiveness’ (Tanembaum et al., 2013), which is contributes to hedonistic pursuits and are embedded in upcycling practices. The emotional states brought about by the upcycling process, are indicative of other hedonic pursuits such as craft and DIY projects mentioned above. From a sustainable consumption perspective, this study shows that hedonic pleasure gained through consumption, can not only be gained from new consumption objects (as is most often studied in consumption literature), but also from material objects that have been previously discarded. Last, this study concurs with Prothero and Flitches’ (2000) proposition that greater enlightenment about sustainable market offerings can be achieved through traditional capitalist systems, if commodity culture is used effectively. Thus, if public policy exists to promote upcycling practices, both introductory and long-term changes in favour of sustainable consumption practices could become more widespread.

References


Access based consumption in the second hand luxury garment sector (Sharing economy).

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The fashion industry is emerging as an important sector because of its extraordinary progression (Karaosman, Brun & Morales-Alonso, 2016). According to a survey in the context of the global personal luxury goods market – which includes leather accessories, bags, garments, fragrance and cosmetics, the global luxury fashion industry exceeded €250 billion in revenue and had a healthy growth of 13% at current exchange rates from 2014 (D’Arpizio et al., 2016).

In the UK, this growth is mirrored with the British luxury market growing from £5 million to £500 million (Berg, Brantberg & Zaharieva, 2016). Although the fashion industry is a key economic contributor and thus, important for the global and more specifically for the British economy, these positive aspects are over-shadowed by a bleak backdrop. The Environmental Protection Agency reported that 15.1 million tons of textile waste were generated in 2013, of which 12.8 million tons were discarded in landfill (EDGE, 2017). Further, in the production sector of fashion industry, the use of cotton, wool and synthetic is causing significant environmental impacts; a large quantity of water and pesticides is requiring in cotton and wool production processes (Caniato et al., 2011). These facts and data reveal that the fashion industry is facing challenges in sustainable development due to economic pressures, environmental impacts and social consciousness.

The circular economy aims to achieve a better balance and harmony between the economy, environment and society and has gained growing interest over the last decade (Ghisellini et al., 2016). Thus the circular economy addresses issues that were previously raised in terms of social, environmental and economic aspects. It is an approach to change the current production and consumption model based on continuous growth and increasing resource throughput (Ghisellini et al., 2016). The circular economy looks at “waste” materials as a new resource and therefore extends the life cycles of pre-loved garments or helps to reuse materials by dismantling them into their original components and reusing them in new
products. Luxury fashion goods are high-value, unique and copyrighted merchandises thus these products possess the value of collection and cycle. According to the concept of circular economy, the discarded or collected luxury fashion goods can be defined as new resources and can be redeployed to market.

Access based consumption can be a part of the circular economy approach as this model is to reuse the resources and it is already applied in some housing and car company such as Airbnb and Uber. Access based consumption is a kind of transaction that is mediated by the market and provides temporarily limited access to goods and services for customers. Rather than paying to acquire ownership of said goods/services for a limited time without gaining ownership (Bardhi & Eckhardt, 2012; Lawson et al., 2016). A Mintel survey by Clifford (2011) pointed out that there is a chance existing in fashion domain that retailers could host some swaps shop and/or rented pop-up events for young fashionistas to update their wardrobes with second-hand designer garments (Clifford, 2011). Consequently, deploying the business model of access based consumption in luxury fashion industry to rent or hire luxury goods for consumers highly conforms environmental standards and sustainability practices within a circular economy.

This research explores challenges of access based consumption models in the context of the UK (second-hand) luxury fashion market from a consumer perspective. This research is explorative in nature and looks at gaps of perceived service quality from a consumer side. This research is part of a wider PhD project that focuses on access based consumption and SERQUAL. For this research qualitative, semi-structure interviews will be conducted with 15 target consumers of access based consumption retailers. This research explores the following key questions:

1. How do people feel about renting clothes and not gaining full ownership?
2. What drives customer orientations for renting clothing within a luxury fashion context?
3. What are the barriers for consumers to rent clothing?
4. How reliable are the renting services from consumer perspective?
5. What aspects do the customers care about when they decide to rent clothing? Such as clothing quality, cleanness and wear-out.

References


D’Arpizio, C., Levato, F., Zito, D., & De Montgolfie, J. (2016). The global personal luxury goods market in 2016 will mirror last year’s low single-digit real growth, even as geopolitical turmoil and luxury brands’ emerging strategies reshuffle internal market dynamics.


Session 4.1

Impacts of Traditional Culture on Sustainable Consumption: A Multi-Country Study (S.E. Asia)

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In the era of urbanisation and globalisation, with consumerism having reached many corners of the world, the current alarming level of human consumption has led to a huge concern over the ability of our planet to sustain future generations (McDonagh and Prothero, 2014). Sustainable consumption has therefore become a global issue of interest among academics, practitioners and policymakers (Banbury, Stinerock, and Subrahmanyan, 2011). Though there is not a single comprehensive description of this concept, one proposed by the 1994 Oslo Symposium on Sustainable Consumption has been used as an established working definition:

The use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of wastes and pollutants over the life cycle, so as not to jeopardise the needs of future generations.

According to Fatma and Rahman (2015), studies on sustainability and consumer behaviour are often focused on developed nations in Europe and America. There are still relatively fewer studies relating these issues to other parts of the world, especially research that brings together a group of countries that may share some similarities in consumer values due to geographical proximity, and historical and cultural legacies. Unlike those that answer the question of “what behaviour”, studies relating to consumer values tend to explain the reasons for consumer behaviour therefore can bring about in-depth understanding of the subject and have profound practical and policy implications.

This multi-country study is timely in recognition of the lack of research on sustainable consumption in the substantial and fast-growing East Asian markets, especially on how traditional cultural values influence consumers’ attitudes and behaviour. Being part of what is known as the “Confucian societies”, where many cultural values are mainly rooted in the
teachings of Confucius, an ancient Chinese philosopher (McCort and Malhotra, 1993; Fang, 1999; Gupta, Hanges, and Dorfman, 2002), Japan, China, Vietnam and Singapore are chosen for the main data collection stage of this study. The shared values across the four countries can allow measurement equivalence to run the focal research model, yet their stark differences at macroeconomic level will enable valuable comparison among them (Monkhouse, Barnes and Stephen, 2012).

This study seeks to investigate the influence of a number of cultural values (Face Saving and Long-term Orientation) on consumer attitudes and purchase behaviour of products with recycled contents. According to past research, East Asian consumers have high levels of Face Saving and Long-term Orientation, and the research question is how each of these values influences consumer attitudes and buying intention of recycled products. The main objectives of the research includes: 1) to investigate the mechanism under which Face Saving and Long-term Orientation values impact on consumer attitudes and purchase behaviour of recycled products, 2) to measure the extent of this influence, and 3) to examine how the above influence can differ across countries with different levels of market maturity, economic development and education.

In May-June 2017, a pseudo-random approach will be used to invite customers at major supermarkets in Tokyo (Japan), Beijing (China), Hanoi (Vietnam), and Singapore to participate in a questionnaire survey. To be consistent with similar studies on the influence of national cultural values on consumers, the total sample size for this research is planned to be 800 for the four cities. Participants who are willing to talk further will involve in an interview after filling in their questionnaire, to reveal further about the subject. Data collected from the questionnaire will be entered into AMOS, cleaned, subject to other tests including tests of measurement equivalence, before Structural Equation Modelling is run to test and confirm the research model.

It is posited in this study that Face Saving brings some short-term changes, whilst Long-term Orientation can boost intrinsic interest in sustainable consumption, thus lasting attitude and behaviour change. Together these East Asian values create a receptive context for sustainable consumption, yet their influence undoubtedly is expected to be controlled by national macroeconomic factors such as level of market maturity, economic development and education. The study aims at filling the gap in the literature and providing a theoretical
framework that brings together various cultural and macroeconomic variables to predict, understand and cluster countries in terms of sustainable consumption.

References


Shifting towards a circular economy – evidence from China

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China is an important emerging market with a complex profile. It has overtaken Japan and has become the world’s 2nd largest economy since February 2011 (BBC, 2011). Alongside this, China’s ambition and efforts to promoting a circular economy are recognised. For example the Chinese government’s recent commitment in joining the Paris deal on Climate Change at G20 summit in September 2016 (BBC, 2016). However, despite these government-led commitment, plans and actions, the level of China’s overall resource consumption is still being criticised as “reaching crisis levels” (Mathews & Tan, 2016).

With its emphasis on recycling, resource and product reuse and repair, the circular economy is increasingly gaining attention worldwide as a potential way to encourage sustainable growth (Ellen Macarthur Foundation, 2015; WRAP, 2013a,b,c). Businesses, as well as consumers, have been identified as key participants in this transition to a circular economy. Evidence suggests a new generation of customers are shifting away from ownership to valuing access to goods and skills (Ellen Macarthur Foundation, 2015). Demand is also increasing for consumption innovations such as collaborative consumption (e.g. by reusing, recycling, donating, renting, lending or swapping products), facilitated through online services and extended platforms.

Some progress in China’s economic transition from a traditional economy towards a circular economy is evident too (NBS 2015). The development of a circular economy is still relatively young in China though (Yuan, Bi, & Moriguchi, 2006) and most studies focus on the macro
sector/industry perspective. Studies exploring how Chinese consumers understand or respond to the circular economy are scarce. Yet China’s ambitions require its consumers to fully commit and change their behaviour to more swiftly adopt sustainable consumption behaviours that are pro-circular economy. To our knowledge, there is very limited evidence explicitly scrutinising how Chinese consumers choose to engage with circular economy.

Our research examines the extent to which Chinese consumers are ready to accept or participate in five behaviours – recycling, sustainable buying, reusing/repairing items, avoiding using disposable products and avoiding wasting food – which largely reflect the 3R principles of reduction, reuse and recycling fundamental to a circular economy. We explore these behaviours by considering the influence of identity and values on them; both considered vital to behavioural understanding (Dermody, et al., 2015; Oyserman, 2009; Reed, et al., 2012; Van der Werff & Steg, 2016; Van der Werff et al, 2013; Whitmarsh & O’Neill, 2010). The unique contribution of our research resides in our examination of the influence of biospheric, altruistic and egoistic values on pro-environmental self-identity (PESI) within five buying/reduction/reuse/recycling behaviours in the emerging market of China.

An international online survey sampling company recruited respondents from their online panel and hosted the survey. The company ensured sample qualification and quality control. A rigorous back-translation approach was followed to ensure content validity. We used established scales (for pro-environmental self-identity, values and our 5 behaviours, adapted mainly from Whitmarsh & O’Neill (2010) and Van der Werff et al (2013). Our final sample was 505 responses.

