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Article:

Campbell, H., Evans, D. and Murcott, A. (2017) Measurability, austerity and edibility: Introducing waste into food regime theory. *Journal of Rural Studies*, 51. pp. 168-177. ISSN 0743-0167

<https://doi.org/10.1016/j.jrurstud.2017.01.017>

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Measurability, austerity and edibility: introducing waste into food regime theory.

Introduction: The Idea of Waste ‘Transitions’ in Food History

We are, as we write, in the middle of an upsurge of interest and action around food waste which has gathered momentum since the first edited collection on the sociology of food waste was published in 2013 (Evans *et al* 2013).

Examples of its growing profile in the intervening period include the 2013 World Environment Day being themed around a campaign on food waste, Pope Francis declaring that wasting food is like stealing from the poor¹ in the same year, France in 2016 banning large supermarkets from wasting unsold food, with the promise that Italy would soon follow², and the launch of the first global standard for measuring and reporting food waste (UNEP 2016). So food waste is now even more visible than it was in 2013.

Our subject matter in this article is the degree to which food waste has gone through historical periods of relative visibility and invisibility in cultural and political worlds. Framed within food regime theory, such an inquiry forms the backdrop to current questions – posed in particular by campaigners and policy makers – as to how to translate the new visibility of food waste into political action. It is also aimed at providing some preliminary insight into both the scope and scale of historical ‘waste transitions’ and their relevance to a food regime-based account of food history.

The paper builds its argument from, initially, the body of research and wider popular and policy discussion which suggests a *new* visibility of food waste as

¹ www.telegraph.co.uk/news/worldnews/the-pope/10101375/Pope-Francis-says-wasting-food-is-like-stealing-from-the-poor.html

² www.dailymail.co.uk/news/article-3433142/France-country-world-BAN-supermarkets-throwing-away-unsold-food-force-donate-charities.html
www.independent.co.uk/news/world/europe/italy-food-waste-law-supermarkets-a6931681.html

both a subject of scholarship as well as in its role as a novel focus for policy and for public discussion. This claim – that we are currently in a period where waste is much more ‘visible’ and where the claim is that food is being wasted on an unprecedented scale – is both simple and has a prima facie plausibility. None the less, it raises some interesting questions about the way the scope and significance of the current waste ‘transition’ may be understood. In this paper, we compare the current moment with two prior epochs of food in modernity. Aligning our investigation with the periodization of food history characteristic of classical food regime theory, we sketch the broad profile of the period from the Victorian food world in England stretching through into the pre-WWII years of Depression and dearth (theoretically demarcated in Food Regime Theory as the ‘First Food Regime’). We do so in order to clearly situate food waste in this period and the subsequent decades of crisis and uncertainty as both a subject of daily practical concern for households as well as a focus for moral and political concern more generally. Using evidence from cookery books and household manuals, we demonstrate the ‘visibility’ of food waste as a matter of concern and place these alongside the kinds of expert discourse that emerged around the food supply crisis of WWII. Then, and in stark contrast to the prior epoch, we examine the period after WWII which reveals a very different character: food waste is arguably less visible and the wider political and cultural tropes of the Second Food Regime seem to erase food waste from popular discourse.

While food regime theory provides an entry-point for assembling the multiple dynamics that characterise particular moments in food history, we seek to move beyond a simple regime approach by more explicitly examining those practices and political areas that the epochal food regimes (and thus food regime theory itself) have tended to obscure. The intention is to assemble an approach to understanding historical waste transitions that is both grounded in historical sources while also acknowledging wider structural and cultural transitions in the global food economy.

We conclude by arguing that the relative visibility and invisibility of food waste during different epochs of modern food history provides important insights into the current moment of food waste politics and popular concern. It allows us to situate the current waste transition as part of a longer dynamic in which the visibility and invisibility of food waste becomes both a signifier of wider transitions in the character and influence of food relations in modernity as well as demonstrating the character of particular sites of political action and potential change.

A Theoretical Context to Waste Transitions: Food Regime Theory.

The study of large historical transitions in food systems has been strongly influenced by the body of work known as Food Regime Theory (Friedmann and McMichael 1989; Friedmann 1993; McMichael 1993; Pritchard 1996). While this theoretical framework provides a rather broad-brush approach to food history, it nevertheless provides a starting point which enables an immediate engagement with epochs and transitions in global-scale food relations.³ It is notable from the outset that neither the original body of food regime work in the 80s/90s nor more recent contributions to the genre have made any attempt to incorporate food waste into their theorisation of food systems – a lacuna that this article will attempt to demonstrate has left the food regime narrative resting on a set of rather narrow bases.⁴ The closest

³ Food Regime Theory has broad scope, although its application tends towards regime relations that stem from major transitions in Western industrial countries. This is both a strength and a weakness: by refraining from a totalising ambition to explain all global food relations, Food Regime Theory provides more manageable lines of enquiry through large food transitions, but does have the weakness of obscuring or ignoring other regimes and global sites of action. By using this framework to enable us to access broad transitions, we acknowledge that these are a Western-centric account that is more focused on production-consumption relations rather than the production/harvest/storage focus of waste studies in Developing contexts.

⁴ There is a passing mention of food waste in Sage's (2013) linkage of food regimes to energy regimes.

related work is that of Zsuzsa Gille who creates an entirely parallel (and compelling) narrative of historical 'waste regimes' without seeking to apply them to the more orthodox framing of food regimes (Gille 2010, 2013).

Within Agri-Food Studies, some scholars in the late-80s/early 90s used the idea of the 'food regime' as a mechanism for explaining a dramatic set of changes that took place in the agricultural systems of those countries emerging from colonial empires into configuration as capitalist nation/states (Friedmann and McMichael 1989). While arguments within the food regime tradition vary, a key point of agreement is that something significant changed in the way international and national food relationships were configured both in the mid-1800s and then in the period after World War II.

Fundamental to Food Regime Theory is the understanding that the rise and fall of Empires as the key mode of global government reconfigured global food relations in both the nineteenth and twentieth centuries. Friedmann and McMichael (1989) characterised the global-scale set of food relationships that emerged after the food shortages that afflicted the 1840s as the 'First Food Regime' (later also naming this the Imperial Food Regime). After around 50-60 years of stable growth in the First Food Regime, a period of crisis emerged in which world wars and global depression overturned many of the certainties and securities of imperial food trading. Friedmann and McMichael (1989) argued that this set of mid-20th century transitions occurred across so many areas of the food system simultaneously (and strongly influencing each other) that they collectively comprise a shift in the whole food *regime* from the First (Imperial) Food Regime to the Second (Aid/Surplus) Food Regime.

Within each regime of relations, up to six key relationships – political/governance arrangements, labour relations, commodity complexes, trading patterns, farming systems, and consumer cultures – interlinked in a mutually reinforcing way during periods of stability or became disrupted or destabilised during periods of disintegration, crisis and transition. The

transition in the mid-20th Century was so profound as to be characterised as a fundamental regime-shift linking all these key relationships.

