Over-Claiming the Circular Economy: The Missing Dimensions

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Over-claiming the circular economy: The missing dimensions

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Despite the well intentioned call of the 1983 Bruntland Commission to develop "long term environmental strategies for achieving sustainable development by the year 2000 and beyond" (WCED 1987, p.ix), since then the adoption of neo-liberal policies by most western governments has led to increased consumption and a failure to address critical concerns related to sustainability (Murray et al., 2015). Increasingly it is recognised that continuous growth does not lead to greater prosperity for all people, but can rather deliver greater social injustice, health problems, social tensions and ecological crises (Gibbs & O'Neill, 2016). Reliance on economistic logic, technological fixes, eco-innovations and environmental add-ons as sustainability solutions at the edges of business strategy is not delivering transformative change for individuals and society, nor significant competitive advantage and value for business (Geels, et al., 2015; Papadas, et al., 2017). Further, the dominant social paradigm (DSP) that structures society's beliefs and perceptions (Kilbourne et al., 1997) is often profoundly value laden, assumes hyper-consumption can deliver happiness, while relying on economic growth that can only be detrimental to the environment (Gollnhofer & Schouten, 2017). The DSP is also guilty of cynically manipulating consumers and contributing directly and indirectly to a range of social, economic and environmental problems (Carrigan & Bosangit, 2016) such as food waste (Lazell, 2016), depletion of scarce resources (Carrigan et al., 2017) and excess materialism (Moraes et al., 2010). This has led some to suggest a new approach to sustainability; that of the 'Circular Economy' which is being mooted as a pathway for companies – large or small – to engage with the challenges of sustainable business (EEA, 2016). This paper begins with an overview of the concept of the Circular Economy, discusses some of the tensions and limitations of this approach,

particularly the more overlooked social aspects of circularity, and suggests some alternatives as exemplars of more ethical and socially inclusive approaches to the Circular Economy.

What is the Circular Economy?

Murray et al. (2015, p.377) define the circular economy as "an economic model wherein planning, resourcing, procurement, production and reprocessing are designed and managed, as both process and output, to maximize ecosystem functioning and human well-being". Whilst Haas et al. (2015) note the circular economy is a strategy for reducing the input of virgin materials and outputs by closing economic and ecological loops of resources flows, most often the circular economy is positioned in opposition to the linear economy, characterised by 'take-make-dispose' procedures. A linear economy takes natural resources and converts them in the production process that externalises waste. This process causes environmental degradation in two ways: the removal of natural capital from the earth, such as the unsustainable mining of strategic metals from the earth, and by the devaluing of natural capital through pollution and waste (Murray et al., 2015). This 'harm chain' operates at four stages of business: pre-production, production, consumption and post-consumption (Carrigan et al., 2013; Polonsky et al., 2003).

Since the 1960s critics have argued for limiting the use of resources and the unsustainable nature of production processes, and pushing for greater efficiency in terms of re-use and recycling materials and products (Meadows et al., 1972).The circularity argument suggests economic growth can be attained without any environmental destruction as long as attention is paid to resource use, and also places more emphasis upon servicing infrastructure such as repairing and extending the life of goods and buildings to prevent waste from redundant materials (Stahel, 1982). The term 'circular economy' was first coined in the 1990s by environmental economists David Pearce and R.Kerry Turner (1990). More contemporary understandings revolve around closed loops and the concept's practical application in industrial contexts. McDonough and Braungart's (2002) book '*Cradle to Cradle: remake the way we make things'* for example, shows how better design and usage of resources can benefit society. The regenerative aspects of the circular economy have emphasized thoughtful design and management of production processes where waste can be minimized and any loss of resources can be reintroduced and utilized (Genovese et al. 2017). Examples might include jewellery 'remodelling' using recycled or discarded metals and jewels (Carrigan et al., 2016) or coffee grounds turned into furniture or used to grow mushrooms (Ferreira, 2017).