Figure 1: Mean of sustainable buying and reduction/reuse/recycling behaviours

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1 Items being measured on a scale of 1-5, ranging from never, occasionally, often, nearly always & always; the higher the mean, the more frequently an individual takes part in.
As seen in Figure 1, avoiding wasting food and using disposable products seem to be habitual and accepted behaviours, showing the highest means; whilst recycling is less normalised. A simple mediation analysis employing the SPSS PROCESS syntax (Hayes, 2013) (Table 1), confirms PESI as a mediator in all relationships. PESI itself is driven by biospheric and altruistic values ($a_2$=.231 & $a_1$=.124, respectively). Regarding our five behaviours, PESI has the highest influence on recycling ($b_{12}$=.823) and buying environmentally friendly products ($b_{11}$=.741) followed by avoiding disposable products ($b_{15}$=.419) and reuse/repair ($b_{13}$=.344). Overall the importance of values-identity is confirmed.

Egoistic values have a direct positive significant effect on buying sustainable products ($c'_{31}$=.135) and on recycling ($c'_{32}$=.148) and reuse/repair behaviours ($c'_{33}$=.143), adding credence to the ‘green materialist’ in China (Dermody et al 2015) and its enhancement via egoistic values. In contrast, egoistic values had a negative direct effect on avoiding wasting food ($c'_{34}$=-.149). There is also a direct significant positive effect of altruistic and biospheric values on avoiding food waste ($c'_{14}$=.167 & $c'_{24}$=.181) and avoiding disposable products ($c'_{15}$=.185 & $c'_{25}$=.149). This supports the notion that altruistic and biospheric values not only lead to higher PESI, which in turn supports these behaviours, but also directly influences avoidance of these behaviours. The mediation analyses, using bias-corrected bootstrapping with 5,000 samples, confirmed a significant indirect effect of altruistic and biospheric values on all five behaviours confirming their mediating role.

Our study proffers some fascinating insights into Chinese consumers’ values-identity based buying/reduction/reuse/recycling behaviours. Distinctive differences emerge compared with consumers in developed markets. At the conference we wish to discuss these distinctions, the challenges and their implications for progressing a circular economy in China.
Table 1: Mediation Analysis Results using Process

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>M (PESI)</th>
<th>Y1 (Buying sust. products)</th>
<th>Y2 (Recycling)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff.</td>
<td>t</td>
<td>p</td>
</tr>
<tr>
<td>X1(Alt)</td>
<td>$a_1$</td>
<td>.124</td>
<td>3.17</td>
</tr>
<tr>
<td>X2(Bio)</td>
<td>$a_2$</td>
<td>.231</td>
<td>6.70</td>
</tr>
<tr>
<td>X3(Ego)</td>
<td>$a_3$</td>
<td>.003</td>
<td>.12</td>
</tr>
<tr>
<td>M (PESI)</td>
<td>$b_{11}$</td>
<td>.741</td>
<td>9.07</td>
</tr>
<tr>
<td>Constanta</td>
<td>$i$</td>
<td>1.39</td>
<td>8.22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.71</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R²</td>
<td>.272</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F(3, 506)</td>
<td>63.06,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p &lt; .000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>Y1 (Reuse/Repair)</th>
<th>Y1 (Avoid wasting food)</th>
<th>Y2 (Avoid disposable prod.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff.</td>
<td>t</td>
<td>p</td>
</tr>
<tr>
<td>X1(Alt)</td>
<td>$c'$</td>
<td>.106</td>
<td>1.27</td>
</tr>
<tr>
<td>X2(Bio)</td>
<td>$c'$</td>
<td>.064</td>
<td>.847</td>
</tr>
<tr>
<td>X3(Ego)</td>
<td>$c'$</td>
<td>.143</td>
<td>2.86</td>
</tr>
<tr>
<td>M (PESI)</td>
<td>$b_{14}$</td>
<td>.344</td>
<td>3.67</td>
</tr>
<tr>
<td>Constanta</td>
<td>$i_{14}$</td>
<td>.864</td>
<td>2.57</td>
</tr>
<tr>
<td></td>
<td>R²</td>
<td>.109</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F(4,505)</td>
<td>15.39,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p &lt; .000</td>
<td></td>
<td></td>
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</tbody>
</table>
References:


Success factors for self-organised industrial symbiosis in manufacturing industry

Dr Maria Holgado, Research Associate, Centre for Industrial Sustainability, Institute for Manufacturing

Creating value from waste is a central concept within the circular economy. Among the different strategies to create value from waste, industrial symbiosis is gaining momentum as a means to recover value before consumer use and create closed loops among different industries. It has been defined in many ways (see review done by Tao et al., 2015) and it is commonly understood as a collective resource optimization based on physical exchange of materials, energy, water, and by-products among different industrial facilities. Environmental gains associated to resource optimisation and reduction of emissions have been key claims for the implementation of industrial symbiosis. Moreover, economic constraints such as economic downturns and government regulations can be seen also as a main driver to engage in industrial symbiosis programmes / initiatives that increase value for the business (Paquin et al., 2015).

The process of designing, planning and implementing industrial symbiosis is very often an ad hoc process built up for each specific case. Likewise, the barriers that companies face are highly related to their particular business context and locations. Usual business barriers could affect industrial symbiosis projects such as risk, finance, capital mobility and availability of higher pay-back options elsewhere, as well as specific barriers related to the lack of large, continuous waste streams that would make the project attractive (Chertow, 2000). Other explicit barriers of industrial symbiosis applications are related to public approval of the project, difficulties in definition of contractual agreements or in application of new technology specifically to enable the symbiotic exchange (Grant et al., 2010). Industrial symbiosis usually requires high levels of collaboration among companies that may belong to the same supply chain or to different supply chains. This collaboration would imply the integration of their current activities, processes and performance measures as well as the creation of new processes and performance measures, e.g. for dealing with new waste management activities. This brings new challenges to the industrial symbiosis implementation process related to lack of interest on the formation of new business networks and lack of trust in the new dependency links or in the competences of others (Sakr et al., 2010).
Our research explores how businesses willing to apply an industrial symbiosis approach could overcome those barriers and which factors can potentially enhance the likelihood of success for industrial symbiosis implementations. This research concentrates on self-organised industrial symbiosis, by investigating how to promote self-organised resource exchanges that emerge spontaneously among businesses in contrast to more organised schemes such as facilitating programmes or planned government plans for industrial parks (Mirata, 2004; Heeres et al., 2004; Behera et al., 2012; Paquin and Howard-Grenville, 2012; Holgado et al., 2016). A qualitative empirical study based on a set of semi-structured interviews has been conducted with participants from UK and Spain. When available, the interviews were complemented with direct observations of the participants’ manufacturing facilities. Data generated from interviews and observations have been analysed following a cross-case approach.

This article presents some preliminary results on success factors that can help businesses to achieve fruitful industrial symbiosis exchanges. The preliminary results can be categorised in three areas: (1) actions at the resources level; (2) actions at the firm level; (3) external influencing actions. The first category of success factors include the understanding of the nature of the resource to leverage on its nature and intrinsic characteristics and the search for input materials that would simplify the waste mix, thus, potentially facilitating waste exchanges. The second category of success factors concerns the attitudes and initiatives that drive companies to establish mechanisms for identification of opportunities and valorisation of their waste materials, energy and water. Few examples of actions in this category: to keep a learning approach and continuously experiment with new potential uses, to collaborate with neighbours and competitors to achieve volume if necessary and to leverage on reputation and credibility as stable business to support search for resource exchange partners. The third category covers external factors that influence the potential exchanges such as global / national sector trends and regulations, geographical landscape and regional industrialisation policy.

This research brings light in terms of key actions to increase the likelihood of success in industrial symbiosis implementation. It is based on an empirical study that includes companies dealing with symbiosis at different stages of development. This provides a variety of perspectives that is reflected in our preliminary results. Additionally, this offers a
broad set of actions for businesses that could potentially cover those needed in several contexts. Thus, supporting the contextualisation efforts necessary for applying industrial symbiosis.

The list of success factors generated provides an overview of the key areas to be addressed in order to support companies during the whole resource exchange process, i.e. at opportunity identification, exchange design and set-up and exchange implementation phases. Further steps within our research will integrate these findings into the development of a set of management tools to support businesses during the different phases of industrial symbiosis implementation.

References


Food-sharing with strangers: A netnographic account

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Food waste is a major global concern and is becoming a policy imperative internationally due to its economic, social and environmental consequences. Therefore, many initiatives are being adopted by businesses across the globe to tackle this issue. However, much of food waste in the UK arises in domestic kitchens (Carr & Downing, 2014). Furthermore, three-quarters of food waste is avoidable (ibid), implying that there are significant opportunities to prevent wastage of edible food. Radwan, Jones and Minoli (2010) suggest that waste related behaviours are directly correlated with people’s environmental values.

Research by Food & Agricultural Organisation (2011) attributes consumer attitude, lack of awareness, lack of shopping planning, lack of knowledge about labelling and lack of skills to cook leftovers as the prime reasons leading to food waste. de Coverley, McDonagh, O’Malley and Patterson (2008) found ‘out of sight, out of mind’ attitude to be pervasive towards food waste. On a positive note, food-sharing is gaining traction in response to food waste arising in domestic space. Although humans have shared food for centuries (Rapaport and Brown, 2008), food sharing is less common within urban landscape. This study investigates food sharing behaviours among strangers.

The paper examines internet-mediated food exchanges through a smartphone application called OLIO. OLIO predominantly occupies the C-2-C (customer-to-customer) space and encourages people to share any of their leftovers or surplus foods. Netnography is the main research methodology and the research is purely qualitative in nature. A sample period of three months was deemed appropriate and this yielded a total of 1651 useable posts made through OLIO. Netnography was chosen as the research method for many reasons. First, this study focuses on an internet-mediated community and by definition lends itself to netnography. Second, the boundaries of netnographic research have been clearly drawn by Kozinets as compared to many other methodologies associated with online research methods (Lugosi, Janta & Watson, 2012). Third, this methodology made it possible to engage with a much wider range of geographically dispersed people. Last, netnography can
be unreactive and therefore it is possible to conduct it in the most unobtrusive fashion (Kozinets, 2002). The possibility of participant error and bias is therefore greatly reduced. Data gathering and interpretation was done simultaneously. The ultimate unit of analysis was not the person, but the act or the behaviour, as is consistent with netnography (Kozinets, 2002). Thematic analysis technique was applied to analyse primary data. Coding was initially done at the broadest level to capture as many ideas as possible. Posts by OLIO users were organised in eight major themes. The themes were mainly driven by the data.

Analysis of primary data reveals that food waste can be a possible outcome of all primary stages of consumption, i.e. purchase, storage and cooking. The analysis provides solid indication that consumers end up buying more food than needed, and that much of this food is never used. It was interesting to note that one of the most frequently cited reasons for members to post food was that the food had been sitting around for far too long. It was also reflected in multiple posts that cooking too much is one of the prime reasons for people to share food. The research also suggests that personal attitude towards food waste and dietary choices can shape food-sharing behaviours. In addition, the study identified many broader contextual factors such as size of packaging and recipes that often lead to surpluses and these were shared.