The strongest contribution of Food Regime Theory is that it disrupts any sense in which global food relations either follow some kind of linear, structural elaboration of global capitalism, or, alternately, have no wider pattern at all through the 20th Century (Campbell and Dixon 2009). What this approach allows is a theoretical focus both on periods of stability in global-scale food relations as well as the crisis period *between* regimes which exhibit dynamics of transition. While the generally agreed upon canon of Food Regime Theory sees two periods of regime transition happening during the mid-19th and mid-20th Centuries, theorists in this genre have also tried to adopt the approach to understand more contemporary 21st Century food relations (Arraghi 2003; Pritchard 2009; Burch and Lawrence 2009; Dixon 2009; Schermer 2015). What is notable is the concern that the original food regime accounts are too structural and deterministic (Le Heron and Lewis 2009), or left either the more material/ecological realm relatively unconsidered (Le Heron and Roche 2005) or underplayed the role of culture (Campbell 2009) as elements of the regime of relationships.

In opening up ecological and cultural dynamics, some of the new theorisations have moved towards the terrain of food sustainability and ecological dynamics. Of interest for the argument in this article are debates around McMichael's characterisation of contemporary corporate industrial food as the 'Food from Nowhere' regime (2002, 2005), a framing that has generated several counterpoints: Friedmann's (2005) Corporate Environmental Food Regime and Campbell's 'Food from Somewhere' Regime (2009). These demarcate a particular space within the food regime narrative where food waste might fit as part of a wider incorporation of sustainability claims into political actions, practices and institutional relationships that operate according to a discursive logic that is grounded in opposition to the

dominant industrial regime. These recent discussions demarcate a critical area for this article: is the current political activity around food (and food waste) characteristic of a new regime or evidence of counter-regime politics (or, indeed, demonstrating cultural and political action that is not aligned with a food regime framework at all). In order to address this area of contemporary food regime discussion, we wish to examine both the nature of the current 'waste transition' and the role of food waste as a participant in earlier regime transitions. By doing so, we hope to demonstrate the way in which evidence might be generated for the role of food waste in these larger transitions and how they might influence a reframing of food regime theory itself.

In order to create this theoretical reframing, we wish to examine, in more detail, three elements of what we call waste transitions. First, we review the contemporary transition that formed the starting point to this enquiry. We wish to examine the extent to which the current transition reveals the cultural visibility and invisibility of food waste. We will then go on to contrast this with two earlier periods which sit on either side of the great food regime transition in the mid-20th Century.

1. From Invisibility to Visibility in the 21st Century?

In the aforementioned *Sociological Review Monograph* dedicated to the social science of food waste, the editors (Evans et al 2013) suggested that one of the most intriguing aspects of the contemporary politics of food waste was not only how novel it is in terms of sociological scholarship, but that this reflects a prior 'invisibility' of food waste in popular culture, politics and social practice. They did not dispute that small protest movements (e.g. Freeganism) have been contesting (since the 1970s) elements of contemporary food retailing, principally those that exacerbate food waste, nor claim that

food waste was of no concern to governments and their populations prior to the advent of the current waste transition. Their starting point is that wider political recognition of food waste as a specific problem in its own right (as compared, say, to a proxy for inefficiencies in the food chain) is relatively recent and that the wider consciousness in popular culture (and politics) of a food waste crisis has only emerged in recent years. In collecting together different, but linked, elements of this shift in both popular and academic interest in waste, Evans et al (2013) suggested that all these dynamics might be collectively understood as a 'waste transition' from invisibility to visibility in the cultural life of food.

In their discussion this widespread re-emergence or re-visibility of food waste is taking place across three arenas of social and political life. First, they suggest that sudden ecological shocks and crises came together with effects of the Global Financial Crisis in 2008 to shift political and public interest into the combined economic and ecological threats to future sustainability. For example, the escalation of concern over Climate Change and Peak Oil, combined with spikes in food prices in 2008, 2011 and 2012 (Rosin et al. 2012) brought concerns around the future of food supply back into public and policy discussion. In this context, the 'problem' of food waste has experienced a political awakening that was not evident even ten years before. Secondly, they draw attention to the evolution of environmental management frameworks in the late-twentieth Century such as the creation of the EU Landfill Directive (1999/3/EC). In response to this, the UK set up the Waste and Resources Action Programme (WRAP) – an arm's-length government body, technically a not-for-profit company that is supported by funding from the EU and the four national governments of the UK. WRAP initiated a high-profile campaign – 'Love Food Hate Waste' – in 2006 that began to bring food waste to wider public attention. In addition to campaigning activity, WRAP also collected and collated a range of metrics and measures on food waste – including the headline that UK households at the time were wasting 1/3 of

the food that they purchased for consumption – that were then mobilised in other fora to raise the profile of food waste as a social and political problem. WRAP initially focused on the metric quantification of household food waste (2008) which, it might be argued, had the effect of positioning it as an ‘end of pipe’ (Alexander et al. 2013) issue. Importantly, a range of other agencies set to work (see Evans 2014) in quantifying food losses and food waste globally and across the whole chain, most notably the United Nations’ Food and Agricultural Organisation (2011, 2013)⁵ These estimates stabilised the view that food waste, at least in the Global North, is a problem of retail and final consumption. Concomitantly, food waste in the Global South was framed as a matter of postharvest losses in food production resulting from technological failure and organisational inefficiencies.

Accompanying these policy shifts, Evans et al. (2013) intimate parallel shifts in activist and cultural politics. The two highest profile food waste activists – Tristram Stuart (2009) in the UK and Jonathan Bloom (2011) in the USA – published influential exposés of food waste. Alongside the activists, celebrity chefs have become important contributors to wider cultural recognition of food waste. Also, participating in this field of political action are more formally constituted NGO’s like Second Harvest which gather unwanted food for redistribution to the poor. Such activities are mirrored in myriad community-level endeavours where coalitions of local actors are attempting to change local waste practices, disposal and management. Accepting that post-consumption food waste is becoming a political issue in Western contexts, we note the emergence of organized efforts on the part of citizen-consumers to reduce the amount of waste that they generate by, for example, joining ‘bulk buying’ clubs. These clubs mirror longer-standing manifestations of consumer activism (cf. Gabriel and Lang 2006) insofar as

⁵ The novel tendency to quantify and measure food waste is clearly expressed in a recent 2013 report by the Institution of Mechanical Engineers. Representatives of this organization (Dr Tim Fox, personal communication) suggest there should be nothing surprising about engineers being at the forefront of this new trend and by extension, the Institute being active in food waste reduction activities.

they are concerned with the power of retailers vis-à-vis the food system and allow collectives of consumers to purchase from producers who share their values.⁶

Common to all discussions of food was the use of measurement and metrics to increase the visibility of the issue. Aside from simply stating the scale of the problem (*1/3 of global food production, 1.3 billion tonnes annually*), the significance of food waste was articulated (see WRAP 2012, FAO 2013, IME 2013) on the grounds of environmental impacts (*if food waste was a country its would rank third for greenhouse gas emissions after the USA and China*), global inequalities (*one in four calories is wasted and yet 842 million people do not have access to sufficient calories on a daily basis*) and economic losses (*the direct economic consequences of global food waste amount to \$750 billion annually*). Further, in the UK, many of these estimates were contextualised to show what they mean at a national level (*equivalent to taking 1/4 cars of UK roads*) and per household (*the average household wastes 6 meals per week and avoidable food waste costs the average household £470 each year*).

