# Green Citizenship at the Recycling Junction: Consumers and Infrastructures for the Recycling of Packaging in Twentieth-Century Norway

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**Abstract**

*This article investigates the making of the Norwegian recycling consumer-citizen by discussing recycling as both a cultural activity – an expression of environmentalist sentiment, an everyday habit and a social expectation – and a technological infrastructure consisting of disposal stations, legal frameworks, transportation systems and the recycling technologies themselves. Using a concept of 'recycling junctions' as a means of understanding historical recycling processes, the article focuses on beverage packaging to argue that effective recycling in the modern green state depends on a combination of technologically mediated convenience and green consumer-citizenship, involving a wide range of actors.*

At the onset of the twentieth century, reuse and recycling were common practices in the everyday life of Norwegians. Mostly driven by scarcity, people reused and recycled resources that were expensive or difficult to acquire. For them, the links between consumption and recycling were direct and immediate. The recycling activities that people engage in at the start of the twenty-first century are seemingly similar, but if we unpack them we can see that the motivations and mechanisms of recycling have changed considerably. For consumers in affluent countries like Norway, the value of recycling is more of an abstract thing, a way to create connections

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between everyday habits and the global environment. Recycling is no longer a result of individual scarcity, but rather an expression of citizenship, of following social norms and expectations, and of a wish to do something for the environment.

The idea of the green consumer-citizen is central to the Norwegian vision of a sustainable society.[1] But what does this mean? In general, citizenship implies that you belong to a community, with rights and responsibilities. Some forms of citizenship are acquired and assigned through national criteria: I am a Norwegian citizen, residing in Sweden. A consumer-citizen gains membership through his or her actions as a consumer: the objects we buy or don't buy, the brands we identify with, the communities we form around these brands or the organisations that speak on behalf of the consumer.[2] The green consumer-citizen can be seen as a subgroup of this category – a consumer who actively participates in society through his or her consumption habits, by choice and/or design, often motivated by an awareness of the full life cycle of any consumer products purchased. The recycling of consumer waste can be one expression of such green citizenship. Yet, a citizen does not operate in a vacuum. Political scientist John Barry has argued that states will not become green by themselves, but that they have to be pushed by green citizens towards environmental practices. At the same time, citizens need the green state 'to help and encourage them to cultivate those habits and practices that are constitutive of sustainability citizenship'.[3] What is missing in this model are the go-betweens, the mediating actors and organisations that facilitate and give shape to this relationship. This co-construction of the green state, green citizenship, cultural values and technological infrastructures is key to understanding not just the history of Norwegian recycling practices but also the particular ways in which the idea of sustainable development has been implemented in Norway.

This article investigates the making of the Norwegian recycling consumer-citizen by discussing recycling as both a *cultural activity* – an expression of environmentalist sentiment, an everyday habit and a social expectation – and a *technological infrastructure* consisting of disposal stations, legal frameworks, transportation systems and the recycling technologies themselves. The article focuses on beverage packaging in particular, arguing that the combination of technologically mediated convenience and ideas of green citizenship has been a particularly powerful enabling factor in the history of Norwegian consumer recycling.

Historical studies of consumers and consumption struggle to access the interests, values and motivations of groups of people that rarely leave much behind in terms of traditional historical sources. Indirect evidence such as statistics or archival material

[1] Environmental issues are frequent topics in the annual National Budget documents, which demonstrate that a key goal is to empower the consumer to make sustainable choices. See for instance Miljøverndepartementet, '14 Resultatområde 7 Andre verkemiddel', Prop. 1 S (2010–2011), www.regjeringen.no/nb/dep/md/dok/regpubl/prop/2010–2011/prop-1-s-20102011/20.html?id=618815 (accessed 17 Apr. 2013).

[2] Josée Johnston, 'The Citizen-Consumer Hybrid: Ideological Tensions and the Case of Whole Foods Market', *Theory and Society*, 37, 3 (2008), 229–70.