The results indicate greater sensitivity and consciousness towards food waste amongst members of this virtual community (individuals and small businesses alike). The netnography of people’s behaviours in the virtual world provides some evidence that the stigma attached with sharing food, especially with strangers is waning. This finding is further supported by the fact that people feel comfortable sharing very small quantities of food items too. Primary data in the form of online posts indicates that people are happy to part with the food as long as someone else is able to use it. It is also clear that this exchange is driven by altruistic rather than economic motive as there are very few posts where money is expected in return.

As is evident, OLIO members are concerned about food waste and this motivates them to join the community in the first place. The findings therefore may not necessarily reflect food waste related behaviours of UK households in general. In addition, this study is based on netnography, and only examines behaviours in the virtual space and not outside of it. Lastly,
this paper only concerns food that was posted through the application and does not present an account of food items that were not shared, wasted or disposed of through other means.

**Keywords:** Food waste, food sharing, OLIO, netnography, thematic analysis.

**References**


Beyond the bean: Coffee, coffee shops and the circular economy

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The UK coffee shop industry has experienced significant growth over the last decade with the number of outlets doubling to over 20,000 by 2016, with continued growth to 30,000 expected by 2020 (Allegra Strategies, 2016). As a consequence of this growth, there has also been a rise in associated waste products too: it is estimated that over 500,000 tonnes of coffee waste is produced in the UK every year, which not only leads to high disposal costs, but also millions of tonnes of CO2 and methane (Cuff, 2016). However, there are some businesses which are making efforts to shift the coffee industry to a more circular system with its waste than a linear one. This paper explores efforts made from both businesses and consumers to facilitate a transition of the coffee shop industry towards a more circular economy. In particular, it focuses on developments around the issue of coffee cup recycling, and innovations in using waste coffee grounds. While there have been a range of developments in the coffee shop industry, there are a range of barriers which prevent more widespread adoption to more circular practices. This paper considers both the facilitators and inhibitors for a more widespread shift towards a circular economy in the coffee shop industry.

Researching coffee and the circular economy

While research from business, geography, sociology and anthropology has sought to begin to explore the coffee shop as businesses, places of economic activity, and important spaces in the urban environment (Ferreira, 2016; Jones et al, 2015, Laurier and Philo, 2005; Tjora and Scambler, 2014) there has been less said about the efforts of the coffee shop industry to address issues of sustainability. Research around sustainability and coffee shops tends to be more related to the sustainability of coffee growing (ICO, 2003; Kolk, 2011; Macdonald, 2007) and the use of sustainability certified products such as Fairtrade (Bennett, 2017; Johannssen and Wilhite, 2011; Staricco, 2016). There has also been some effort to explore
how green practices influence consumer behavior intention in coffee shops (Jang, Kim and Lee, 2015; Kim and Yoon, 2012). While there has been significant discussion around the circular and food systems (Jurgilevich, 2016), those focusing on coffee and the coffee shop industry have been notably scarce; an issue this paper begins to address.

Coffee Cups

The rapid growth of the coffee shop industry has led to a rise in waste products, particularly disposable coffee cups, with estimates that 2 million coffee cups are thrown away in the UK every day (Cuff, 2016). Many of the coffee cups used in high street coffee shop chains are those made with a polyethylene layer which makes them difficult to recycle, with only two facilities able to do so in the UK in 2016 (Rustin, 2016). While many consumers placed their coffee cups in recycling bins, in reality very few were recycled, because there weren't suitable facilities available to recycle them. There have been various developments around the issue of disposable coffee cups: from large coffee shops chains expanding their recycling programmes, establishing incentives for consumers to adopt reusable cups, establishing the paper cup manifesto an agreement between stakeholders in the industry to address the issue, and even schemes to turn coffee cups into other objects. The efforts to integrate coffee cups into a model more associated with the circular economy are still in their infancy, and there are a number of barriers ranging from cost of recycling initiatives, to resistance from consumers to change their coffee consumption behaviour.

Recycling Coffee Grounds

There have been multiple efforts to increase reuse of coffee grounds from small scale efforts in independent coffee shops, to businesses that base their model on this activity. There are businesses such as Grocycle, that have been built around using coffee grounds to grow mushrooms, and innovators who have created a coffee maker which uses spent coffee grounds to help grow mushrooms (Egerton-Read, 2016). One of the more well-known schemes for using grounds is Ground to Ground, established as a social enterprise, designed to educate people about how they can use coffee grounds, and provide them free to consumers to reduce waste (Pike, 2016). While initiatives like this are important, they are insufficient, as they are not used on a broad enough scale. This was recognised by Costa Coffee, one of the largest coffee shop chains in the UK, who have sought to find a
mechanism to deal with much larger volumes of waste, and have done so in a new partnership with the company Bio-bean (Cuff, 2016). Bio-bean is a clean technology company which takes coffee grounds to produce carbon-neutral biofuels; the first in the world to industrialise the process (Singhoff, 2015). Bio-bean aims to shift the coffee industry from a linear system to a circular one, recycling waste coffee grounds into renewable energy as part of an effort to implement cost-effective circular initiatives.

Towards a circular coffee shop economy?

These are just some examples of innovations in the coffee shop industry which are shifting practices towards a more circular economy than a linear one. Engaging in sustainable practices such as transitioning to a circular economy in the coffee shop industry is of vital importance, and increasingly recognised as such by the different stakeholders involved, from those involved in coffee farming to those who have to deal with coffee shop waste. As the number of coffee shops continues to rise globally it is likely that more large scale efforts to aid a shift towards a more circular economy will be needed, as well as the efforts taking place within individual businesses. This paper explores developments and innovations in activities in the coffee shop industry which begin to facilitate a shift towards a more circular economy, considering both facilitating and limiting factors. The paper suggests that in addition to investment of both time and money by businesses in the coffee shop industry, behaviour change from consumers is required to facilitate a more widespread shift towards the circular economy.

References


Egerton-Read, S. (2016) ‘These designers think that making coffee is the perfect time to grow mushrooms’. Circulate 18/07/2016. Available at:


In recent years notions of ‘sharing’ and ‘circular’ economies have emerged as new ways of moving towards sustainability. Alongside the rise of new values, trends and technologies these ideas are closely aligned through the joint focus on reducing and reusing scarce resources. In this paper we explore these connections through empirical material collected during research to examine the attempt to initiate a sharing economy in Kirklees in the north of England.

The marketing literature has tended to focus on the nature of the exchange of goods and services among participants of the sharing economy (e.g. Corciolani & Dalli, 2014; Scaraboto, 2015). The issue of ‘sharing’ has thus received considerable attention and critique (Arnould & Rose, 2016; Belk, 2016) with some claiming that the sharing economy isn’t about sharing at all (Eckhardt and Bardhi, 2015; Stokes et al., 2014) – an issue also raised by sociologists (Schor 2015). We contribute to this debate by focusing on the process of sharing to move beyond reified notions of sharing ‘subjects’ and ‘organisations’. Focusing on the issue of food waste and Kirklees Council’s attempt to foster sharing between local charities and supermarkets to reallocate wasted food to the increasing number people in ‘crisis’ (Trussell Trust 2013), we explore the emergence of ‘distributed responsibility’ and a ‘food waste discourse coalition... contingent on the involvement of supermarkets’ (Evans et al. 2017: 13).

In September 2014 Kirklees Council won €1m in the Mayor’s Challenge at Bloomberg Philanthropies in the US. The award was to help implement Comoodle, an initiative that envisages a revolution in the way public services are delivered via sharing. A key feature of Comoodle is the desire to stimulate the sharing of underused local resources in the form of ‘stuff, space and skills’ (Kirklees Council, 2015). During 2015 we conducted an ‘ethnographic
case study evaluation’ (Robson 2000) of three pilots set up to test initial Comoodle assumptions about sharing. Here we focus specifically on the pilot for space, which centred on the Welcome Centre in Huddersfield – a charitable organisation and food bank that provides food and other items to individuals and families in crisis.

At the time, the need for space was paramount if the Centre was to accept waste food donations from supermarkets. A short-term offer was secured from market services at the council, who agreed to share ‘space’ (cold storage) in return for ‘stuff’ (waste food) and ‘skills’ (from the centre). As an interviewee from the Centre stated: ‘What they’re offering is they provide us with space and... we in return, at no cost to them... provide a crisis support service for the people of Kirklees.’

The offer was withdrawn when other market traders complained about the Center getting something for nothing, yet supermarkets were neither approached nor offered to provide an alternative. Their role was a taken for granted assumption, which for us begged questions about the motivation and pressures to develop a sharing economy. This becomes all the more pertinent when we consider the vast amount of food supermarkets waste: last year Sainsbury’s donated 3,000 tonnes of food, just 7% of their surplus overall (Stuart and Jarozs 2017). Yet the benefits to Kirklees of getting this ‘sharing’ pilot to work – at a time when they were subject to massive funding cuts from central Government – were such that they felt compelled to pursue it.

Where does this leave us? Well, in their work on the politics of sustainability, Evans et al (2017) trace the changing discourses around food waste campaigning in the UK across two periods. The insights that emerge, are instructive, we argue, in this instance at least, for the light they shed on the attempt to construct a sharing economy.

In the first period (2007-2013) the involvement of a range of governmental and non-governmental actors in a new governmentality of food waste – linked to the publication of The Food We Waste report from WRAP (2008) – was a central theme. During this period, Evans et al (2017) argue that ethical responsibility was used to problematize everyday patterns of consumption and secure the responsibilization of consumers through a range of political (food waste) rationalities. An unintended consequence of this approach, they argue, was a growing awareness of food waste and subsequent calls for greater collective
responsibility, with food waste thus being recognized to be a systematic rather than an individual problem.

In the second period (2013-2015) Evans and colleagues show that ‘politics of blame’ underpinning supermarket waste strategies lessoned considerably as environmental debate – including an intervention by Pope Francis – increased awareness of food waste globally. However, they claim that the subsequent emergence of ‘distributed responsibility’ should not simply be seen as a ‘triumph of shared over individual responsibility’ (2017, 10). The emergent ‘food waste discourse coalition’ of governmental and non-governmental actors was still contingent, they argue, on supermarket participation, and on the individual consumer. Yet in this period the discursive focus was no longer simply about what the individual consumer could do to reduce food waste and enhance sustainable consumption, but on what supermarkets could do for the consumer.

In this context, as Evans et al (2017, 12) note, when it comes to food waste ‘the consumer’ is now used as a ‘rhetorical device to mediate the relationships between strategic and collective actors’. In is our contention that the notion of ‘sharing economy’ was used in a similar way in Kirklees to mediate relationships and find policy solutions to pressing local problems through engagement with the ‘food waste discourse coalition’.

What does this say about food waste, sustainability and the assumed links between sharing and circular economies? Well, if supermarkets really want to address the food waste problem, and move toward a circular economy, we conclude that they need to cut food waste at source rather than depending on charities and food banks (Stuart and Jarozs 2017). Sharing is potentially a useful adjunct to circular thinking, but as our analysis demonstrates, ‘sharing initiates’ are not always about sharing.

References


Belk, R. (2016) Accept no substitutes: A reply to Arnould and Rose, Marketing Theory, 16/1, 143-149.