In the period since Evans et al. put forward their account of the current waste transition, it has taken a rather interesting turn, at least in the UK. Major retailers have become much more active and visible in taking measures to reduce food waste. While these currents have been gathering momentum since the start of the contemporary waste transition, the pivotal moment came in 2013 when Tesco – the UK’s largest supermarket – audited the amount of food that is wasted across its supply chain and by its customers, and released the findings (Evans et al. in press). Either side of this landmark, all of the UK’s ‘big four’ supermarkets and a range of others have taken, or pledged to take, action on food waste. Interestingly, the extent of their action is not limited to the waste that they are directly responsible for (arising through their own in-store operations). They are starting to assume responsibilities for waste that

⁶ See <http://www.smallfootprintfamily.com/how-to-start-a-food-buying-club>

arises elsewhere as a result of their power to influence the food system upstream (with suppliers) as well as downstream (with consumers) (see Evans et al. in press).

There also seems to be a sense that while WRAP was operating from the early 2000s, the level of commentary and prescription around food waste seems to have become even more acute since the twin food and financial crises after 2008. Put simply, in a period where austerity has become the main policy measure denoting fiscal 'responsibility', food waste has become a topic of concern for those advocating a more careful expenditure of reducing household income. In the wake of Stuart's (2009) and Bloom's (2011) exposés avoiding food waste was increasingly linked to the new austerity in household incomes and budgets. For instance the BBC 2 *Food & Drink* (27 January 2014) television programme presented a version of Stuart's information and castigation of 'the consumers' as one of the main culprits in wasting so high a volume of edible food – claiming that since food was so cheap it was thereby not valued.

Within this new genre of austerity and avoidance of food waste, one particularly well known advocate in the UK is Jack Monroe, a young woman on public support attempting to feed herself and small child on very limited means who began a blog of her recipes and experience of coping, and has since appeared on TV shows. In her recipe book *A Girl Called Jack: a 100 delicious budget recipes* (Monroe 2014) she ends her introduction by stating her belief that:

...in order to tackle food poverty and a culture of microwave meals with dubious ingredients, cooking at home needs to be presented as less glossy, less sexy, less intimidating and more accessible, more about what you can make from what's in the cupboard, to spend less, *reduce waste* and knock up a meal in ten minutes when you get home from work, or

when you have a toddler tugging on your leg. (Monroe 2014: 10 emphasis added).

Monroe's blog and book provide one example of a number of new offerings. For example, Canadian journalist Cinda Chavich opens her cookery book *The Waste Not Want Not Cook Book* with reference to evidence of the amount of food wasted and talks of 'perfectly edible (and cosmetically perfect) food (being) plowed back into the fields to artificially reduce supply and prop up prices' (Chavich 2015:1). The immorality of waste, the contribution to global warming, along with the economic cost are all cited as reasons for 'educating yourself on the issue... to find new strategies to reduce your... food-based carbon footprint...' (Chavich 2015:1).

On reflection, the sum of these actions by activists, policymakers, chefs and retailers describe a compelling new arena of political action and change. Compared to only a few years earlier, food waste has become a site of action. It is increasingly being measured, evaluated and subject to normative statements that morally position food waste as bad. In recognising that this political space is something new - representing an interesting transition in political and cultural action around food - we must also admit that a new morality of food waste is not neatly counter-posed to a prior epoch where wasting food was the subject of moral approval. Rather, our argument is that something has shifted in the cultural presence of food waste which can be best characterised as a transition from invisibility to visibility. In order to create some deeper context to this set of claims, we now want to revisit two earlier periods in the history of food waste that provide the compelling backdrop to the current transition in waste politics. They are positioned, not co-incidentally, on either side of the great food regime transition that forms the central pivot of the 20th Century world of food. These are: the period prior to and including WWII in which we argue there was some evidence of a higher level of cultural visibility of food waste, and then the period after

WWII in which food waste seems to just disappear from view during the Second Food Regime.

2. Evidence of Cultural Visibility of Food Waste: From Household Food Management to Wartime Dearth.

A more complex account of the cultural visibility of waste prior to the second food regime poses multiple methodological challenges simply because the discussion of food waste is itself so new. There has not been any significant historical discussion of food waste in modernity and the historiography is notable by its absence. It means, then, that we are not reinterpreting the current body of scholarship on food waste in historical perspective. Rather we are looking at an area where there is a challenging lack of historical evidence (mirroring the absence of established traditions for studying the phenomenon). While a superficial reading of pre-WWII history suggests a greater cultural visibility for food waste, there is relatively little primary material, requiring resort to oblique means of getting some purchase on the matter.

There are various candidates for this oblique approach and none of them allow for any nuanced distinction comparing the periods covered by the First Food Regime and the between-regime period of crisis and disruption. At best, there is no possibility (yet) of a nuanced history of the transition of household food practices from the late First Regime into the decades of crisis from the 1920s. However, a narrative can be built that suggests a heightened point of concern during and just after WWII in which the underlying strata of household-level concern over food management is joined by a growing chorus of expert discourse and government intervention during the period of food supply crisis around WWII. Even though this cannot be used to provide a satisfying narrative of food waste under the First Food Regime, it does end up at the critical historical pivot for understanding the emergence of the

Second.

The first set of oblique sources are records created in the process of registering food waste for some reason or another by municipalities or governments (particularly in wartime). The second group of sources of information are records of commentary, notably exhortations to prevent food waste.

The range of reasons for mounting assessments of food waste are various. Some of the earliest arise from pressures on municipal authorities to deal with the volume of rubbish generated in urban areas⁷. So, for instance, Melosi is able to rely on contemporary sources to record the per capita generation of garbage in Manhattan between 1900 and 1920 (Melosi 1981:23), as was Alexander in his discussion of the consequences for the management of refuse resulting from the European use of different fuels used for domestic heating and cooking compared to the US (Alexander 1993:7). Rather later, wartime presents a wholly different reason for attending to food waste. For example, writing in a personal capacity but giving his institutional affiliation as the US War Food Administration Kling published an article, using publically available 1930s data, arguing that the size of the supply does not depend entirely on production: 'the amount that reaches the consumer depends on the care taken in marketing and using it' (Kling 1943: 848).

And a different angle on wartime food provision is found in the need to know how to calculate the size of the rations to provide for serving soldiers that allows for 'calorie loss from plate waste' – 4 per cent is recommended by Arneil and Badham on the basis of their investigation for the British Army

⁷ Over the last couple of centuries, there have been various reasons for attempting to assess the scale of food waste creation in particular and rubbish generation in general. Until the 1970s assessments of both tended to co-occur. The predictable absence of standardised bases for classifying the components of total waste means that comparisons between assessments at any one period let alone over time are hard and require a good deal of approximation. Classifications also tend to vary according to the purpose of the assessment and, in all likelihood, to local circumstances as well.

(1949: 312).

Wartime also provided an outlet for discussion of the long standing central concern of nutritionists of assessing nutritional intake. This includes an opportunity for assessing what, once served, does or does not get eaten. An article published barely a year after the end of WWII and before food rationing in the UK got *more* severe, recorded that some people not only leave the fat from a serving of mutton, but that 'some eat only about a third of the meat helping'. This led to the sage observation that '(T)his shows the futility of assessing individual food intake from the amounts served' (Andross 1946: 158).