[3] John Barry, 'Resistance is Fertile: From Environment to Sustainability Citizenship', in Andrew Dobson and Derek Bell, eds, *Environmental Citizenship* (Cambridge, Mass.: The MIT Press, 2006), 39.

from the many organisations and actors that represent or regulate consumer behaviour can represent consumers' voices and interests, but this kind of evidence is filtered through the mediators. Retrieving and recreating the voice of consumers is therefore a challenging methodological problem. As a result, when scholars have attempted to understand the rationality of consumer choices as forms of political engagement and participation, they often focus on the mediating organisations and regulatory frameworks.[4]

This article will follow a similar approach by looking at *the recycling junction* – the point at which consumer recycling happens – as a way of teasing out the motivations and actions of historical recyclers. Such an approach is inspired by Ruth Schwartz Cowan's classic 1987 study of 'the consumption junction', which explicitly encouraged user-centred narratives of technological change.[5] Cowan argues that consumers are embedded in networks of social and technological relations that enable and limit choices. The consumer's point of view at the act of consumption thus becomes the most meaningful place from which to observe the network. If the consumption junction is 'the place and time at which the consumer makes choices between competing technologies',[6] the recycling junction is the time and place at which the consumer chooses to recycle or discard something. Such decisions depend on more than individual values; they involve competing sets of knowledge and information, disposal infrastructures, availability of new resources and goods, and time commitments, among other factors. A large number of actors beyond the individual consumer enter the picture here, including organisations, governmental agencies, and businesses. In Cowan's analysis, the consumption junction is the interface where technological diffusion occurs and where technologies begin to reorganise social structures. Ruth Oldenziel, Adri Albert de la Bruhèze and Onno de Wit proposed the term 'mediation junction' as a way to study the juncture where social actors and institutions negotiated the mediated design and the appropriation of new products and technologies.[7] A key insight from this focus on actor junctions is that consumption

[4] See for instance Mark Bevir and Frank Trentmann, 'Civic Choices: Retrieving Perspectives on Rationality, Consumption, and Citizenship', in Kate Soper and Frank Trentmann, eds, *Citizenship and Consumption* (Basingstoke: Palgrave Macmillan, 2007), 19–33; Alain Chatriot, Marie-Emmanuelle Chessel and Matthew Hilton, eds, *The Expert Consumer: Associations and Professionals in the Consumer Society* (London: Ashgate, 2006); Lizabeth Cohen, *A Consumers' Republic: The Politics of Mass Consumption in Postwar America* (London: Vintage, 2003); Matthew Hilton, *Consumerism in Twentieth-Century Britain: The Search for a Historical Movement* (Cambridge: Cambridge University Press, 2003); Gunnar Trumbull, *Consumer Capitalism: Politics, Product Markets, and Firm Strategy in France and Germany* (Ithaca, NY: Cornell University Press, 2006).

[5] Ruth Schwarzt Cowan, 'The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology', in Wiebe Bijker, Thomas P. Hughes and Trevor Pinch, eds, *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (Cambridge, Mass.: The MIT Press, 1987).

[6] Cowan, 'Consumption Junction', 263.

[7] Ruth Oldenziel, Adri Albert de la Bruhèze and Onno de Wit, 'Europe's Mediation Junction: Technology and Consumer Society in the 20th Century', *History and Technology: An International Journal*, 21, 1 (2005), 107–39.

and production should be examined symmetrically, in the same frame of analysis.[8] The recycling junction can serve as a way to consider consumer recycling activities together with the larger sociotechnical waste management systems that recycling feeds into.

Consumer product packaging is particularly valuable as an entry point to the recycling junction. Packaging historian Thomas Hine has argued that just as packaging can 'very powerfully communicate the satisfaction a product offers, they are equally potent symbols of wastefulness when the product is gone'.[9] Can consumer actions like recycling packaging waste help save a world in environmental crisis or do we need large-scale multilateral treaties to effect global change? In some of these debates, it seems as though recycling has the power to change the world. In other discussions, recycling is characterised as a useless green illusion.[10] One example I regularly face as a recycling historian is people asking if it really matters if they personally recycle their paper? What happens to it anyway? How can we know that the actions we take result in environmental benefits? Such questions challenge the links between recycling and effective environmental measures, between our everyday lives and our consumer-citizenship in the world. It is thus critical to evaluate the historical evolution of these linkages and how they influence actions at the recycling junction.