Evans, D., Welch, D. and Swaffield, J. (2017) Constructing and mobilizing ‘the consumer’: Responsibility. Consumption and the politics of sustainability, Environment and Planning A, 0(0)1-17

Kirklees Council (2015) Comoodle Delivery Plan


Stuart, T. and Jarozs, D. (2017) Supermarkets should be cutting food waste, not relying on charities, Guardian 3rd February


WRAP (2008) The Food We Waste: Food waste report v2, Institute of Food Research
The democratization of luxury resulted in mass luxury in which luxury brands have extended themselves to affordable offerings (Cristini et al., 2017). Although luxury was long associated with the premium quality (Brun and Castelli, 2013), today the technical reproduction of luxury is indulged by mass-produced brands (Cristini et al, 2017). Commercial drivers have taken over and executives are increasingly seeking ways to transform creativity into profitability. The new luxury paradigm of accessibility challenges not only sustainability but also operational aspects. The reputation of the luxury industry suffers from consumer concerns over poor labour standards in production, blood diamonds, irresponsible gold-mining practices and animal cruelty in global production networks (Hennigs et al, 2013; Moore, 2011). However, the traditional linear economy of constant consumption of natural resources and sales driven by built-in obsolescence is seen as unsustainable (Deeper Luxury, 2016) and ethical aspects are becoming increasingly critical for luxury fashion success (Brun and Castelli, 2013). We therefore question how and to what extent luxury could play a positive role in our mass-consuming generation to slow down the pace for materialism and better implement sustainability in globally dispersed production networks.

Globalisation has led to increasing outsourcing of production by fashion companies to a network of suppliers and sub-contractors. The industry is characterized by shorter product life cycles and highly volatile market demand (Choi, 2013) alongside downward price pressure, international sourcing, high product variety and low predictability (Perry and
Towers, 2013). There is also a potential conflict between corporate responsibility and overarching commercial pressures (Perry et al., 2015). Luxury fashion companies must therefore acknowledging resource scarcity and other sustainability issues, and take collective actions for an authentic shift to create unique and sustainable businesses. To be profitable and sustainable, “luxury companies must adjust their definition of excellence that is no longer associated with shallow glamour but with positive engagement and deeper values” (Hennigs et al, 2013, p.33). The product integrity of luxury fashion products (Fionda and Moore, 2009) suggests greater product durability and timelessness, which support the principles of design for longevity and purpose in the circular economy, as evidenced by Saint Laurent’s Permanent Collection and watchmaker Patek Philippe’s marketing slogan “you never actually own a Patek Philippe, you merely look after it for the next generation”. Repair services offered by luxury brands such as Hermès help to extend the useful life of luxury products. However, a company is no more sustainable than its supply chain (Andersen and Skøtt-Larsen, 2009), and social and environmental performance of suppliers is an area of mounting concern. Collectively, sufficient coordination between supply chain partners is greatly needed, but many small and medium-sized suppliers encounter challenges in responding to environmental pressures due to limited capabilities and available resources (Lee and Klassen, 2008), with the most critical environmental and social issues in supply chains generated by suppliers located in the second tier or further upstream (Tachizawa and Wong, 2014).

Sustainability has been interpreted in a variety of ways, ranging from a philosophical perspective to business management approaches (Ahi and Searcy, 2013), but more research is needed to show more than how to be ‘less unsustainable’. Traditional business research must go beyond studies focusing on profit with a rather short-term orientation and instead embrace components of how to create truly sustainable businesses. Thus, the following research questions were formulated to investigate the phenomena of social and environmental sustainability at supply chain level within the luxury context, in order to further explore the connections among product design, production processes and supply chain stages.

RQ1: How do luxury fashion companies integrate sustainability into their supply networks?
RQ2: How do contingent factors impact sustainability integration in luxury fashion supply networks?

RQ3: Which behavioural patterns could be used to develop a sustainable supply chain configuration for the luxury fashion industry?

Qualitative case studies of two Italian supply chains producing luxury silk and leather goods, encompassing 10 companies, were conducted in 2015-16 with data gathered from semi-structured managerial interviews. The interview topic guide was developed from the literature review, and the theoretical constructs underpinning the interview protocol were then used to create an initial coding scheme for data. Findings revealed seven key categories by which luxury fashion companies integrated environmental and social sustainability into their operations:

Category 1: Sustainable product design

Category 2: Operations management

Category 3: Performance measurement

Category 4: Sourcing management

Category 5: Decent work and labour management

Category 6: Commitment to sustainability and organisational perceptions

Category 7: Longevity of suppliers.

Natural resource scarcity was acknowledged by all companies and a number of operational practices occurred to support key aspects of circular economy in terms of waste reduction and to address resource depletion, security and scarcity. These included use of eco-friendly materials, hazardous chemical elimination, textile waste reuse, and were applied to the fashion design stage with an attempt to mitigate the environmental impact of subsequent operations. Water emerged as a significant area where companies implemented incremental techniques, including natural tanning, on-site wastewater treatment, water purification and water reuse. However, the complexity of global luxury fashion supply chains brought complications. Both supply chains showed that there was lack of knowledge about products’ production history. Due to globalisation, countries with low operational costs
appeared to leverage their competitive advantage. High product variety and fragmentation of the production network made it difficult for companies to ensure full traceability. Correspondingly, it became clear that sustainability management required strong organisational commitment for which an alignment between financial and non-financial goals was imperative. Companies asked their supply chain partners to become sustainable for two main reasons: (i) to make the chain stronger, and (ii) to jointly learn and improve performance. Long-term relationships and supplier stability helped to cultivate trust, which resulted in advanced organisational and operational performance improvements. Supplier engagement and collaboration associated with knowledge dissemination further enabled companies to improve sustainability, and lastly innovation capabilities were imperative.

References


From pirate islands to communities of hope: Reflections on the circular economy of food systems

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Keywords: circular economy, food system design, principle, typology

Mounting evidence on the negative impacts of conventional agriculture illustrates the need to re-think how we grow, process, sell, eat, and dispose of food. Today, agriculture is the leading driver of deforestation and forest degradation globally, a process that accounts for a 17% of global carbon emissions. Furthermore, 19–29% of global greenhouse gas emissions are directly attributed to agriculture (Vermeulen, Campbell and Ingram, 2012). Given this, business as usual is not an option (IAASTD, 2009).

Conventional production is defined by large-scale, highly industrialized agriculture that is further marked by six dimensions: centralization, dependence, competition, domination of nature, specialization, and exploitation (Beus and Dunlap, 1990). It is clear that conventionally-designed food systems have provided unprecedented growth in agricultural productivity, advanced an abundance of technologies and infrastructure dedicated to food production and distribution, and in so doing have generated wealth and generous returns on investments for several food system actors. However, despite its promise, the current model of conventional agriculture, and related markets and distribution mechanisms, have proven unable to feed the world in a safe, sustainable and just way (FAO, IFAD and WFP, 2015). One key reason is that they are designed in a linear way. In conventional linearly-designed food systems, natural resources are extracted, made into products (food, feed or fibre), consumed and disposed of, generating waste, detrimental emissions and pollution (Braungart, McDonough and Bollinger, 2007). It is for this reason we argue that linearly-designed food systems have heavily contributed the 21st century food crisis. While linearly-
designed systems can be highly resource efficient, the drive to standardise and simplify leads to overreliance on a few productive varieties and an over-dependency on external inputs, including biological materials. These systems are supported by a set of technological and institutional assumption, principles and practices which result in the creation of waste and reduction of diversity. Linear food systems are also designed to be highly specialised, for example to separate production from distribution, in turn disconnecting use of materials from the places they have been produced and distributed.

Within the constraints of a linear approach to food production, distribution and consumption, there have been several attempts to tackle key challenges and limitations (Braungart and McDonough, 2002). For example, environmental degradation and climate change connected to conventional food activities have been addressed through assessment of the impacts of those activities through approaches like life cycle assessment (LCA), the carbon footprint, and eco-efficiency (Verfaillie and Bidwell, 2000; Braungart, McDonough and Bollinger, 2007). These approaches are all, in one way or another, concerned with using less resources and producing less emissions. These approaches attempt to minimize the speed, toxicity and volume of material flows, but fail to challenge, let alone, reimagine the linear approach and disposal of materials at the end of the life cycle (Ghisellini, Cialani and Ulgiati, 2016). To better understand what we mean, let us consider in more detail the example eco-efficiency. From an economic point of view, eco-efficiency can result in a short-term cost reduction as a result of using fewer materials. However in the long(er) term, eco-efficiency implies socio-economic growth at the expense of the environment (Braungart, McDonough and Bollinger, 2007). Indeed, a key limitation of eco-efficient approaches to enhanced sustainability is that (harmful) waste and negative impacts on the environment remain an outcome of the production process (Braungart, McDonough and Bollinger, 2007).

Reflecting on these approaches brings us to the conclusion that moving away from conventional linearly-designed food systems requires more than adaptation: it necessitates re-imagining and re-designing conventional food systems. But, how do we design our way out of a system that has a destructive impact on health and ecosystems (Lang, 2003; Stuckler and Nestle, 2012; Booth and Coveney, 2015)? Where do we start? We propose to start by addressing how food systems are designed. The problem we focus on in this chapter
thus lies less in the industrial nature of conventional food systems, and more in the way that they have been designed.

To address the limitations of linearly-designed food systems, we draw inspiration from the cyclical metabolisms of circular economy (Ellen McArthur Foundation, 2013). In what follows we introduce the guiding principles of circular economy and discuss how they can help in re-imagining conventional food systems. We then present different cases of circular food systems and present a typology to support classification and analysis. We base typology on two key features emerging from the analysis of the cases, namely whether they operate at in isolation (e.g. alone) or in collaboration with others, and whether they are inspired by and foster technological or social innovations. The result is four classification categories: Islands of Pirates; Spiders in the Web; Towns of Renaissance; and, Communities of Hope. The typology is then employed to help us depict the main tensions, ambiguities, and potentials emerging from the different practices of circular food systems. In the concluding section, we identify key points for discussion and highlight topics for future research.

References


Minimalism as sustainable fashion

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Minimalism is an increasingly popular lifestyle choice that involves reducing the number of possessions owned to a bare minimum of objects that are either pragmatically useful or emotively highly treasured. The various strands of minimalism are multifaceted, with elements including, but not limited to: decluttering and reducing one’s possessions, treasuring experiences rather than material possessions and purchasing with the intent of quality over quantity. The facets of minimalism closely mirror those of ‘voluntary simplifiers’, who can be defined as ‘individuals who have freely chosen a frugal, anti-consumer lifestyle that features low resource use and environmental impact’ (McDonald 2006: 516). Voluntary simplicity is seen to made up of two central facets; attempts to accumulate less possessions (minimal consumption) the de-cluttering of what is already owned (material simplicity) (Johnston and Burton 2003). Through the ‘reduced material consumption and the removal of clutter from one’s life’ (Ballantine and Creery 2010: 45) voluntary simplicity is ultimately based on the premise of having less (material objects) but having more (in non-material terms) (Huneke 2005, McDonald 2006).