Tensions within the circular economy debate

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., 2015, p.370). These include confusion around terms such as circular and linear, oversimplification of the concepts, and most notably, the missing social dimension. The three pillars of sustainability – economic, environment and social - explicitly state the social as a dimension that includes aspects such as social justice and human well-being (McEwan, et al. 2015), and yet the circular economy rarely mentions the social dimension, and human stakeholders are often absent from such narratives. Instead they mainly focus on relationships between the economy and the environment, facilitating a more sustainable future by clarifying ways to use resources more efficiently and associated processes (reducing and reusing waste and by-products). The social implications and benefits of this are often overlooked, even though greater respect for and restoration of natural resources can be associated with improved wellbeing for local populations. For example, the efforts of the local community in St Ives, Cornwall to address peak tourism and fishing stock depletion by more mindful use of local, ethical produce, food waste reduction and recycling, seasonality and sustainable principles are driving disruptive social change and building social capital for common good (Carrigan et al., 2017). While circular actions aimed at ecological renewal and survival clearly benefit mankind, there is no engagement with the morality and ethics of the extent to which holistic changes may limit the natural systems (Murray et al., 2015). It is unclear for example how the circular economy deals with dilemmas such as meeting the needs of current and future generations whilst tackling global issues such as climate change that may limit development. Questions remain over how the concept has implications for equality of social opportunities and associated issues of gender, racial, religious and financial equality.

A further inconsistency within the circular economy debate is how its meaning is perceived among the public, academics and policy makers. There seems to be a conflicted and fragmented understanding of the term, and of how it relates or differs with similar concepts such as the Green Economy (Gibbs and O'Neill, 2016), sustainable development (Geels, 2015), the collaborative or the Sharing Economy (Belk, 2009). Sometimes the circular economy is solely focused on environmentally responsible production processes; alternatively it is used as an umbrella term containing a wider array of concepts and practices. This leads to a further problem with regard to the idealized nature of the circular economy, since it is more often celebrated than critically interrogated. The concept makes and stands for wide reaching changes to production and consumption activities and the exploitation of natural resources. Gregson et al. (2015, p.221) critically question circular economies noting that "whilst the circular economy continues to be recited as an ideal, the actuality of forging circular economies within the EU entails challenges borne of a conjuncture of politically created markets, material properties

and morally defined material circuits". Gregson et al.'s (2015) paper is unusual in that it compares the theoretical conceptualization of the circular economy to what is actually happening on the ground, arguing that its actual enactment is limited and fragile. Instead they suggest that most circular economic actions are actually global recycling networks where waste generates economic value by being re-circulated, such as the recycling of second hand and 'waste' gold (Carrigan et al., 2016).

Sociological investigation of the exchange and circulation of waste has shown how the circular economy has come to 'other' and divert attention away from such global recycling networks, separating the consumer from any thought of how materials are re-circulated in recycling markets (Bekin et al., 2007). Valenzuela and Böhm (2017) note Apple's recycling robot 'Liam' is one such example. Here the marketing of an automated recycling process not only places the circular economy as a solution to commodity fetishism and planned obsolescence; but attempts to remove any consumer guilt or responsibility from unnecessary purchases whilst also subjugating workers employed to repair, separate and recycle vast quantities of e-waste. A similar point is also made by Gregson et al. (2010, p.853) noting how objects at the end of their life "come apart, economically and physically, symbolically and socially" whereby the social plays an important part in the transience of an objects materiality.