Questions like these demonstrate that waste and its potential for recycling opens the lid to very complex historical material. As historian Susan Strasser has argued, 'trash is a dynamic category'.[11] What is waste and what is not varies in different times and locations, and is partly decided at the recycling junction. The question of how we sort and classify matter in various categories appears everywhere in the history of waste, indicating that recycling is just as much about creating meaning as it is about getting waste out of the way. Waste composition and how we treat it can thus let us 'read' a society on a discursive level, uncovering its values and its affluence level, as garbage archaeologist William Rathje and Cullen Murphy have argued with great success.[12] In the case of Norway, the increasing professionalisation of urban waste management from the 1900s gradually made waste *someone else's problem*, no longer that of individual consumers but instead of systematic waste management infrastructures. This is the case with waste management in most of the western world, characterised by ever-larger physical and mental distance between the production, consumption and disposal of goods.[13] Simultaneously, recycling has been elevated

[8] Nelly Oudshoorn and Trevor Pinch, 'Introduction: How Users and Non-Users Matter', in Nelly Oudshoorn and Trevor Pinch, eds, *How Users Matter: The Co-Construction of Users and Technology* (Cambridge, Mass.: The MIT Press, 2005), 1–25.

[9] Thomas Hine, *The Total Package: The Secret History and Hidden Meaning of Boxes, Bottles, Cans, and other Persuasive Containers* (Boston: Back Bay Books, 1997), 6.

[10] John Tierney, 'Recycling Is Garbage', *New York Times*, 30 Jun., 1996; Heather Rogers, *Green Gone Wrong: How Our Economy is Undermining the Environmental Revolution* (New York: Scribner, 2010).

[11] Susan Strasser, *Waste and Want: A Social History of Trash* (New York: Henry Holt, 1999), 3.

[12] William Rathje and Cullen Murphy, *Rubbish! The Archaeology of Garbage* (Tucson, Ariz.: University of Arizona Press, 2001).

[13] Elizabeth Royte, *Garbage Land: On the Secret Trail of Trash* (New York: Back Bay Books, 2006).

to a key practice and ideology for sustainable participation in modern society. The relationship between the distancing of waste and the personal act of recycling begs us to ask, as economist Frank Ackerman has, 'if recycling is the answer, what is the question?'[14] Why do Norwegians recycle and what does it say about Norway?

This article explores the history of recycling junctions for Norwegian packaging waste in three temporal phases: the scarcity-driven recycling of the early twentieth century; the discarding of recycling practices in the post-war throwaway society; and finally the rise of environmentalism, green recycling and state-mandated recycling policies in an age of extreme affluence. We will follow the ways in which consumption and recycling are linked and unlinked at the recycling junction in the different phases. In conclusion, I examine the reconfigured relationships between the state, business actors and the consumer that form the basis of the modern recycling citizen.

## Thrift, creative reuse and scarcity (1900–45)

A hundred years or more ago, recycling was primarily a way to make scarce resources last longer. In the early 1900s, both urban and rural Norwegians actively reclaimed, reused and recycled materials from different waste streams on an everyday basis. For Norway, this was a period of rapid industrialisation and urbanisation, often summarised under the term *modernisation*.[15] These were turbulent times, characterised by class conflicts, unemployment and little political stability until Johan Nygaardsvold's Labour Party government came into power in 1935. A large number of Norwegians abandoned their old homes in the countryside to look for work, moving to cities where many faced poverty and poor living conditions.[16] The economic boom of the First World War and the subsequent bust intensified these problems.