This study considers minimalism as a new form or ‘brand’ of voluntary simplicity in western culture that has gained increasing recognition as a reaction to excessive consumption in a time of ‘peak stuff’. The rise of social media has further enabled its appeal due to the rise of online minimalist ‘advocates’ who run blogs and YouTube channels offering advice on how to reduce excessive consumption and share their own experiences of being a ‘minimalist’. Perhaps the most prominent example is the self-defined minimalists; Joshua Fields Millburn and Ryan Nicodemus, whose blog ‘The Minimalists’ has over 4 million readers worldwide. The mass popularity of the Japanese decluttering book ‘The Life-Changing Magic of Tidying Up’ (which has sold more than 6 million copies worldwide) is further indicative of a current cultural zeitgeist for ‘living with less’. The author Marie Kondo’s ‘KonMari decluttering method’ encourages people to rid their homes of objects that do not ‘spark joy’. Although not specifically self-defined as a minimalist movement, by encouraging readers to reduce
their possessions and only keep those with a high personal value, it significantly echoes the minimalist sentiment of ‘having more with less’.

Minimalist fashion has become one of the key elements of the minimalist movement with a rise in minimalist fashion bloggers promoting the value of reducing one’s wardrobe to a bare minimum of essential items (or a ‘capsule wardrobe’) with few, quality items that coordinate. Emphasis is placed on timeless/classic fashion looks, as opposed to fast fashion trends and there is a preference for simple, complimentary colour palettes and versatile pieces. Minimalist fashion vloggers share videos of their own downsized capsule wardrobes and share tips and advice on how to create one (which are the antithesis to ‘haul videos’ in which vloggers show off their newly acquired purchases, fresh from their shopping bags, to their viewers). Minimalist ‘fashion challenges’ have also gained increasing momentum (Wu, Boyd Thomas et al. 2013). Project 333, started by minimalist blogger Courtney Carver of ‘bemorewithless.com’, instituted a challenge to dress in just 33 items over 3 months, a challenge which was popularly up taken across social media. Similarly, ‘Labour behind the Label’ (a charity campaigning for the rights of garment workers) instigated the ‘6 item challenge’ in which participants are challenged to wear only 6 items of clothing over 6 weeks. Such challenges are intended to reduce the need (or desire) for large quantities of clothes and to promote a steer away from fast fashion. Collectively the sentiments of minimalist fashion and fashion challenges speak to a rejection of conspicuous fashion consumption (Veblen 1899) towards a more considered or ‘calculated’ consumption (Wu, Boyd Thomas et al. 2013) but one with a fashionable and stylish edge. Minimalist fashion may therefore be re-branding ‘cutting back on consumption’ from an undesirable form or miserly, traditional frugality (or a radical anti-consumer/anti-capitalist movement), to a desirable, ascetically pleasing and fashionable lifestyle choice which could therefore popularly promote sustainable consumption practices.

Minimalist fashion consumption supports the notion of the circular economy because the focus on garment quality, rather than quantity, would suggest that clothes are carefully valued and maintained throughout their life-cycles, in order for them to last longer. Yet, ultimately, minimalist fashion’s focus on not acquiring excessive/unnecessary garments, reduces the number of potential products in circular economy lifestyles all together. Minimalist fashion could therefore be seen to be treating the cause, rather than the
symptoms of excessive fast-fashion consumption in which the cycle of consumption, use, disposal and re-use is not started in the first place. Therefore, the rise in popularity of minimalist fashion and its potential to encourage more sustainable consumption practices renders it an important area of empirical and theoretical attention.

There are three central aims of the project. First, the project will conduct interviews with participants in fashion challenges to uncover if their experiences of the challenges may result in more sustainable fashion consumption in the longer term. An auto-ethnography of my own participation in the ‘6 items challenge’ will also be carried out to add an additional dimension to this facet of the project. Second, interviews will be conducted with minimalist fashion practitioners including: those interested in minimalist style and aesthetics, those concerned with sustainability and those for whom minimalist fashion is a financial necessity (as opposed to a fashionable lifestyle choice). This is with the intention of uncovering the everyday practices of, and the motivations behind, practicing minimalist fashion in order to mobilise this knowledge to promote minimalist fashion and more sustainable fashion consumption. Third, it will explore the ways in which social media (such as websites, blogs, you tube and Instagram) provide ways in which people share their minimalist fashion lifestyles and how this potentially enables the sharing of knowledge that encourages reduced fashion consumption. Ultimately the project seeks to explore the ways in which minimalist fashion practices may encourage more sustainable fashion consumption and subsequently how such practices can be shared with a wider audience.

References


Where’s the role for citizens in circular transition cities?

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A working circular economy (CE) could be the answer to the world’s resource problems. A recent report (McKinsey 2015) estimates that the market opportunity for CE will be worth €1.8 trillion by 2030. Research relating to the role of circular in cities has gone a long way towards engaging government and business in focussing on efficiencies and the benefits to be gained from reducing waste however, most research does not engage citizens beyond the role of local government and this represents a limitation to progress, especially given the increase in availability of accessible technology supporting a move towards a “prosumer” society. Furthermore the rise of urbanisation coupled with the fact that cities are resource inefficient (Agudela-Vera 2012) has given rise to the emergence of circular transition cities such as, Amsterdam, Peterborough and Boulder. It would therefore be helpful to develop a better understanding of the role that citizens and not just city governments can play in a city achieving a transition to circular.

This paper examines the strategies and policy actions that drive grass roots citizen driven social practices and innovations in cities in order to gain insight into the role that citizens could play in the development of circular transition cities in the UK.

The paper will draw on observations from a twelve month literature review of the societal aspects of a Circular Economy and includes observations from a review of city government and anchor institutions such as, regional development agencies, policy and investment strategies for supporting grass roots innovation and community based approaches to tackling challenges such as digital exclusion and the ageing population. For example the Global Network of Age Friendly Cities, supported by the World Health Organisation promotes a bottom up, citizen driven and social mobilisation approach to developing age
friendly cities. Age friendly cities all have in common their commitment to putting citizens at the centre of bringing together local government, health providers, business and NGO’s in order to develop cities that provide the type of environment that is conducive to enhancing quality of life as people age. In an age-friendly city, policies, services, settings and structures support and enable. People to age actively. Through the lens of this and other similar citizen centric successful examples the paper provides insights into the role that citizens could play in developing circular transition cities.

Observations from the literature review, desk based research and existing scaled examples (such as the Global Network of Age Friendly Cities) of citizen engagement in tackling other societal challenges suggests that in order to achieve the next phase of development of CE, we need to look in depth at specific examples of citizen engagement in circular economy that are already in operation locally. From this the authors suggest that we may develop an understanding of how scaled up and empowered participation and activism within circular economy could support the development of circular transition cities.

However before developing an understanding of how this might be achieved at scale it is firstly necessary to develop an understanding of the nature of this type of activity at the hyper-local or city level. The paper therefore refers to a more in depth case study of Fab Lab Coventry, a digital fabrication Laboratory in the city centre of Coventry. Fab Lab Coventry is a not-for-profit partnership between Coventry University, Coventry City Council, the University of Warwick, and numerous other partners from both the public, private and charity sectors. The lab has opened up a repair café and runs regular workshops on the use of local manufacturing techniques and approaches.

Having explored the case study of Fab Lab Coventry it becomes evident that there is a strong connection between the citizen driven activity within spaces such as Fab Lab Coventry and the ecosystem that surrounds such spaces. At the city level it is these local ecosystems (citizen groups, universities, NGO’s, SME’s and others) that have the ability to both transcend and bring together the related issues that exist between nature, climate change, contemporary society and consumerism. To this end the paper advocates the role of spaces (and their respective ecosystems) such as Fab Lab Coventry to engage citizens in CE and in the development of circular in the cities in which they live. However to achieve
this we need a city level coherent strategy of change that advocates the role of citizens and of such spaces in engaging citizens in CE.

In response to this the paper further examines how the digital fabrication lab concept fits with the CE city concept, examining the role that citizens engaged in digital fabrication labs can play in developing CE practices, projects and enterprises. From this the paper reviews in depth the role of Fab Lab Coventry in supporting its city’s transition to circular.

The paper concludes with recommendations for further evidence on the financial and social impact of citizen driven CE activities in digital fabrication labs and similar community spaces. To transition Coventry to a Circular City the paper concludes that the community fab lab may be too early, not big enough and lacking in sufficient socio-economic evidence of impact to merit sufficient local policy change towards investment in larger scale citizen driven CE innovation.
Tacit knowledge transfer mechanisms to support industrial symbiosis opportunities identification

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Industrial symbiosis can be defined as the concept of engaging “traditionally separate entities in a collective approach to competitive advantage involving physical exchange of materials, energy, water, and by-products” (Chertow, 2000). These exchanges of otherwise wasted resources are key for closing resources loops at industry level and thus, are enablers of the Circular Economy. Therefore, industrial symbiosis prompts companies to think of their waste as a potential valuable input to other companies (Wells, 2013). The benefits of industrial symbiosis applications can be manifold, with clear environmental implications related to reducing the consumption of virgin material and energy inputs to industrial processes, and likewise their generation of waste and emissions (Sokka et al., 2011), while having additional economic benefits to the individual companies involved and the communities, regions and economies of which they are part.

Different challenges and enabling factors for industrial symbiosis emerge at each stage within the IS development process. Heavily influenced by contextual factors, a generic development process can be described as an iterative sequence of five stages: (i) opportunity identification; (ii) opportunity assessment; (iii) barrier removal; (iv) commercialization and adaptive management; and (v) documentation, review and publication (Grant et al., 2010). Main challenges at the initial stage of opportunity identification have been identified as the lack of taxonomical classifications or common language for potentially exchangeable resources (Grant et al., 2010) and the lack of technical and regulatory capabilities (Baas, 2008) e.g. understanding the maturity of the relevant technology for a needed treatment before the potential reuse.

This research work concentrates on the challenges at this initial stage, as possible strong gate-keepers for the initiation of the development process for industrial symbiosis. It has been suggested that this initial stage can largely benefit from the creation of knowledge repositories, as they can enable information exchange between companies from similar industrial sectors as well as cross-sectorial knowledge transfer (Grant et al., 2010). This could enhance the business capacity to generate ideas for industrial symbiosis applications. Following a practitioners’ focused analysis of industrial symbiosis literature (Holgado et al., 2016), a proposal for a knowledge repository has been defined and tested within the scope of a collaborative research project with research partners, to obtain further insights into
repository structure, and with four initial testing cases, to understand the actual benefits for future users.

Over the last years, different entities (public, private, research institutes or consultants) have attempted to create databases that could support industrial symbiosis implementation, but they are usually extremely focused on explicit knowledge content. One of the main difficulties in designing knowledge repositories is to find an effective way to include tacit knowledge content as well as explicit knowledge content. Collecting, categorising and standardising tacit knowledge, to make it available and easily usable, is generally a complex process. Indeed, waste materials are typically nonstandard or highly variable in composition and volumes, thus the process of exchanging them can be extremely complex and context-related, therefore, requiring tacit knowledge (Cecelja et al., 2015). However, there are clear benefits suggested from the inclusion of tacit knowledge in repositories. It could help avoiding practitioners’ biases towards their own expertise or a limitation to particular industries they wish to serve, by informing them about new and unexplored potential synergies as well as required associations, know-how expertise and engineering solutions. Thus, tacit knowledge offers tremendous opportunities to enable industrial symbiosis networks (Chertow, 2004; Desrochers, 2004).