In supressing the idea that surplus or excess materials are considered waste, the circular economy also supresses the disposable nature of consumption markets and the moral and ethical reality of those who base their livelihoods on ascertaining value from waste (Bekin et al., 2007). The current DSP ignores the social dynamics of how things become waste and how they impact upon people's lives through a process of renegotiation of the material. The circular economy therefore hides the social implications of the fact that waste is being generated faster than our ability to manage it (Hoornweg, et al., 2015), by refuting any required reduction in the throughput of products as well as the actual practicalities of material re-circulation markets. Gregson et al.'s (2010; 2015) work highlights the social dynamics of the circular economy describing a moral economy, since judgments are made on the merits of different circuits of materials and how they create new markets, thus there are right and wrong ways of re-circulating materials. The circular economy, like waste, has become a clarification system for how excess materials are generated and should be re-circulated. Plastic for example has become the 'skin of commerce' moving from a durable to disposal material; its disposability is permitted due to recycling discourses (Hawkins, 2017). Fleece manufacturers for example use recycled plastic bottles as a way to conserve and reduce waste, but emerging research indicates that the plastic might ultimately end up in the oceans anyway in the form of toxic microfibres (Messenger, 2016). More worrying is that breaking a plastic bottle into millions of fibrous pieces of plastic might prove to be worse than doing nothing at all. There are several accounts that

question the environmental logic behind processes of recycling and re-use from the transportation of recyclable material across long distances via polluting vehicles (Bahers, 2017) to waste flows and sinks where the most valuable properties from discarded materials are extracted (Gabrys, 2009) and recycling material that does not fulfil its purpose, instead being burned or placed in landfill.

Gregson et al. (2015) also reflect on global recycling networks pointing out the difficulties of putting into place processes whereby discarded goods and materials can become tradable again between markets, such as the well documented problems of dealing with discarded clothing (Dukes et al., 2017) and 'wonky' vegetable mountains (Ruetgers, 2017). Implementing the waste hierarchy (i.e avoiding throughput by aiming to prevent waste before recycling and re-use) potentially challenges the market dynamics of the recycling sector (Hultman & Corvellec, 2012). Gregson et al. (2015, pp.228-229) also point out that waste that comes through local authority recycling centres is often so cross-contaminated that there are a relatively small number of output categories, which means many of the throughputs are mixed and have, at most, low value (Gregson et al., 2015). Comprehensive or consistent information on the scale of materials being managed according to circular economy principles, and where product lives are being extended, is also absent, making it difficult to verify the actual impact of the circular economy. This leads Leismann et al. (2013, p.184) to suggest that by themselves resource efficiency in production and technological innovations are inadequate for reducing the current use of natural resource, and argue that social innovations and a "complementary and equally valued strategy of sustainable consumption" are required. This includes goods being used for longer, and the extension of alternative business models that support more collaborative consumption. Carrigan (2017, p.14) argues that "new ways of consuming, such as sharing, pooling, renting, borrowing and ideas of liquid consumption (Bardhi, Eckhardt & Arnould., 2012), the shared economy and experiences over products are moving ethical consumer research into new areas." These alternative spaces of consumption represent a more social turn within the circular economy, and provide ethical and sustainable choices that both reduce and rebalance consumption more responsibly, and challenge throughputs of excess consumption and waste.

The next section of this paper highlights an example of the more socially motivated models of circularity that are emerging, the resource-saving potential this exhibits, and some of the potential challenges that need to be understood if the circular economy is to provide sufficient answers to effectively reduce resource consumption.

Socio (technical) accounts of the circular economy: OLIO the food sharing app

A distinct characteristic of modern consumer societies is wastefulness, with food a prevalent example. Food is wasted throughout the supply chain from farm gate to manufacturing, distribution and retail yet consumers account for the highest proportion of food wasted in developed countries (FAO,2011). Policies to tackle food waste have been integrated with circular economy thinking (European Commission, 2017). Household food is wasted for a variety of reasons from unsatisfactory taste and quality, food going beyond its expiry date, mismanagement of perishable items, poor cooking skills and excessive portion sizes (Quested et al., p.2013; Quested & Luzecka, 2014) are amongst numerous contextual aspects that influence consumption in the home (Lazell, 2017). Consumers are placed within a difficult situation (Evans, 2011); faced with dealing with significant surplus perishable food and subsequent food waste given the normalisations of supermarket purchasing practices, the demands for a cultural variety of eating experiences and the need to negotiate food materiality and planning against the complex temporalities of everyday life (Evans, 2014). Food waste from households therefore comes about as a hidden fallout of everyday life.