Alongside these official accounts, a second style of historical data can provide slightly more cultural texture as to the desirability of avoiding food waste. As noted in the recent edited collection:, '(F)ood waste is especially visible when its prevention is being counselled' (Evans *et al* 2013:12). Accordingly, the need for avoiding waste can be shown to be consonant with urgings for thrift, good budgeting and living without extravagance. In this way, household management manuals and cookery books from the late nineteenth and early twentieth centuries all include a significant degree of 'prevention being counselled' in relation to food waste.

Evans *et al* (2013), while advocating some caution about uncritical use of these sources, did list seven typical cookery books or household manuals that either included cookery sections or sections which emphasised good household budgeting or both. Themes running through them include: 'the labour-saving house' and living within one's means; a vocabulary of efficiency and convenience; injunctions for the thrifty management of the turn-over of cupboard supplies (e.g. tapioca, barley and macaroni) that depend on a grasp of what nowadays would be called shelf life; general all-round counsel of frugality such as '(I)n the afternoon use your range to burn

up rubbish' as a way of economising on fuel (Anon 1935: 89). Keeping a stock pot is also advised. A 1933 manual published in London carrying the reassuring title of *Everything Within*, declared that 'every good housewife should keep a stock-pot going. Into it must go every scrap of meat and bone that might otherwise be thrown away...' (Marshall 1933:36).

Putting this assortment of cookery book and household management sources together with the wartime assessments of army (and public) rations, suggests that an important focus for investigation must be the historic pivot that takes place around WWII. Evans et al (2013) concluded their discussion with the observation that by and large the refrain of avoiding wasting food and using up leftovers 'seems to fade as the children and grandchildren of those growing up in World War II became increasingly used to feeling better off than their forbears' (Evans *et al* 2013: 14).

This cross generational change is borne out in a modest, but we propose striking, project that Mariella Farrugia (2013)⁸ conducted in Malta - an island, it will be remembered that spent almost two and a half years under siege during WWII. As part of the study of attempts to trace the impact of the siege-induced food shortages on the war - and subsequent generations - Farrugia interviewed eight very elderly Maltese residents. "Hunger, the majority suffered from hunger. Nobody was satiated ... there was no room for waste" said one man. They talked about the way what would have been animal feed before the war, became an essential part of the human diet. As Farrugia notes: 'the carob bean commonly associated with animal fodder, took on a completely new status. Participants recall people flocking around sellers to buy some chickpeas or one bean for a penny.'" And the same elderly man explained that some people "used to sell figs, in summer some prickly pears, eh, they did not leave it to rot in the trees as they do nowadays eh, and not even one was left! [laughs]."

⁸ We are grateful to the successful candidate for kind permission to quote from her dissertation.

The preoccupation with wasting not a single scrap of food is underlined by Ferrugia's reporting that she was told that men would be hard at work on two bombed transport ships that sank before they were fully unloaded. She goes on:

"The food situation was so critical that the authorities contracted companies to employ divers and retrieve whatever was possible from the burned and sunken goods. (One of her interviewees described) how they recovered burned cans of preserved food – sidetracking guiltily to admit pinching jelly and raisins for his mother in a bid to curb hunger pangs." (Ferrugia 2013: 81)

In summary, we need to emphasise that the historiography of this period is very patchy in relation to food waste. Certainly there is a large and well known literature on wartime waste propaganda (eg Bentley 1998, Veit 2007 and Witkowski 2003 for the US, Park 2013 for South Korea and Helstosky 2004: 99 for Fascist Italy) but far less on actual day to day practices and even less on the kinds of post-war transition out of scarcity that were revealed in the Maltese case. Drawing on these diverse sources we are only cautiously able to assert that food waste was present as a concern in the day to day management practices of household members themselves over a long period but that wartime brought a series of changed circumstances that accelerated both personal and governmental concern about wastage. Beyond that, the opportunity for closer historical scrutiny is open for subsequent scholars. At the very least, the cause is compelling for, in a prophetic reflection of later concerns about waste, Kling reflects on the challenge of dearth in wartime, that: '(I)n this time of need, the Nation may well again practice the prudence of its forbears.' (Kling 1943: 859).

3. Post-WWII: The Second Food Regime and Food Surplus.

Given the focus on food wastage that is evident in the years prior and immediately after WWII, there is an arguable contrast that can be made with a later sense of relative invisibility of food waste in the post-war years. This is closely aligned with the expectations of a Food Regime approach in that the post-WWII pivot to the Second Food Regime is a central feature of most of the early work in this genre. We are interested in historically locating one particular transition that lies in the middle of this period: the historical moment when it becomes culturally acceptable to waste *edible* food – for this, it seems to us, is the most notable feature distinguishing the twentieth century version of the phenomenon of food wastage from earlier instances. It also goes to the heart of the cultural dissonance between generations in Malta.

The food regime approach has been influential in accounting for the decades immediately after WWII as being ones that involved a dramatic change, inversion or rupture in the prior century of imperial food relationships. This account builds the narrative around transitions in the political framework for food production, the political management of agricultural productivity (and surplus), and key economic and technological transformations that then ensued.

This 1950s food regime ‘transition’ comprised the following elements (Campbell 2012):

- A desire for ‘food security’ at home and ‘solving world hunger’ abroad.
- A shifting locus of food supply from the peripheral colonies of Empires back to production in the core industrial nations themselves.
- An abandonment of agricultural free trade in favour of domestic subsidization of agriculture within core industrial countries themselves.
- A shift from extensive pastoral expansion in the colonies to industrialised intensification of agriculture in industrial countries.
- Encouragement of intensification of agriculture through subsidies,

tariffs, investment incentives and land zoning.

- Increasing focus on agricultural commodities that were amenable to industrial-scale production (and consumption).
- Mechanisms to manage the increasing surplus of food being produced – initially in the US and then, by the mid-1960s, within the UK and Europe.
- The establishment of policies and practices to create ‘food aid’ as a major political and economic feature of the Cold War.

This new ‘Cold War’ regime had two over-arching effects by, first, shifting the main locus (and policy focus) of agricultural production away from the former colonies and back to the farming regions of the Developed World and, second, instituting policy frameworks (subsidies in Europe, food aid policies in the USA) that decoupled food production from market demand by directing farmers to simply produce the maximum possible amount of food from their land. The result was what Friedmann (1993) termed the ‘surplus regime’: where production of excess food formed the guiding logic of the new regime. Under this new supportive regime, corporate interest in investing in agricultural technologies, inputs and processing escalated dramatically, and the first aim of the regime – food security at home – was achieved in a relatively short length of time. This enabled both the re-arrangement of global food relations around the new strategy of food aid (Friedmann 1993; George 1977) which disposed of food surpluses in ways that would benefit Cold War strategies, as well as a domestic market in the Western World that became increasingly saturated with cheap, industrially produced, foods.

Just as the new food surplus regime became a global political force in the 1950s and 60s, the foodways, products and practices of the same period were inevitably influenced by the massive cheapening and increased availability of foodstuffs in the 50s and 60s. This was evident in both the UK (where rationing ended in the early 50s) and the US (where the industrialisation of

agriculture was increasing the volume and decreasing the price of basic foods). The availability of cheaper food ingredients meant new commercial food practices and strategies were possible. It enabled corporate investment into techniques of extensive food processing to create a wider variety of (value added) products from a narrow base of cheap food commodities (Levenstein, 1993) (see also Goodman and Redclift, 1991; Goodman et al., 1987); while the emergence of fast food franchises (including the culturally iconic development of the hamburger, soda and fries); an elaboration of the branding and advertising of food; and a trend towards what Nestle (2003) calls the 'supersizing' of food, demonstrate the potential for commercial elaboration of new food styles and products within a regime of increasingly cheap food ingredients.