Our proposal for a repository to support industrial symbiosis focuses on capturing the potential improvement ideas and opportunities for new symbiotic exchanges based on tacit knowledge from current feasible or implemented cases of industrial symbiosis. It has been created in the form of a library of case studies. Each case is described in the library following an established structure. The knowledge from the cases is extracted and categorised into five different sections. This categorisation improves the usability of the repository, facilitating the general understanding of the case and improving the search for specific aspects of practitioners’ interest.

A narrative of the case description is followed by the five sections gathering tacit knowledge. Triggering and precondition factors are collected to describe the main business challenge that was addressed (the starting point for the search of a solution) and the antecedents that made the symbiotic exchange feasible under the described business context. The main barriers encountered in the specific industrial symbiosis implementation are described, as well as the approach used by the individuals / organisations involved in order to overcome those barriers. Then, the discovery process (the process initiated by the triggering factors and finalised by the realisation of the symbiotic exchange) is explained, highlighting the main steps and efforts made by the involved individuals / organisations. This includes the description of role of facilitators, whenever applicable.

The library of case studies has been populated using publicly available source of information, identified using academic databases (ScienceDirect, Scopus), scientific search engines (Google Scholar) and general search engines (Google). The use of the latter allows to take into account whitepapers and industrial presentations other than scientific papers,
thus including into the knowledge repository also simple but effective forms of industrial symbiosis that may have been left out of academic research. The 39 documents found in this search include the description of 46 different case studies, set in 16 countries across the world (28 in Europe, 12 in Asia, 4 in America and 2 in Australia). It provides a wide over-view of different contexts in which industrial symbiosis has emerged so far.

The development of this repository aims at fulfilling a gap previously identified on the lack of supporting tools to identify, at early stages of ideation, the available opportunities for industrial symbiosis (Holgado et al., 2016). Further research includes the analysis and comparison between cases in order to extract valuable information on how the contextualisation in the discovery process can be facilitated to enhance the application of an industrial symbiosis approach. This will provide additional support to practitioners in later stages, i.e. industrial symbiosis design and planning.

References


New Food System for Minimising Consumer Food Waste

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Consumer food waste analysis

Globally, one third of food produced is never consumed. In high income countries, consumers waste as much food as the whole production of sub-Saharan Africa (FAO, 2016). This reveals that the current consumption pattern in the industrialised countries are unsustainable which necessitates the development of strategies, technologies and supporting tools that should foster more efficient consumption.

This research focuses on preventing Consumer Food Waste (CFW) generated in the United Kingdom (UK) as a representative of a developed country. Prevention of food waste is considered to be the best option of the five-step waste management hierarchy (European Commission, 2012) as it aims to avoid unnecessary consumption and maximise resource efficiency. In the UK, 72% of post-farm food waste is generated by consumers (Figure 1) of which 78% is estimated to be avoidable or possibly avoidable (WRAP, 2017).
Studies analysing CFW reveal that there are numerous reasons for why consumers waste food (Evans, 2011; Stancu et al., 2016). These reasons relate to actions and decisions taken by consumers during food purchasing, storage, preparation and consumption stages, which are affected by different factors ranging from individual habits to retail activities (Quested et al., 2013). Hence, formulating a solution that could lead to a substantial reduction of CFW is considered to be challenging. Other quantitative studies have revealed that the main direct causes for CFW in the UK are not consuming food products and meals in time as well as cooking or serving more food than needed (WRAP, 2013a). Clearly, the main reason for waste of different types of food depends on the specific food category and product.

Historically, CFW has been mainly analysed in terms of its mass and cost. This has helped to identify the most wasted food products and categories as well as to assess the monetary saving that could be associated with wasting less. The results of these analysis studies are crucial in directing the formulation of adequate solutions through targeting highly wasted products and using cost saving to engage consumers to be more efficient and waste less. This current research builds on the existing body of waste by also focusing on analysing food waste in terms of environmental impact in order to identify food products and categories with the highest ramifications. Reducing the waste of two different products by the same
mass is likely to have different environmental benefits (e.g. product embedded energy in 1kg of beef estimated at 51MJ in contrast to 5MJ embedded in 1kg of apples (WRAP, 2013b)).

**Preventing consumer food waste**

Manufacturers and retailers have an important role in supporting the minimisation of CFW due to the strategic position they hold in controlling the flow of food products from producers to consumers. Moreover, CFW is believed to be a consequence of an inadequate food system that is based on oversupply and consumerism (Lang, 2013; Aschemann-Witzel et al., 2015). This can be seen in the small salary share spent on acquiring food which is effectively cheap enough to waste. Therefore, it is necessary that food providers build more collaborative and value-adding relationships with consumers in order to address the CFW issue.

Working in partnership with consumers is believed to support the integration of the food system by bridging the gap between food production and consumption. To achieve this, this current research proposes to improve the existing food provisioning system to design a more sustainable Product Service System (PSS) that should encourage minimization of CFW. Based on a modified version of the Methodology for System Design for Sustainability (MSDS) as described by Vezzoli et al. (2014), the design of such system should be achieved via: (1) strategically analysing the existing UK food provisioning system in terms of its capabilities that could be exploited to facilitate reduction of CFW, (2) identifying system level opportunities that could result in a significant reduction of CFW, (3) designing the PSS that should lead to the most favourable environmental, economic and social impacts, and (4) assessing the designed PSS in comparison to the current food provisioning system in terms of CFW reduction.

This new PSS should enable food providers to change their operations and activities particularly related to food production and distribution with the objective of meeting consumer demand while fostering more sustainable consumption. In addition, it will also be possible to provide consumers with necessary information that could influence their buying and consumption behaviour. Finally, this system level change should enable food providers
to support consumers throughout the entire food provisioning process (from purchasing to actual consumption) so that consumers generate less food waste.

References


Session 4.5

The relationship between consumer attitudes and product development for clothing longevity

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Introduction

The production, distribution and disposal phases of the clothing life cycle all create environmental impacts, but life cycle assessment (LCA) has found that extending garments’ active life (via design, maintenance and re-use of clothing) is the most effective method of reducing the impact of the clothing industry on the environment. This study aims to explore the behavioural and strategic obstacles to implementing innovative and sustainable product development processes that could encourage consumers to prolong clothing longevity at the micro scale. It will also help to identify and develop the knowledge, skills, processes and infrastructure that could support wider adoption of design for longevity in industry at meso and macro scales. Product longevity has a significant part to play in minimising environmental sustainability impacts. Extending the average life of clothes by three months’ usage per item would reduce carbon, water and waste footprints by 5-10%, thus leading to savings of billions for producers and consumers (WRAP, 2012; McLaren et al, 2015). However, the clothing business clearly thrives on innovation and the creation of
obsolescence, thus appearing to be incompatible with the notion of keeping clothes for an extended period of time. This contradictory situation is explored within our paper.

This research has been conducted by an interdisciplinary team from schools of Business and Art & Design. At the end of the study, feedback from consumers will be disseminated to the clothing industry, alongside an information package to facilitate design for clothing longevity.

**Literature Review**

If the usable life of clothing can be increased, leading to less frequent replacement, fewer garments can be discarded, with a lower number of resources being consumed in clothing manufacture (Cooper et al, 2013). There are various approaches that brands and retailers can take in order to enhance product longevity. For example, knitwear label ‘Keep and Share’ designs garments in styles that do not follow mainstream fashion trends, and which can be offered for hire, with the aim of making them wearable for longer than ordinary garments (Goworek et al, 2012; Keep and Share, 2015).

During design and production, longevity can be built into clothing in various ways such as classic styling, strengthening seams or using durable fabric and components (Cooper et al, 2010; Goworek et al, 2012). Although fast fashion has contributed to the trend towards a throwaway approach by consumers (Barnes and Lea Greenwood, 2010; Birtwistle and Moore, 2007), research has identified more recently that there is a level of demand for clothes that last longer (WRAP, 2012). Consumers inevitably display variable behaviour in determining when clothing is ready to be discarded, since they may have different criteria affecting their decisions about the point when garments are no longer usable (Bide, 2012:126). Clothing may often be disposed of before the end of its useful life because consumers have become tired of it or it is perceived as being out-of-date (Cooper et al., 2013; Laitala & Boks, 2012; YouGov 2012). Consequently, WRAP (2012) proposes a higher rate of re-use in the UK as a preferable method of increasing clothing’s life-span. Garments can be recycled with the support of local government services, private companies and, more recently certain brands and retailers, such as H&M and Patagonia (Ekström, 2015). It would therefore be beneficial to increase consumers’ awareness that all used textiles are of value, to raise the level of repurposing.
Methodology

The study took an exploratory approach using mixed qualitative research methods to investigate consumer perspectives on clothing longevity and explore everyday processes and practices of clothing use. Focus groups were carried out with 29 participants in three consumer segments, identified as priorities for research into clothing longevity by Langley et al (2013). Ethnographic research was also conducted to gather insights into everyday garment care practices via consumer clothing diaries. In addition, in-depth interviews and round-table discussions were conducted with garment industry stakeholders from fashion retail and the supply chain, with four round-table discussions, engaging 40 multi-disciplinary academic and industry experts.

Findings

The results showed some level of willingness for consumers to purchase longer-lasting clothes, supporting the findings of Langley et al (2013). Generally, value for money was the most important priority for all groups when purchasing clothing. Longevity was considered within this implicitly, as consumers want garments to last a reasonable lifetime in relation to their expectations, which were influenced by where it was bought, how much they paid for it, its care requirements, the type of material, and considerations of its purpose/context, e.g. for work wear. One of the most direct ways of enhancing clothing longevity would be to purchase second-hand clothing. Those participants who were trend-driven would pass on or sell clothes before they wore out, with a hierarchy of disposal methods, so that they could find replacements and keep up-to-date.

The findings from industry confirm that sustainability, rather than clothing longevity, is important to most retailers, who address raw material impacts, energy efficiency and ethical compliance, imposing improvements and regulations throughout the supply chain, from their power based organizational logic. Rarely is the adoption of new design approaches prioritised, since extending the longevity of garments challenges other commercial objectives, including price and future sales.

Conclusion
The research findings showed that numerous factors affect clothing longevity from the consumer’s perspective. These factors can influence design practice in the fashion industry and could also be applied in other industries. Designers and consumers can influence each other at micro and meso scales, and this iterative process can potentially lead to improved clothing longevity. Various barriers to designing products for longevity should be investigated to meet consumer needs, particularly two key issues. Firstly, there is pressure on the new product development (NPD) process to design products quickly and cheaply, thus leaving limited time and resources to consider longevity. Secondly, designers may lack information about consumers’ perspectives on clothing longevity, which does not enable them to be considered during the design process. Management support and a toolkit of relevant guidelines for fashion designers would be enabling factors in facilitating design for longevity, to better meet consumer needs.