Food sharing has been framed as an important activity to help mitigate the problem of food waste (Lazell, 2016). The food waste hierarchy has set out a clear prioritisation of action (Papargyropoulou et al., 2014) with preventative measure such as the sharing of food, re-evaluation of preparation and purchasing habits and re-distribution of surplus food preferable to composting food or food waste collection for anaerobic digestion (Cox et al., 2010). The EU FUSIONS (2013) project made an important case for how social innovation can help mitigate food waste, with food sharing one activity that entrepreneurs and social businesses have adopted. Such sharing organisations can be characterised by those based around the re-distribution of surplus retail food, such as Fareshare in the UK, that operate as food banks in providing a source of emergency food provision. Such initiatives provide a lifeline for those in need however they have been critiqued as a means of tackling the root causes of food waste (Caraher & Furey, 2017). The re-commodification of food to food banks has provided retailers with an outlet for surplus food resulting from their systems of over stocking (Guardian, 2017) and raised questions other the ethics of re-distributing food not wanted by others.

Alternative sharing initiatives have sought to re-distribute food in institutional or community spaces to mitigate waste, combatting the abundance of food from households, cafés, restaurants and other hospitality venues that goes to waste. OLIO (see https://olioex.com/) a food sharing app is the focus of this socially enabled circular economy initiative. OLIO is an application that enables individuals and businesses to share food with their neighbours and friends, describing itself as a 'revolution in food sharing'. In practice the mobile 'app' allows users to list food primarily (amongst other items) with information and photographs whereby other users can search, find and collect food. The basis of OLIO is its ability to connect people in a specific locality enabling the sharing of food that is surplus to the

requirements of one person but demanded by other users. This works especially well for perishable food that requires a more direct line of communication given the limited period within which food remains in an edible state. Food has to be treated differently than other materials re-circulated given its perishable nature (non-perishable items are also shared), with OLIO providing a platform to indicate a time frame within which sharable food should be collected.

This enabling of food sharing re-introduced community based practice and 'lost' knowledge in modern society. For example, the household basis of food provision limits instances in everyday life where food might be shared beyond existing family and friend connections. The social interactions enabled by OLIO disrupt current household food waste practices, re-directing food still in its edible state to others, often strangers. The sharing of food however is not without its challenges. Lazell (2016) explains that without previous social interaction, consumers show signs of a heightened visceral awareness of whether the food is in an acceptable eating state, with greater concern for food that is not in sealed packaging or near to its sell by date. An element of the attitude behaviour gap (Carrigan & Attala, 2001) also emerged since consumers indicated their desire to engage in such initiatives without realising the practicalities of collecting and sharing food. A barrier therefore exists in how social intentions online translate to food waste prevention behaviour in the real world. Despite this, OLIO is a working exemplar of how the social dynamic of the circular economy is initiating the re-circulation of surplus food to disrupt its journey to becoming waste. The social engagement and interactions with others via the online app and face to face between neighbours, communities and businesses enable this sharing, potentially building future relationships to prevent further waste. OLIO challenges the current household based provision model of food; such rethinking is important in moving us towards implementing stronger food waste prevention measures (Mourad, 2016).