This set of social consequences arising from changes to the price and volume of cheap foods can only be understood alongside a wider ensemble of food relations. Other social transitions were taking place in the 1950s and 1960s that, while sociologically highly interesting in themselves, are briefly reviewed here only insofar as they contributed to changing dynamics around food surplus, food availability and the wasting of edible food.

First, there were a cluster of changes to retailing patterns and food purchasing activities. This was the era of transition to the 'weekend shop' - associated with the spread of car ownership - and away from a more regular and specific purchasing of food for specific meals or several days of planned cooking and eating. The weekend shop implies the purchasing of larger, bulk quantities of food. The second dynamic was the suburbanisation of residence in cities and the invention of the supermarket (and then the shopping superstore) both of which emphasise the convenience of one-a-week shopping but are also coupled with the operation in a retail strategy based on bulk purchasing by shoppers. The arrival of supermarkets and other retailing mega-stores increased the power of retailers to manage supply chains and

inventories and to use particular retailing tactics to dispose of 'surplus' food in their own inventories – mainly into the shopping carts and baskets of their customers notably via BOGOFs⁹ where the price of an article was reduced by purchasing one extra.

Alongside the shifting household purchasing patterns are other parallel trends. In particular, the emergence of technologies of preservation, from ubiquitous refrigerators to packaging, food storage containers and plastic wraps and foils. It is a truism of this period that the more the capacity to preserve food increased, the greater the amount of food that was stored and then disposed of as waste (Leach 2014).

We argue that it is the assembling of all these factors that created the conditions for an erasure of food waste from cultural discourse around food. In a world where all the political and cultural emphasis is being directed towards the excessive production of abundant and cheap food, it is: "...not difficult to imagine frugality and careful household management offering a poor fit with the 'zeitgeist' of the Cold War food regime." (Evans et al. 2013: 15). What these all add up to is what we argue to be an important new dynamic in the cultural acceptability of food waste: the disposal of *edible* food. Previous times of plenty had seen food wasted as a form of occasional status display, or management of leftovers urged as part of prudent household management. This cultural dynamic seems different from earlier eras. By the time we have moved away from the austerity and rationing of WWII we reach a point where an unreflexive element of social life is the luxury of disposing of potentially edible food. The broader structural conditions of the new food regime had provided an environment where food waste is not so much consciously rejected as a matter of cultural concern as just completely erased from daily life.

⁹ **Buy One Get One Free**

Another way of understanding this transition is through the lens of risk. We would suggest that the post-WWII transition involves changes in a very particular kind of cultural understand of food and risk, namely the risk of food scarcity and hunger. The sheer abundance of food in the post-war period takes away one of the fundamental risks facing households which, by implication, influenced the kinds of household food management practices and food planning detailed for the period discussed in the previous section. Once food is more abundant, a set of practices directed towards management of food to ensure none was wasted to avoid going without more readily becomes redundant. As Evans et al (2013:15) suggest: “food waste has no place in such relationships, primarily founded as they are on productivity, efficiency and excess. The idea of being scientifically clever about how to deal with food waste seems out of touch in an era of celebration of massively excessive food production.”

The disappearance of the risk of food scarcity in food culture in the 1950s and 60s and the not coincidental cultural erasure of food waste as a daily concern in households, provides an initial position from which we can now return to the contemporary situation and ask some tentative questions as to why food waste has returned to visibility as a cultural and political concern in the 21st century.

Theorising Waste and the Food Regime: Continuity or Contestation?

At the outset of this paper, we set out a number of areas (adapting and expanding the account put forward by Evans et al. 2013) in which there seem to be compelling new dynamics emerging which characterise a new visibility of food waste. For the majority of this paper, we have used the theoretical framework of Food Regimes to help identify both the historical moments of transition and the complex periods in between historical regimes which characterise some large structural changes in food relations during

modernity. The Food Regime approach has allowed us to set the broader historical context around a key period between the First and Second regimes when food waste was more highly visible as well as a pivotal historical transition after WWII when the second regime was consolidated and food waste culturally became much less visible.

If we use Food Regime Theory as the primary theoretical lens to understand the present situation, however, there are fewer easily appraisable orthodoxies available to frame the complexities of the current moment. Debate within Food Regime Theory tends to involve discussion as to the emergence (or not) of a 'third food regime' under neoliberalism; either in continuity with prior industrial regimes (McMichael 2002, 2005) or as a counter-regime to the dominant food regime (for a discussion see Campbell and Dixon 2009). Several recent contributions articulate these positions in ways that sit relatively closely with the concerns of this paper. The 'continuity' argument is well articulated in Burch and Lawrence's (2009) work on the new power of supermarkets in which they argue the power of corporate supermarket chains is entirely consistent with what McMichael (2002, 2005, 2009) describes as the 'food from nowhere' regime (his modified title for the 'corporate industrial food regime') of invisible supply chains, commoditized processed products and a sense of annihilation of the spaces and locations of food production. This is an interesting theorisation, as the idea of 'food from nowhere' highlights the same dynamics of invisibility that we attribute as arising in the Second Food Regime.

The other contemporary theorisation of food regime dynamics is the idea that there are important counter movements contesting food from nowhere. In deliberate contrast to 'food from nowhere', Campbell (2009) described a 'food from somewhere' regime (similarly described by Friedmann (2005) as the 'corporate environmental food regime' - a term also used by Levidow (2015)) as a smaller cluster of food relationships that act as a point of contest and

contrast with the industrial 'food from nowhere' regime. Food from somewhere encapsulates the global emergence and consolidation of 'visible' foods bearing overt messages like certified organic, fair trade or kosher foods, which sit in complex relationships with professional audit agencies, certifiers and supply chain managers in order to stabilise constant and reliable supply to major retailers. These foods directly obtain their meaning because they contrast with McMichael's 'food from nowhere'. Without the industrially-produced, generic, commodities that fuel the industrial regime, there would be no market space for alternatives to derive their meaning together with mobilising their implicit critique of industrial foods.

This combination of food from nowhere and food from somewhere clearly provides the most likely ingress into contemporary waste politics in the food regime genre. They demarcate the key theoretical questions that food regime theorists tend to seek: is there a new regime (or counter-regime) or is there simply a degree of continuity with existing mainstream structures? For the rest of this article we want to explore whether our evidence supports either of these options.

First, the idea of food from nowhere has obvious relevance. The idea of food relationships disappearing from view with the contemporary industrial food regime has parallels with the similar erasure in the post-WWII period. However, the food from nowhere account does not look back as far as the 50s and 60s and hasn't incorporated food waste into its narrative of erasure.