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Keywords: Sustainability, consumer perspectives, fashion, product development

References


The fashion industry is the second largest polluter after the oil industry (Conca 2015) and has in recent years received increased negative spotlight attention through the Rana Plaza accident, rivers that turned red in China, and sweatshop allegations – even in developed countries such as the UK (Parveen 2014; Matthews 2015; Dispatches 2017). This bleak backdrop is further enhanced with approximately £140m worth of clothing and textiles being discarded in landfill annually (WRAP 2017). These facts and figures have led to an outcry not only from consumer side, but also from governments and key industrial players.

Yet a new horizon is on the rise: the circular economy addresses various challenges faced by the fashion industry in that business approaches and models of operation are increasingly changed to be more ‘sustainable’. (Sustainable in this research links to Elkington’s (2004) Triple Bottom Line and comprises of social, environmental, and economic aspects). The fashion sector since has seen dramatic changes in its industry landscape: what has previously been seen as waste material is now classified as a new resource. To explain, instead of filling up landfill sites, unwanted garments are either reused, which implies that pre-loved items have an extended life cycle, or garments/textiles are dismantled into their original raw material components, with yarn being spun and new products being produced using ‘old’ materials (e.g. Circular Fashion 2017; WRAP 2017).

Access based consumption is part of the circular economy approach as it extends the use of pre-loved and pre-owned garments and although it is not a new phenomenon per se, but
rather has received increased interest in various industries (e.g. housing, car rental) (Bardhi & Eckhardt 2012; Catulli et al 2014; Jenkins et al 2014; Schäfers et al 2016), it is relatively new within the context of the fashion industry. Access based consumption implies temporarily being able to use and experience a good or service without making a transaction that transfers ownership of said goods or services (Bardhi & Eckhardt 2012). Various business models have emerged under the umbrella term of access based business models, including, but not limited to ABC models, which focus on renting/leasing products for periods of time and Product Service Systems (PSS), which links to swapping activities.

In the fashion industry, companies following an access based consumption model are predominantly micro-organizations, which tend to be under researched (Henninger et al 2017). Reports (Wosskow 2014; Hyman 2016) indicate that the UK is in its early phase of adapting access based consumption models in the fashion industry. Rent the Runway is an American avant-garde company of access-based consumption – users have rented $300m of clothes in the first half of 2014 alone and the company is currently valuated at $600m (O’Connor 2016).

With access based consumption still being relatively new (especially in the fashion context) and thus, lacking research, this article investigates in how far access based consumption is communicated to stakeholder groups and how the message received is encoded by the target audience. The underpinning theory of this study is based on Integrated Marketing Communications, which has received increased importance, with a recent special issue in the European Journal of Marketing being dedicated to the topic. IMC focuses on the interconnectivity of offline and online platforms, the latter is vital for micro-organizations, which – due to their financial constraints – are dependent on free online communication media, such as Facebook, Twitter, and Instagram.

This research contributes to knowledge by investigating IMC in the context of fashion micro-organizations operating through access based consumption models. If change is to be achieved in that access based consumption as part of the circular economy becomes more mainstream, it has to be clearly communicated, which is why this research is of great significance.

References


Exploring the spectrum of Fashion Rental

Amira Battle, University of Manchester

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Access based consumption, or renting, has been identified as a possible method for encouraging more sustainable fashion consumption. Sustainable fashion consumption can relate to buying clothes that are ethically made, purchasing second-hand, participating in swapping, and/or implementing the slow fashion philosophy. Some sustainable fashion alternatives tend to be perceived as more expensive than high street alternatives which can be a deterrent for some individuals (Henninger et al., 2016). However, access based consumption can allow people to gain access to products that would have been otherwise unattainable (Cook and Hodges 2015). Thus, combining these two concepts may result in a more sustainable model for fashion consumption where consumers can either rent or swap their fashion items and thus contribute to the circular economy (Armstrong et al., 2015).

Moeller and Wittkowski (2010) found that price-conscious, environmentally aware, and experience orientated people are not yet ready to adopt renting fashion and Armstrong et al. (2016) found that people do not see the reasoning behind renting clothes for everyday wear. With the growth of the sharing economy, companies like Rent the Runway, Air B 'n' B, and fashion libraries, one must ask if a luxury approach to renting fashion is the only viable model for fashion rentals.

Researchers have been discussing the motivations and obstacles perceived by individuals to using access based services in contexts such as car sharing (Bardhi and Eckhardt, 2012) and baby products (Catulli et al., 2013). Researchers such as Moeller (2010), Armstrong, Niinimäki, and Lang (2016) have begun extending this research into clothing by identifying the motivations and obstacles that fashion consumers perceive when using access based services.

Several gaps exist in access based consumption such as the propensity of consumers to participate in different types of access based models and also the likelihood of retailers to adopt these models (Perlacia et al., 2016); consumer perceptions of sharing in different contexts; and co-designing access based services for the future (Armstrong et al., 2015).
Furthermore, existing research calls for the development of a consumer-centric, practice based approach to designing access based services (Antikainen et al., 2015; Armstrong et al., 2015; Edbring et al., 2016).

Current literature on access based clothing consumption finds that consumers are only interested in renting luxury or ‘one off’ pieces clothing and not everyday clothing whereas the same does not apply to other types of renting. Thus, this paper aims to explore access based clothing consumption from a consumer perspective to identify if there is a middle ground between renting luxury and cheap fashion items. This paper will focus on product service systems (PSS) specifically the user-orientated service of renting clothes.

This project utilises a practice based approach to explore what fashion products consumers would like to rent and their reasoning behind doing so. This article further investigates how product type influences the acceptability of renting fashion. To conduct this study, a quantitative approach is implemented using already validated 5-Likert scales to compare consumers’ first perceptions of renting fashion with their perceptions of renting fashion after examining potential product types. This study will apply the technology acceptance model (TAM) to renting fashion. TAM can be used to understand the factors that encourage or discourage consumers to adopt a new consumption model. Furthermore, it can be argued that access based services in a fashion context, specifically renting, is technology driven thus the model is applicable (Pavlou, 2003). Finally, during the study, semiotics will be used as the tool to determine the spectrum of fashion products that would be acceptable to rent. Semiotics was chosen because it can be used to explore the meaning that people associate with products (Mick, 1986). The rationale behind this tool is that by using brand associations and signals, consumers may be able to rate the fashion products and provide more comprehensive answers rather than simply stating that they would rent a generic product.

It is argued that while consumers may not be able to imagine renting clothes for everyday wear, in practice they might be more inclined to experiment with different categories of clothing. Furthermore, it is suggested that consumers will only adopt the renting model if it is useful and easy to use as suggested by the TAM. This paper will contribute to the understanding of how access based services can be effectively implemented in the fashion industry. Clothing rental keeps clothing in use for longer and helps to meet consumer needs.
for newness (Lang and Armstrong, 2015). Popularising this consumption model could help to reduce the amount of clothes in landfills but it will only be adopted if designed from a consumer perspective, therefore, this project will advance both academic and practitioner understanding of how consumers would rent clothes in practice.

References


Posters
Author: Rebecca Beech, Coventry University

Title: Understanding the relationship between knowledge sharing within online communities and consumer empowerment: through the lens of ecological citizenship
The Emergence of Circular Economy
A new framing around prolonging resource productivity

Author: Fenna Blomsma and Dr. Geraldine Brennan, Imperial College London
Title: The Emergence of Circular Economy A new framing around prolonging resource productivity

The idea of a circular economy, or circularity, has risen to prominence as a way of addressing pervasive societal, commercial and environmental problems, on top of reducing negative impacts. It is also associated with the generation of mutual positive impacts in these areas. The essence of this idea is that by implementing strategies that can be thought of as re-inventing, or facilitating, a form of looping or cyclical, such as reuse, recycling and remanufacturing – resources can be kept in production use loops. This way, more value can be extracted from resources and certain types of value loss can be prevented, however, interpretations vary on what exactly this circular economy represents. We posit that it is a dynamic system with a focus on the use of resources and should generate, at what costs, what strategies should be selected for this, how these should be executed and how such strategies refer to other strategies also worthy of pursuit.

An emergent umbrella concept
Circular economy brings together many different schools of thought, among which are industrial ecology, sustainable consumption and production, product design and restorative design. In this paper, we analyze the different concepts around resource strategy, and how they may be used to inform or shape the different approaches to resource management. Each concept typically develops along a trajectory that ends with the concept either becoming a norm, the norm associated with a continuing role, or it collapsing and is replaced. Circular economy is a discussion in the relative infancy and is therefore both thought of as an emergent umbrella concept.

On the outcomes, selection, execution & relationship of different resource strategies

The emergence of circular economy thinking has been driven by the historic development of the circular economy, in the context of socio-economic factors, but also with the understanding that resources are renewable and that there is an emergent character as an emerging umbrella concept. Three stages are visible:

- Preparatory period
- Transition phase
- Circular economy

The preparation period and phases of economic transition, the circular economy model, and its relationship with the different resource strategies is still ongoing. The circular economy model is still unfolding, and the different phases of economic transition, the circular economy model, and its relationship with the different resource strategies is still ongoing. The circular economy model is still unfolding, and the different phases of economic transition, the circular economy model, and its relationship with the different resource strategies is still ongoing.
Author: Fenna Blomsma, Imperial College London
Title: Circularity Compass From a collection of interpretations to an investigative method

Circularity Compass
From a collection of interpretations to an investigative method

by: Fenna Blomsma, supervised by: Dr Mike Tennant and Dr Risiko Ozaki. Centre for Environmental Policy, Imperial College London

Inspired by the similarities and differences between the multitude of interpretations of circular economy, a method was devised to capture different interpretations of the concept, the resulting Circularity Compass offers a structured way of investigating circularity and can aid in bringing conceptual clarity with regards to the application of circular and preventative resource strategies.

The development of the Circularity Compass
The Circularity Compass was developed in two stages. A general structure was devised based on theoretical research for which existing theories were used. Subsequent empirical research served to add specific contextual routes to this structure. Data was collected through semi-structured in-depth interviews with 15 project leads, who conducted 2 month long readiness studies into the application of circular strategies, totaling 14 companies and 23 product cases.

What is the Circularity Compass?
The Circularity Compass is an investigative method, that is based on lifecycle thinking and consists of a template and a mapping language, rather than a prescriptive framework. It facilitates the capture of outcomes, impact on material quality and the prevention and creation of different types of waste for different strategies for dealing with resources. Through the inclusion of specific and flexible or unspecified routes it offers both structured guidance and sufficient flexibility to enable case-specific examination. A mapping process consists of identifying the relevant routes and determining their potential impacts. The Circularity Compass allows for the distinction between recycling, downcycling, and cascading, capturing nuances relevant to both our understanding of circularity and its impact.