Conclusion

By drawing upon literature from different disciplines, and undertaking a critical review and analysis of this current but, until now, fragmented research, this paper reaches three important conclusions regarding the Circular Economy as it is currently, studied, practiced and understood. Firstly, despite CE research rising significantly, it has "evolved primarily as research on waste generation, resource use and environmental impact" (Lieder & Rashid, 2016, p.47) neglecting its business and social perspectives. A business focus is useful, in order to motivate more firms to redesign their business strategies but emphasis on the social dimension is crucial. For CE to be tenable, consumers' opinions, attitudes and behaviour matter (Hazen et al, 2016) and by focusing on its social side, researchers are more likely to advance their understanding, and involved companies are more likely to influence consumer behaviour. Secondly, many current business practices and the DSP focus on encouraging

hyper-consumption to promote happiness, well-being, and the fulfilment of (often) superficial needs. Since we generate more waste than we can manage (Hoornweg, et al., 2015), for CE efforts to become successful we need to disrupt the DSP and focus on consumers' participation in more sustainable, environmentally friendly and collaborative consumption behaviours. Third, the real benefits of CE's technical and materials claims remain under researched and most claims are based on anecdotal evidence and limited research. Tools such as an economic input-output analysis have been used to quantify economic benefits of the circular economy (Li, 2012). Future attempts should take into account that the circular economy also potentially promotes collaboration and offers ethical and social benefits that are not fully realised, understood and, because of their intangible nature, have so far failed to register in CE measurements of value.

Based on our analysis, important academic and managerial implications can be drawn. Future research should focus on clarifying the term 'Circular Economy' and its relationship with related terms such as the Green Economy, the Sharing Economy or Sustainable Development. Moreover ambitious researchers can try to measure and quantify benefits from the circular economy but taking into account both positive (e.g. from increased wellbeing of local populations) and negative (e.g. to individuals who earn their living by collecting and disposing waste) social results. Finally, recognizing that "most current CE research seems characterised by a partial approach which does not truly account for the complexity of all the dimensions involve" (Pomponi & Moncaster 2017, p.714) future research can adopt a multi-dimension and likely multidisciplinary approach to include economic, environmental and social considerations.

Companies need to move away from overemphasising economistic logic with environmental modifications. Rather, they should strive to find their point of intersection with society and design new business models assuming their responsibility for their impact on the environment while also considering the social aspects of their business behaviour. Our analysis of OLIO highlights how the social dynamics disrupt current business models and drive transformative change for individuals and the environment. As with OLIO, innovative companies that have been emerging worldwide can offer inspiration to that end. For example, there are *entrepreneurs* working on social enterprises that upcycle furniture while supporting and training disadvantaged young adults (see http://jayand.co) ; new clothes-sharing initiatives (see https://rentez-vous.com) that aim to minimize waste from clothes by connecting member with similar fashion preferences. *Established companies* can start rethinking their sustainability efforts in a multidimensional approach and not in terms of only economic or environmental efforts. Lacy and Rutqvist (2015, p.58) offer an example of such a narrow approach by describing a US company's strategy to divert 150 tons of daily food waste which was "a major cost in terms of lost revenue and disposal fees" into "inexpensive and clean energy that powers a 49- acre

campus housing offices". The company in question considered this action a great success, but a more holistic attitude of the CE might consider diverting some of the food-waste towards communities in need, rather than just turning it into very expensive fuel to power buildings. Finally, *policy makers* and *community leaders* could emulate the emergence of community gardens or toy and other 'libraries of things' worldwide, and consider how they might support such initiatives by offering incentives and increasing awareness to integrate top-down and bottom-up approaches.

References

Bahers, J.B (2017). Towards a circular economy ….. of proximity? Different Interpretations of proximity's typology – Jean- Baptiste Bahers. Opening the bin Conference, Lund University, Sweden, 27th-29th April.

Bardhi, F., Eckhardt, G. M., &Arnould, E. J. (2012). Liquid relationships to possessions, *Journal of Consumer Research, 39*(3), 510 – 529.

Belk, R. (2009). Sharing, *Journal of Consumer Research, 36,* 719-734.