Second, there is some difficulty in translating the kinds of activities being undertaken around food waste with the idea of a counter regime founded in global-scale 'food from somewhere' relationships. In the Campbell (2009) account there is no evidence of any overlap (yet) reported between the sustainability claims that underwrite 'food from somewhere' and any closely

aligned claims advocating avoidance of food waste.¹⁰ While there are some nascent activities happening in supermarkets around avoidance of waste (the 'ugly food' initiatives in France and the UK being good examples (Mitchell 2015)), these do not align with the food from somewhere theorisation. This is because the key mechanism that characterises 'food from somewhere' as a counter-regime is a particular style of food governance, particularly those private sector governance mechanisms which comprise the audited, certified, accredited demarcation of particular foods as 'healthy', 'sustainable', or 'environmentally friendly'. These governance mechanisms do not extend to food waste (yet) to any great degree, even though it would be quite possible for them to do so. One cannot yet browse the aisles of major supermarkets and ponder paying a price premium for a specific audited, labelled product touting extra value by being 'waste friendly'. Until that happens, the kinds of waste activities now being seen in supermarkets cannot be described as being driven by the dynamics of the 'food from somewhere' regime. The animating dynamics behind such actions must lie elsewhere in a space that is not yet being articulated in a food regime framework.

What this shows is that while food regime theory has proved useful in its more historically-oriented iterations for identifying the kinds of broad scale transitions happening in the global food economy, the dominant theoretical ideas being used to explain contemporary dynamics – the continuity of industrial regimes or the emergence of counter-regimes – do not translate directly into the kinds of waste politics and response that we outlined earlier in this article. Partly this reflects the degree to which large historical transitions are easier to identify and characterise once some considerable time has passed. But it also, we suggest, reflects the degree to which food regime theory struggles to account for the kinds of subtle cultural shifts that may be taking place (Campbell 2009), to locate some of the materialities that are

¹⁰ In fact, there is some evidence, as argued by Gille (2013), that the new regime of standards and quality measures is actually exacerbating food waste by concentrating on the management of risk rather than the mitigation of waste as the central logic of these systems.

highlighted in the case of food waste (Gille 2010, 2012), or to characterise oppositional political actions that sit outside the structures of a counter-regime.

Elaborating the Cultural Visibility of Waste: Measurability, Austerity, Edibility.

We suggest that our historical consideration of waste transitions provides a useful opportunity to consider the kinds of dynamics that can both expand the focus and nuance of a contemporary food regime theorisation, but also, more importantly, help us to understand some of the cultural and political character of the current waste transition. Most notably, three things emerge from our analysis which may help us more securely locate what we mean by a 'cultural transition' in the visibility and invisibility of food waste.¹¹ These are the political/cultural impact of *measurability* of food waste, household-level responses to the politics of *austerity* and the change from the cultural positioning of waste as 'management of leftovers' to 'disposal of *edible* food'.

1) *Measurability*. One small, but important, element of the shift in cultural visibility of food waste is the degree to which it has become more measureable. In our earlier consideration of the contemporary waste transition, we suggested that the work of WRAP and others was of considerable significance in contributing to the greater contemporary visibility of food waste. Here we would simply emphasise that much of this work was mainly generating a series of measures of food waste. The existence of these measures (and the culturally and politically confronting realities of

¹¹ While we think these three are instructive, they are by no means exhaustive. We present them primarily to point towards the kinds of areas where the new scholarly interest in waste as a socio-cultural phenomenon might productively develop new avenues and styles of enquiry.

waste they suggested) changed the terms of cultural and policy discussion.¹² Every subsequent actor, from government agencies to celebrity chefs to the Pope, deploys these measures to describe the problem of food waste. The social and political power of these visible sets of measures of food waste is interesting. While there have been no prior historical periods, to our eye, where a similar set of measures developed such influence, there are earlier historical hints at a similar process at the level of household management of food and waste. In the more waste-visible era prior to the Second Food Regime, cookery books provided a series of measures relating to the management of leftovers. Here we do not simply mean the measures at the heart of any recipe book, rather a metric of food usage that calculated the wise use of available foods whether through primary use in meals or subsequently in the parcelling out of remaining food through leftovers. There is an, albeit slightly abstracted, culture of measurement at the heart of these cookery books (and wider cultural repertoires) that became much more heightened by official concern about nutrition and diet during the period of rationing, but then was erased in the surplus regime of the 1950s and 60s. Clearly, these kinds of measures are located in micro-level household practices and management and do not, regrettably, have the same political heft as evidenced by the macro-measures deployed by WRAP and promoted by major government agencies.

Seen in this light, the great transition appears to be one in which the presence of measurement of food/waste at the household level declines post-WWII as food becomes more abundant, cheaper and is increasingly industrially processed i.e. prepared outside the home, coupled with the recent innovation of a set of *national* measures of food waste highlighting the degree to which this had slowly disappeared at a number of social and political levels.

Through this lens, the cultural visibility of food waste is related to the cultural

¹² This interest in measurability is strongly influenced by recent work on metrology by economic geographers (see Rosin et al *under review*).

measurability of both food and food waste.

2) *Austerity*. Of the three dynamics we wish to highlight in this discussion, austerity fits most closely with the theoretical framing of orthodox Food Regime Theory. If the overwhelming material reality of the Cold War food regime was the emergence of significant and sustained food surpluses, this then provided a backdrop to subsequent decades in which the underlying structural features of the global food system continued to deliver ever cheaper food to citizens of the Developed World. This trajectory was abruptly challenged during the World Food Crisis of 2008-2011 which played out both in the real price of food commodities (which has eased since the extreme peaks of the 2008-2011), as well as the decreasing capacity of household spending for many in the Developed World. Following the financial crisis of 2008 and the introduction of austerity as a watchword of neoliberal governance, economies have shrunk, jobs have been lost, incomes (from both state support as well as wages) have, (disproportionately for sectors of populations who are already disadvantaged) gone down and food prices initially seemed to increase. These are starkly different material conditions from those which underpinned decades of growth and elaboration of the Second Food Regime.

Seen through the lens of austerity, the similarities between the higher visibility of food waste in the contemporary situation and the higher cultural visibility of food waste in the years of the Great Depression and during WWII rationing appear to be quite strong. One of the interesting characteristics of the recent genre of austerity blogs like Jack Monroe's and cookery books like that by Cinda Chavetz is that their direct connection of avoidance of food waste and the wider austerity environment is so starkly different from what was happening only a decade earlier. In light of these contemporary writings, Kling's (1943) warning not to lose the insights of our forbears about food thriftiness during the war years is particularly resonant.

The challenging of material consequences of austerity, even though such challenges are playing out in various cultural genres like the media should not be understood only as elaborating a more cultural dynamic to food regime politics. They are clearly also pointing towards the enduring relevance of underlying economic conditions of the kind that sit comfortably within even the most orthodox food regime framework.

3) *Wasting Edible Food.*

A third transition that emerged from our consideration of the mid-20th century pivot in food regimes and merits some further discussion is what we identify as the cultural transition from 'management of leftovers' to the wasting of edible food. The pre-War (and wartime) material, particularly from Malta, describes a shifting cultural positioning of food waste over those decades. Pre-war cookery books reflected the dominant culture of household management where all edible food that was not consumed in a meal immediately transitioned into the cultural category of 'leftovers' that were destined for future consumption. The Maltese material describes the culturally expressed displeasure at a post-War world in which leftovers become a diminished pathway for food usage and people begin the novel (and in the eyes of elderly Maltese, culturally reprehensible) practice of simply disposing of edible food.