A flexible yet structured method for investigating resource strategies

Uses of the Circularity Compass
* The mapping exercise with the aim to understand current resource measures, as well as for exploring the implications of new strategies when innovating, through using it to capture various scenarios.
* Compare different individual strategies or to investigate synergies and trade-offs between sets of strategies.
* Connect multiple circularity compasses as required. This can be the case, for example, when investigating multiple cascades.
* Use as a talking piece to align views and ideas about circular strategies within project teams.
* Use in both academic and business settings when investigating the relationship between various resource strategies.

Acknowledgements

Centre for Environmental Policy, Imperial College London

\[ \text{CPE} \]
Relational Capital and Circularity
On power and creating shared value
by Dr. Geraldine Brennan (Middlesex University Business School) and Fenna Blomsma (Imperial College London)

Keeping resources and production use for longer can be facilitated by different circular business models, depending on the industry and geographic boundary. Distinguishing in new ways has substantial implications for sustainability between business models, which tend to be overlooked. This Circularity Grid shows the Triangle of Relational Capital in action. By enabling organisations to systematically view through circular opportunities without overlooking the implications of adopting new business models.

Circularity requires different relationships with products and services. Consequently, implementing circular strategies fundamentally changes relationships between business models and action. To navigate this complexity and support organisational decision-making, key dimensions of circular systems require attention.

- The distinction between types of flow, where resources flow in varying forms. Socially, the type of circularity is often mass or different degrees of dependency between organizations.

The Circularity Grid creates an overview of these relationship dynamics, which the ‘Triangle of relational capital’ can unpack by helping to identify roles, linked data, interdependencies, and value creation potential.

Circularity Grid - dynamics of circularity. Highlighting these dimensions in a matrix form helps to organize and create awareness of the inevitable link in particular decisions.

- Dimension 1: Flow
  - This dimension illustrates three type of flows: material cyclling in circular production processes, material cycling by-products & co-products in circular production systems and product and component cycling in circular industrial ecosystems.
- Dimension 2: Coupling
  - This dimension captures the organizational dependency and risk in different relationships associated with various business models at any type of flow.

Triangle of relational capital - making invisible flows visible. Circular strategies can mitigate dependencies related to resource scarcity. A successful implementation of circular business models requires understanding how organizational dependencies, which are characterized by both the scarcity and presence of tangible and intangible resources, shape shared value creation opportunities. The management of relational capital provides insights into the configurations of resources characterizing dependencies in circular business models and enabling organizations to explore the implications of implementing circular value propositions in different ways.

Insights:
- Looping strategies and business models on the circularity grid creates awareness regarding which business models may be of strategic importance.
- The Triangle of Relational Capital facilitates unpacking how relational capital shapes value creation opportunities in circular business models.

From understanding where your strategy fits by describing what is circulating and how that is organized...

- Interface: suppliers & customers are involved in keeping the materials cycling through a take-back scheme.
- British Sugar: transforms its by-products into sellable co-products.
- ADNAMS: using waste heat from kettles to preheat water used for the next batch.
- Lohmann & Partners: factories are exchanging and using each others waste streams in a system of industrial symbiosis.
- Recycle waste streams that otherwise would be too expensive to be profitable in cooperation with consumers and brands.
- Kinds sharing & saving: + more rental & less hassle to access services.
Title: Stewards of Water? The Role of Commercial Export-orientated Agriculture Companies (CEACs) for Sustainable Water Management and Governance
Sectoral Re-imagining: Exploring the case of Formula E in Motorsport

Cristiana Pace: PhD Student
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The PhD focus:
The Dynamics of Disruptive Innovation: exploring the case of Formula E in Motorsport

Dr Nick Henry: Director of Study
Dr David Jarvis and Prof Mark Jenkine: Supervisory Team

Using motorsport as a context, the research focuses on disruptive innovation within the broader process of technological transition. Specifically, recognizing that innovation is a complex multi-level phenomenon, the research investigates disruptive innovations to fill existing knowledge gaps on the dynamics and temporal dynamics of disruptive innovation. To do so, this study explores the dynamics of a low-carbon disruptive innovation such as Formula E in the motorsport sector within a multi-level perspective approach (MLP) (Firn and Kuen fünf, 1998; Geels, 2004). This approach is deemed useful to build an in-depth understanding of the role that governance plays in the low-carbon innovation process in the motorsport sector and of how governance, stakeholders, and other factors influence the shape of disruptive innovations.

Contribution to knowledge
- fill gaps on the dynamics and temporal dynamics of disruptive innovation. In doing so, it will shed light on how stakeholders influence, inhibit, and shape this typology of innovation, at different stages of disruption.
- proposes an enhanced Multi-Level perspective approach, developing further the temporal dimension.
- bring originality and a contribution to knowledge by ‘nesting’ institutional and stakeholder mapping within an MLP approach in order to set out niches, regimes, and socio-economic contexts as the disruptive innovation unfolds.

Expected outcomes towards the Circular Economy
- Provide an example of producing circular economy in sport, specifically by disruptive business model and sectoral reimagining;
- Provide an example of the implementation of environmental standards and sustainability principles within Global Production networks thought Formula E;
- Provide a detailed analysis and map of the institutional governance and actors which contributed and connected to facilitate this innovation, including the governance connections between regulators, incumbents and entrants, and both the business and sport actors of motorsport in order to explore where does power lie for the delivery of a circular economy.

References:

Title: How can selling surplus food reduce waste?

How can selling surplus food reduce waste?

Scope of Food Waste

Overview
- "... of all food produced for human consumption in the world is lost or wasted." (FAO 2018)
- Agricultural products worth $7 trillion (producer price) are discarded, equaling the GDP of Switzerland.
- Most food wasted is edible; in the UK 70% of the food wasted along the food and drink supply chain is edible (leman et al. 2013).
- Edible, safe food that is not consumed is called surplus food (Converse et al. 2016).
- Most surplus food is sent to landfill, where it generates harmful Greenhouse Gas methane when decomposing, contributing 8% of global emissions (van-wassenhove et al. 2014).

Environmental & Social Impact of Food Waste
- As above.

Selling Surplus Food

Resources
- Retail & Hospitality
- Surplus Food
- Waste

Consumer
- Businesses selling surplus food

Innovative economic solutions to reduce food waste have been pioneering recently. Among these are:
- Shops selling surplus food from supermarkets at reduced prices (Wefood, Approved Food)
- Apps linking consumers with surplus food, such as Too Good To Go, which enables restaurants to sell their leftovers cheaply to consumers
- Supermarkets selling imperfect fruit & vegetables at low cost (Asda, Waitrose, TESCO

These business models have the capability to reduce food waste on a big scale while also discouraging the consumption and thus demand and production of new products. Arguably, this precondition for sustainability, leading to less pollution and lower resource consumption towards a more balanced ecosystem (Jones 2013).

Research Aims & Objectives
- Few empirical studies have investigated business models selling surplus food (Ogbe et al. 2015). The original contribution of this research is to empirically analyse the socio-cultural environment of these innovations, consumers' perceptions, and the potential success of these approaches to reduce food waste while remaining economically sustainable.
- This knowledge will be useful to determine whether and how these concepts can simultaneously scale up and reduce food waste while also discouraging the consumption of new products at the same time as raising awareness of the issues at stake.


Anticipated Methodology
- Exploratory cross-cultural comparative case study research (2 businesses in UK, 2 in Denmark):
  - Mixed methods, majority of data will be gained by inductive interpretative qualitative research
  - Phenomenology: understanding the phenomenon of buying or not buying surplus food
  - Data analysis via explanation-building strategies, based on an iterative process of comparing evidence from the case studies and developing & revising propositions (Fered 1994, Yin 1994).

Impact
- Supporting the realisation of a circular economy, an important step towards sustainability.

Development of parameters with increasing consumption of surplus food
- Availability/Utility of food waste
- Demand for food
- Access to food
- Resource consumption
- Nutrition
- Awareness/Behaviour change probability

References
- Exploring & understanding consumer perceptions & behaviour via semi-structured interviews, focus groups and observation

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Author: Na Xu, University of Sheffield
Title: Chinese consumers' perceptions of animation in organic food advertisements

Background
➢ The trend of worldwide economic development are not sustainable, and more sustainable practices need to be developed and adopted by communities (Ballantyne and Facker, 2011).
➢ Since the 1970s, advertising has been used to raise consciousness about natural issues and the urgency of behavior change (Cristevam et al., 2012). Animation is also applied as a particular communication way (Kalman et al., 2015).

Previous Research
➢ Through grabbing consumers' awareness and attention effectively, animation is employed by more and more practitioners as a unique feature (Kuisma et al., 2010).
➢ Animation has been demonstrated as a powerful tool for causing consumer’s physiological stimulation. It is the best guarantee for provoking consumers' visual attention and recall of advertisements (Sundar and Kalyanaraman, 2004).

Methodology
➢ Semi-structured interviews have been carried out with 20 Chinese consumers.
➢ A short animated advertisement “What is organic” was shown to interviewees made by Zkm Organics.

Conclusion
➢ Previous research shows that animation advertising has significant effects on consumers' perceptions, including attention and memory.
➢ Future research will focus on how animation advertising promote sustainable behavior.

Future Research
➢ Research Gap & Aim
  • Animation is a popular technique in advertising; however, whether animation advertising facilitates sustainable behavior has not been researched thoroughly yet.
  • Future research aims to investigate the contribution of animation advertising in promoting sustainable behavior.
➢ Research Methods
  • Mixing methods will be used, including qualitative and quantitative research.
  • Interviews, focus groups and questionnaire will be applied to collect data.

Findings
➢ Consumers show a higher trust in the information in animated organic food advertisement than live-action ones.
➢ Animation could improve expression effect of advertisement more distinctly and more immediately, which would help consumers understand the information better.
➢ Animation is funny and attractive, and this is the driving force for consumers to watch the advertisement up to the end.
➢ Animation advertisement could save the production cost and time more effectively.
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A final thank you and acknowledgements

The Chairs would like to extend a final note of thanks to all of those who have contributed to our conference. Firstly we want those members of the organising committee from Coventry University, University of Sheffield and the Academy of Marketing; our abstract and poster reviewers, and a particular thanks to our PGR team led by Dr Solon Magrizos and Jordon Lazell. Solon, Viktoria and Rebecca particularly helped produce these proceedings. We also want to thank our CBiS marketing and event management team – Nicola Boyle, Mandy Bisla and Debbie McArdle – for their incredible support and efficiency. Finally a special thank you to our host, Coventry University for supporting the Circular Economy Conference 2017.

From all of the members on the organising committee, we hope all of the delegates thoroughly enjoy the conference.

Thank you all again for your abstract and paper submissions, and for sharing your research with us at the conference. We welcome your feedback about the conference.

Prof. Marylyn Carrigan
Prof. Sally Dibb
Campus map and how to get there

University contact info

Below is the Coventry University campus map, circled is the venue, the Techno Centre.

Car parking spaces are very limited at the University. If you are visiting a member of staff, it may be possible for your host to reserve you a car parking space. Please check in advance. This facility will normally apply to visitors attending Open Days, Conferences or other large-scale events.

Please note that visitors who park in the University car parks without displaying a valid permit may be clamped.

The main University switchboard number is 024 7686 7688.
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