Bekin, C., Carrigan, M. & Szmigin, I. (2007). Caring for the community: an exploratory comparison of waste reduction behaviour by British and Brazilian consumers, *International Journal of Sociology and Social Policy 27*(5/6), 221-233

Caraher, M. & Furey, S. (2017). Is it appropriate to use surplus food to feed people in hunger? Short-term Band-Aid to more deep rooted problems of poverty, 26 January. Food Research Collaboration Policy Brief. Retreived from http://foodresearch.org.uk/wp-content/uploads/2017/01/Final-Using-food-surplus-hunger-FRC-briefing-paper-24-01-17.pdf

Carrigan, M. (2017). Revisiting 'The Myth of the Ethical Consumer': why are we still not ethical shoppers? *Journal of Consumer Ethics,* Special Issue 'Reflections on classical texts in ethical consumption', *1*(1), 11-21.

Carrigan, M. & Attala, A. (2001) The myth of the ethical consumer – do ethics matter in purchase behaviour? *Journal of Consumer Marketing 18*(7), 560-578

Carrigan, M., & Bosangit, C. (2016). The Challenges of Responsible Marketing, chapter in *Ethics and Morality in Consumption: Interdisciplinary Perspectives*, edited by Shaw, D., Newholm, T. , Chatzidakis, A. and Carrington, M. Routledge: London.

Carrigan, M., Lazell, J., Bosangit, C. & Magrizos, S. (2017). Burgers for people who give a damn! Driving disruptive social change upstream and downstream in the tourist food supply chain, *Journal of Sustainable Tourism*, 10.1080/09669582.2017.1291652

Carrigan, M., McEachern, M., Moraes, C. & Bosangit, C. (2016). The Fine Jewellery Industry: Corporate Responsibility Challenges and Institutional Forces Facing SMEs, *Journal of Business Ethics*, doi 10.1007/s10551-016-3071-4

Carrigan, M., Moraes, C. & McEachern, M. (2013), From conspicuous to considered fashion: A harm chain approach to the responsibilities of fashion businesses, *Journal of Marketing Management*, 29(11-12),1277:1307, doi: 10.1080/0267257X.2013.798675.

Cox, J., Giorgi, S., Sharp, V., Strange, K., Wilson, D. C., & Blakey, N. (2010). Household waste prevention--a review of evidence. *Waste Management & Research: The Journal of the International Solid Wastes and Public Cleansing Association, ISWA*, *28*(3), 193–219. doi:10.1177/0734242X10361506.

Dukes, N., Carrigan, M., Bosangit, C. & Berlan, A. (2017). Why so much? An exploration of consumer behaviour and the social dynamics surrounding frequent clothes shopping, 50th Academy of Marketing Conference, Hull University Business School, 3-6 July.

European Environmental Agency (EEA) (2016). Circular Economy in Europe: developing the knowledge base, European Environment Agency Report. January. Copenhagen, Denmark. Retrieved from https://www.eea.europa.eu/publications/circular-economy-in-europe

EU FUSIONS. (2013). How can social innovation help reduce food waste? Retrieved from https://www.eu-fusions.org/index.php/download?download=9:how-can-social-innovation-help-reduce-food-waste

European Commission (2017) EU Actions Against Food Waste. Retrieved from https://ec.europa.eu/food/safety/food_waste/eu_actions_en>

Evans, D. (2011). Blaming the consumer – once again: the social and material contexts of everyday food waste practices in some English households. *Critical Public Health, 21*(4), 429–440. doi:10.1080/09581596.2011.608797

Evans, D. (2014). *Food waste: Home Consumption, Material Culture and Everyday Life*. London: Bloomsbury Academic.

FAO. (2011). *Global food losses and food waste: Extent, Causes and Prevention*. Food and Agriculture Organisation. Rome.

Ferreira, J. (2017) Coffee and the circular economy, cafespaces, February 8th, Retrieved from https://cafespaces.wordpress.com/2017/02/08/coffee-and-the-circular-economy/

Gabrys, J. (2009) Sink: The dirt of Systems. *Environment and Planning D: Society and Space.* 27 (4) 666-681.