This transition is particularly dramatic in the pivot around WWII and the emergence of the Second Food Regime, and the echoes of this transition emerge in some of the contemporary 're-visibility' of food waste. Part of the austerity narrative has been to reveal (and even lay blame for) the extent to which food insecure households were wasting *edible* food. The new cookery books and blogs and very prominently Tristram Stuart identify the need to reverse this tendency to waste food which is fresh, clean, and still nutritious as part of their core message. We offer this as an important potential insight

into the kinds of shifting cultural practices around food waste that are otherwise missed in the regime-scale narrative of change.

Conclusion: Theorising Food Transitions through Waste

At the beginning of this article we claimed that one of the taken-for-granted elements of contemporary scholarship and wider political/policy attention towards food waste is that we are in the midst of a major 'transition' in the visibility of food waste. In this article we have primarily used the food regime approach to consider the kinds of ways that food waste has featured in a previous major transition in global food systems. This was the dramatic collapse of the imperial order in the decades leading up to WWII and the emergence of a new regime of global food relations based around industrial food production within the core industrial countries. While the food regime literature is busily engaged with a variety of claims about the way in which 21st century food regime transitions might be taking shape, this literature has, with the sole exception of Gille's (2010, 2013) work on waste regimes, been entirely silent on the topic of food waste.

In attempting to re-insert waste into a food regime narrative, we stop short, however, of categorising the current period as representing another 'regime transition' as understood in the food regime approach. Whatever is happening, it is not characteristic of the 'food from somewhere' argument that suggests the existence of a new counter-regime comprising relationships creating product values through claims of greater sustainability. This admission helps us reveal some of the complexity and theoretical challenge of framing changes in food waste practices and politics. The prior major food regime transitions (both in the mid-19th and mid-20th Centuries) were predicated on the emergence and consolidation of culturally hegemonic sets of relationships around global food trading. In reflecting on our historical material, we suggest that these relationships had cultural visibility, they

revealed processes of political consolidation and, increasingly, solidity and they anchored complex chains of food production, supply, retail and consumption. As Campbell (2009) argued, they had cultural visibility and this visibility was a key element of the hegemonic power they established in each epoch. While the cultural hegemony of regimes has been recognised through what became visible and celebrated in each regime (for example, fast food and processed foods in the Second Food Regime) what has not been recognised enough is what was simultaneously being obscured.

Our reflection on the cultural history of food waste reveals the reverse side of the orthodox food regime framing. Rather than being characterised by what is being revealed and consolidated, food waste demonstrates what is being ontologically concealed and ignored. There are some hints towards this in recent food regime writing. In pointing out the invisible qualities of many current food system relationships, McMichael's (2002, 2005, 2009) narrative of a 'food from nowhere' regime reveals an insight that we argue should be expanded far beyond the dynamics he is identifying in the contemporary moment. Similarly, Gille (2013) argues for an ontological shift in analysis away from the prioritisation of value-creation to an equal analytic embrace of the dichotomous creation of an absence of value within waste regimes.

We suggest that the great food regime transition in the mid-20th Century demonstrated many different kinds of concealment as the everyday practices of household food management and careful consideration of food waste as an integral element of household food practices gave way to an industrial regime of surplus production, cheap food and an increasing invisibility of food waste. Seen in this way, the obscuring of food waste in the Second Food Regime prefigured the much wider erasure of food relations that became a standard feature of McMichael's contemporary 'food from nowhere' regime.

While the orthodox food regime analysis has been focused on the assembling

of new relations and the creation of (visible) cultural hegemony, waste forces us to see that each regime exhibits ontological powers of both assembly and erasure. The new configurations of food relationships in regimes both construct and conceal. While our focus is on the specific concealment of *waste* this is clearly not the only thing being obscured through the emergence of new regimes like the Second Food Regime (and its contemporary progeny – the corporate industrial food regime) as multiple and locally/culturally-varied ways of producing and consuming food were also marginalised and then rendered almost invisible by the new food regime.

Our argument is that seen through this ontological lens of concealment rather than that of visible regime relations, the current cultural and political upsurge of activity around waste is not actually demonstrating the formation of a new food regime. Rather, it comprises a particular historical moment in which the political and cultural practices which have previously rendered food waste relatively invisible under the dominant regime are now being contested by the opening up of new sites of political and cultural action that provide a challenge (whether intentional or not) to such obscuration. The three key areas we have chosen to highlight from within our own analysis are:

- 1) the curious power of measurement and metrics of food waste to render food waste more visible, to make the problem ‘thinkable’ and create a political space of action around food waste policies/practices

- 2) the way in which food poverty under neoliberal politics of austerity can be rendered more visible through popular discussion of management of food waste as a response to poverty

- 3) how the dominant culture of the post-war industrial food regime is challenged at its core through the re-engagement of a cultural politics of edibility of food that would otherwise be discarded.

Each of these dynamics acts in its own way politically and culturally to reveal waste and thereby to make particular kinds of action possible.

These three sites of cultural and political action are by no means exhaustive of the kinds of new practices and politics that characterise contemporary activities around food waste. However, these three dynamics are useful in that they reveal a particular *ontological* character to prior food regimes that has never been fully accounted for in previous narrations of regimes: the ability of a hegemonic regime to conceal and obscure other practices of food production and consumption. Accordingly, we choose – for now – to characterise the current moment, not so much as being part of a new food regime transition, but rather as a political moment when the political vitality and usefulness of those practices and political engagements which give greater cultural visibility to food practices are signalling a new kind of challenge to dominant food relations under the industrial regime. Food waste politics in the 21st century is, at its heart, not about the emergence of a new food regime, it is about rendering visible that which prior regimes have rendered invisible.

References:

Alexander, J. H. (1993) *In Defense of Garbage* Westport, Conn: Praeger

Alexander C, Gregson N and Gille, Z (2013) Food waste. In: Murcott A, Belasco W and Jackson P (eds) *The Handbook of Food Research*. London: Bloomsbury

Andross, M. (1946). Some aspects of the waste problem; cooking and plate waste. *The Proceedings of the Nutrition Society*, 4(2), 155.

Anon (c 1935) *The Complete Household Adviser* London: Allied Newspapers Ltd.

Araghi, F. (2003). 'Food regimes and the production of value: Some methodological issues'. *The Journal of Peasant Studies*, Volume 30, Number 2, January 2003.

Arneil, G. C., & Badham, D. R. (1949). The Losses of Edible Food Due to Plate Waste in Army Dining Halls. *British Journal of Nutrition*, 2(04), 310-313.

Bentley, Amy (1998) *Eating for Victory* Urbana & Chicago: University of Illinois Press

Bloom, J. (2011). *American wasteland: How America throws away nearly half of its food (and what we can do about it)*. Da Capo Press.

Burch, D. and Lawrence, G. (2009). 'Towards a third food regime: behind the transformation.' *Agriculture and Human Values*, 26 (4): 267-279.

Campbell, H. (2009). 'Breaking new ground in food regime theory; corporate environmentalism, ecological feedbacks and the 'food from somewhere'

regime'. *Agriculture and Human Values*, 26(4): 309-319.

Campbell, H. (2012). 'Let us eat cake? Historically reframing the problem of world hunger and its purported solutions', in C. Rosin, P. Stock and H. Campbell (eds), *Food Systems Failure: The Global Food Crisis and the Future of Agriculture*, London: Earthscan.