Geels, F. (2015). A critical appraisal of sustainable consumption and production research: the reformist, revolutionary and reconfiguration positions. *Global Environmental Change,* 34, 1-12.

Genovese, A., Acquaye, A.A., Figueroa, A. & Koh, S.C.L. (2017) Sustainable supply chain management and the transition towards a circular economy: Evidence and some applications. *Omega, 66B.* 334-357. doi:10.1016/j.omega.2015.05.015

Gibbs, D. & O'Neill, K. (2016) Future green economies and regional development: a research agenda, *Regional Studies,* 161-173 doi: 10.1080.00343404/2016.1255719.

Gollnhofer, J. F. & Schouten, J. W. (2017). Complementing the dominant social paradigm with sustainability, *Journal of Macromarketing, 37* (2), 143:152.

Gregson, N., Crang, M., Ahamed, F., Akhter, N., & Ferdous, R. (2010). Following things of rubbish value: End-of-life ships, "chock-chocky" furniture and the Bangladeshi middle class consumer. *Geoforum*, *41*(6), 846–854. doi:10.1016/j.geoforum.2010.05.007

Gregson, N. Crang, M., Fuller, S. & Holmes, H. (2015) Interrogating the circular economy: the moral economy of resource recovery in the EU. *Economy and Society, 44(2)*, 218–243. doi:10.1080/03085147.2015.1013353

Guardian (2017) Supermarkets should be cutting food waste, not replying on charities. Retrieved from https://www.theguardian.com/sustainable-business/2017/feb/03/supermarkets-food-waste-charities-tesco-sainsburys-fairshare

Haas, W. Krausmann, F., Wiedenhofer, D. & Heinz, M. (2015) How circular is the global economy?: An assessment of material flows, waste production, and recycling in the European union and the world in 2005. *Journal of Industrial Ecology, 19*(5),765–777. doi:10.1111/jiec.12244.

Hawkins, G. (2017) Accounting for the social in sociotechnical Accounts of Waste? Opening the bin Conference, Lund University, Sweden, 27th-29th April.

Hazen, B. T., Mollenkopf, D. A., & Wang, Y. (2016). Remanufacturing for the Circular Economy: An Examination of Consumer Switching Behavior. *Business Strategy and the Environment*, *26,* 451-464. doi:10.1002/bse.1929

Hoornweg, D., Bhada-Tata, P., & Kennedy, C. (2015). Peak Waste: When Is It Likely to Occur? *Journal of Industrial Ecology, 19(1)*, 117–128. doi:10.1111/jiec.12165

Hultman, J., & Corvellec, H. (2012). The European waste hierarchy: From the sociomateriality of waste to a politics of consumption. *Environment and Planning A, 44(10),* 2413–2427. doi:10.1068/a44668

Kilbourne, W., McDonagh, P. & Prothero, A. (1997) Sustainable Consumption and the Quality of Life: A Macromarketing Challenge to the Dominant Social Paradigm, *Journal of Macromarketing, 17* (1), 4-24.

Lacy, P., & Rutqvist, J., 2015. *Waste to Wealth - the Circular Economy Advantage*. Palgrave Macmillan, London, UK.

Lazell, J. (2017) Food waste across space and place: Understanding the transition of food into waste in the context of urban lives in the UK. Opening the bin Conference, Lund University, Sweden, 27th-29th April.

Lazell, J. (2016) Consumer food waste behaviour in universities: Sharing as a means of prevention *Journal of Consumer Behaviour. 15(5)* 430-439. doi:10.1002/cb.1581

Leismann, K., Schmitt, M., Rohn, H. & Baedecker, C. (2013) Collaborative consumption: towards a resource saving consumption culture, *Resources, 2,* 184-203. doi:10.3390/resources2030184

Li S. (2012). The research on quantitative evaluation of circular economy based on waste input-output analysis. *Procedia Environmental Sciences 12*, 65–71. doi:10.1016/j.proenv.2012.01.248

Lieder, M., & Rashid, A. (2016). Towards circular economy implementation: a comprehensive review in context of manufacturing industry. *Journal of Cleaner Production, 115,* 36–51. doi:10.1016/j.jclepro.2015.12.042

McEwan C, Hughes, A. & Bek, D. (2015) Theorising middle class consumption from the global South: a study of everyday ethics in South Africa's Western Cape. *Geoforum 67*, 233-243. doi:10.1016/j.geoforum.2015.02.011

McDonough, W. & Braungart, M., (2002) *Cradle to Cradle: Remake the Way We Make Things*, London: Vintage.