Campbell, H. and Dixon, J. (2009). Introduction to the Special Symposium: Reflecting on Twenty Years of the Food Regimes Approach in Agri-Food Studies. *Agriculture and Human Values* 26(4): 261-265.

Chavich, C. (2015) *The Waste Not, Want Not Cookbook: Save Food, Save Money, and Save the Planet*. TouchWood Editions: Victoria, BC.

Dixon, J. (2009). From the imperial to the empty calorie: how nutrition relations underpin food regime transitions. *Agriculture and Human Values*, 26 (4):321-333.

Evans, D., Swaffield, J. and Welch, D. (in press). Supermarkets, 'the consumer' and responsibilities for sustainable food, in T. Marsden et al. (eds.) *Handbook of Nature*, London: Sage

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

Evans, D., Campbell, H. and Murcott, A. (2013). *Waste Matters: New Perspectives on Food and Society*. Sociological Review Monographs (Book 60): Wiley Blackwell.

FAO (2011) *Global Food Losses and Food Waste*. Rome: Food and Agriculture Organisation of the United Nations.

FAO (2013) *Food Wastage Footprint Impact on Natural Resources*. Rome: Food and Agriculture Organisation of the United Nations.

Farrugia, M. (2013). *Food under Siege: A Historical Sociology Exploration into Food and Hunger during World War II and its Effect on the Maltese Population*.

Dissertation in part fulfilment of Master of Education in Health, Family and Consumer Studies, Msida, Malta: University of Malta

Friedmann, H. and McMichael, P., (1989). Agriculture and the state system, *Sociologia Ruralis*, 29 (2): 93–117.

Friedmann, H. (1993). The Political Economy of Food: A Global Crisis. *New Left Review*, 197: 29-57.

Friedmann, H. (2005). From Colonialism to Green Capitalism: Social Movements and the Emergence of Food Regimes. In *New Directions in the Sociology of Global Development*. Research in Rural Sociology and Development, Vol 11: 229-267. Elsevier.

Gabriel Y and Lang T (2006) *The Unmanageable Consumer*. London: Sage

George, S. (1977). *How the other half dies: the real reasons for world hunger*. Rowman & Littlefield.

Gille, Z. (2010). Actor networks, modes of production, and waste regimes: reassembling the macro-social. *Environment and Planning A*, 42(5), 1049-1064.

Gille, Z. (2013). From risk to waste: global food waste regimes. Chapter in Evans, D., Campbell, H. and Murcott, A. (eds.). *Waste Matters: New*

Perspectives on Food and Society. Sociological Review Monographs (Book 60):
Wiley Blackwell.

Goodman, D. and Redclift, M. (1991). *Refashioning Nature: Food, Ecology and Culture*, London: Routledge.

Goodman, D., Sorj, B. and Wilkinson, J. (1987). *From Farming to Biotechnology: A Theory of Agro-Industrial Development*, Oxford: Basil Blackwell.

Helstosky, C. (2004) *Garlic and Oil: politics and food in Italy* Oxford: Berg

IME (2013) *Global Food: Waste Not Want Not*. London: Institution of Mechanical Engineers

Kling, W. (1943). Food waste in distribution and use. *Journal of Farm Economics*, 25(4), 848-859.

Leach, H. (2014). *Kitchens: The New Zealand Kitchen in the 20th Century*. University of Otago Press: Dunedin.

Le Heron, R. and M. Roche. (1996). Eco-commodity systems: Historical geographies of context, articulation and embeddedness under capitalism. In *Globalisation and agri-food restructuring: Perspectives from the Australasia region*, ed. D. Burch, R. Rickson, and G. Lawrence. Avebury: Aldershot.

Le Heron, R., & Lewis, N. (2009). Discussion. Theorising food regimes: intervention as politics. *Agriculture and Human Values*, 26(4), 345-349.

Levenstein, H. (1993). *Paradox of Plenty: A Social History of Eating in Modern America*, New York: Oxford University Press.

Levidow, L. (2015). European transitions towards a corporate-environmental food regime: Agroecological incorporation or contestation?. *Journal of Rural Studies*, 40, 76-89.

Marshall A.C. (ed) (1933). *Newnes' Everything Within: a library of information for the home* London: George Newnes Ltd

McMichael, P. D. (1993). 'World Food System Restructuring under a GATT Regime'. *Political Geography*, 12(3): 198-214.

McMichael, P. D. (2002). La Restructuration Globale des Systems Agro-Alimentaires. *Mondes en Development*. 30 (117): 45-54.

McMichael, P. D. (2005). Global Development and the Corporate Food Regime. In *New Directions in the Sociology of Global Development*. Research in Rural Sociology and Development, Vol 11: 269-303. Elsevier.

McMichael, P. D. (2009). A food regime genealogy. *Journal of Peasant Studies* 36(1): 139-169.

Melosi, M. V. (1981) *Garbage in the Cities: Refuse, Reform, and the Environment, 1880-1980* College Station, Texas: Texas A&M University Press

Mitchell, D. (2015). Why People are Falling in Love with 'Ugly Food'. *Time Magazine*, 27th March, 2015. <http://time.com/3761942/why-people-are-falling-in-love-with-ugly-food/>

Monroe, J. (2014) *A Girl Called Jack: a 100 delicious budget recipes*. Penguin: UK.

Nestle, M. (2003). *Food Politics: How the Food Industry Influences Nutrition and Health*, Berkeley: University of California Press.

Park, K.H., 2013. *State and food in South Korea: moulding the national diet in wartime and beyond* (Doctoral dissertation, Leiden University Institute for Area Studies (LIAS), Faculty of the Humanities, Leiden University).

Pritchard, W. (1996). Shifts in food regimes, regulation and producer cooperatives: Insights from the Australian and US dairy industries. *Environment and Planning A* 28: 857-875.

Pritchard, W. (2009). The long hangover from the second food regime: a world-historical interpretation of the collapse of the WTO Doha Round. *Agriculture and Human Values*, 26(4), 297-307.

Rosin, C., Stock, P. and Campbell, H. (eds.) (2012). *Food Systems Failure: The Global Food Crisis and the Future of Agriculture*, Earthscan: London.

Rosin, C., Campbell, H. and Reid, J. (under review). Metrology and Sustainability: using sustainability audits in New Zealand to elaborate the complex politics of measuring. *Journal of Rural Studies* (Special Theme: Metrologies and Materialities).

Sage, C. (2013). The interconnected challenges for food security from a food regimes perspective: Energy, climate and malconsumption. *Journal of Rural Studies*, 29, 71-80.

Schermer, M. (2015). From "Food from Nowhere" to "Food from Here:" changing producer-consumer relations in Austria. *Agriculture and Human Values*, 32 (1):121-132.

Stuart, T. (2009). *Waste: uncovering the global food scandal*. WW Norton & Company.

UNEP (2016). First-Ever Global Standard to Measure Food Loss and Waste Introduced by International Partnership. *United Nations Environment Programme Newscentre*. June 6, 2016.

www.unep.org/newscentre/Default.aspx?DocumentID=27076&ArticleID=36209&l=en

Veit, H.Z., 2007. "We Were a Soft People" Asceticism, Self-discipline and American Food Conservation in the First World War. *Food, Culture & Society*, 10(2): 167-190.

Witkowski, Terrence H (2003) 'World War II poster campaigns: Preaching Frugality to American Consumers *Journal of Advertising* 32 (1): 69–82.