Meadows, D. H., Meadows, D. L., Randers, J. & Behrens III, W. W (1972) *Limits to Growth: A report for the Club of Rome's project on the predicament of mankind.* New York: Universe Books

Messenger, L. (2016) How your clothes are poisoning our oceans and food supply, Retrieved from: https://www.theguardian.com/environment/2016/jun/20/microfibers-plastic-pollution-oceans-patagonia-synthetic-clothes-microbeads.

Moraes, C., Szmigin, I. & Carrigan, M. (2010). Living positive alternatives: an examination of new consumption communities, *Consumption, Markets and Culture, 13(3)*, 273:298. doi:10.1080/10253861003787015

Mourad, M. (2016). Recycling, recovering and preventing "food waste": competing solutions for food systems sustainability in the United States and France. *Journal of Cleaner Production*. doi:10.1016/j.jclepro.2016.03.084

Murray, A., Skene, K. & Haynes, K. (2015) The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context. *Journal of Business Ethics*, 1–18. doi: 10.1007/s10551-015-2693-2

Papadas, K., Avlonitis, G. & Carrigan, M. (in press) Green marketing orientation: conceptualization, scale development and validation, *Journal of Business Research.* doi:10.1016/j.jbusres.2017.05.024

Papargyropoulou, E., Lozano, R., K. Steinberger, J., Wright, N., & Ujang, Z. Bin. (2014). The food waste hierarchy as a framework for the management of food surplus and food waste. *Journal of Cleaner Production, 76,* 106–115. doi:10.1016/j.jclepro.2014.04.020

Pearce, D. & Turner, D. (1990) *Economics of natural resources and the environment*, London: Harvester Wheatsheaf.

Polonsky, M.J., Carlson, L., & Fry, M.L. (2003). The harm chain: A public policy development and stakeholder perspective. *Marketing Theory, 3,* 345-364. doi: 10.1177/147059310333003

Pomponi, F., & Moncaster, A. (2017). Circular economy for the built environment: A research framework. *Journal of Cleaner Production, 143,* 710–718. doi:10.1016/j.jclepro.2016.12.055

Quested, T. E., Marsh, E., Stunell, D., & Parry, A. D. (2013). Spaghetti soup: The complex world of food waste behaviours. *Resources, Conservation and Recycling, 79*, 43–51. doi:10.1016/j.resconrec.2013.04.011

Quested, T., & Luzecka, P. (2014). Household food and drink waste: A people focus. WRAP. Retrieved from http://www.wrap.org.uk/sites/files/wrap/People-focused%20report%20v6_5%20full.pdf

Ruetgers, L. (2017) An exploratory study of how selling surplus food can create behaviour change and reduce food waste, 50th Academy of Marketing Conference, Hull University Business School, 3-6 July.

Stahel, W., (1982). The product life factor. In An Inquiry into the Nature of Sustainable Societies. The Role of the Private Sector. pp. 72–105. Retrieved from http://infohouse.p2ric.org/ ref/33/32217.pdf.

Valenzuela, F. & Böhm, S. (2017) Against wasted politics: A Critique of the circular economy. *Ephemera: Theory & politics in organization. 17 (1*), 23-60. http://www.ephemerajournal.org/contribution/against-wasted-politics-critique-circular-economy

WCED (1987) *Our common future*. Oxford: Oxford University Press.