Within this context of economic crisis and political instability, Norwegian households went through major transformations at the beginning of the twentieth century. Fewer households could afford or even find qualified maids, as young women increasingly found employment in factories. Instead, the housewife became both the worker and manager of the household. A large debate over the status and character of household work followed in the 1920s and 1930s, leading to the formation of new, national institutions and organisations working to professionalise the household and raise the status of household work.[17] In this debate, the household was often likened to a factory – a site for processing materials in an efficient, even scientific, manner. While the new housewife ideal undoubtedly centred on the growing middle class, working class women also contributed to this debate. Some promoted even more

[14] Frank Ackerman, *Why Do We Recycle? Markets, Values, and Public Policy* (Washington, DC: Island Press, 1997), 19.

[15] Francis Sejersted, *The Age of Social Democracy: Norway and Sweden in the Twentieth Century* (Princeton, NJ: Princeton University Press, 2011).

[16] Knut Helle, Finn-Einar Eliassen, Jan Eivind Myhre, Ola Svein Stugu, *Norsk Byhistorie: Urbanisering gjennom 1200 år* (Oslo: Pax Forlag, 2006).

[17] Finn Arne Jørgensen, *Tidens krav: Framveksten av det vitenskapelige husstellet i Norge, 1900–1940* (Trondheim: Institutt for tverrfaglige kulturstudier, 2002).

radical ideas for communal kitchens filled with efficient machines, liberating women from being 'a prisoner in their own home'.[18]

Throughout these often quite radical debates over what the household could and should be, the household continued to serve as a major site for reuse and recycling practices. Thriftiness and frugality were necessary qualities and a regular part of everyday life in a time of scarcity and economic crisis. For instance, the influential and popular Norwegian *Housewife Manual* from 1938, a more than 500 pages long book published in nine editions from 1930 to 1967, emphasised how food should not be wasted – and that it even 'brought shame on the housewife' to throw away food scraps.[19] This book, like the many others in the same genre that appeared around this time, devoted much space to proper maintenance of clothes and household items in order to prolong their lifespan, in other words to avoid wasting money and resources. This reminds us that 'waste' is not only a technical term, but also has moral connotations. Wasting was seen as sinful and counter to the gospel of efficiency that entered into the Norwegian kitchen discourse, particularly in the 1930s.[20]

Packaging waste had not yet become a big concern for consumers, as few consumer products were pre-packaged. Yet the management of the most common type of packaging in the early 1900s became the basis of modern recycling infrastructures. Glass beverage bottles formed a separate waste stream flowing between producer and consumer, as the bottles were much too expensive to discard after each use. Mass bottling of beverages gained momentum in Scandinavia during the last decades of the nineteenth century. When Swedish bottler Anders Bjurholm and cork cap factory owner Gustaf Emil Boëthius introduced standardised, industrially produced beer bottles in the 1880s, breweries organised a joint deposit-refund system for buying back the rather expensive bottles after use.[21] This became a common practice all over the western world, yet the degree of co-operation between different breweries varied. In Norway, most breweries had agreed to use standardised bottles since 1906 and could thus reuse each other's bottles.[22] These collaborative initiatives were generally organised by bottlers' trade organisations, and enabled the bottle loop between consumers and brewers to be relatively closed, with very little waste. Customised containers, such as post-1915 Coca-Cola bottles, also carried deposits, but could not be interchanged between brands and bottlers.[23]

This system was by and large successful, though not without flaws. For instance, every autumn during the fruit-harvesting season, bottlers all over Scandinavia would run out of bottles. Used bottles were not returned despite the bottle deposit, as

[18] 'Hvad er i veien med hjemmene', *Arbeiderkvinnen*, 5, 1936.

[19] Gunbjørg Benterud, Ragna Knudsen, Johanne Steen and Bergljot Torp, eds, *Husmorboken* (Oslo: Landslaget for Husstell-lærerinner, 1938), 95.

[20] Jørgensen, *Tidens krav.*

[21] Samuel E. Bring, *Anders och Pehr Bjurholms bryggerier* (Stockholm: Stockholms bryggerier, 1949), 116–17.

[22] Finn Arne Jørgensen, *Making A Green Machine: The Infrastructure of Beverage Container Recycling* (Brunswick, NJ: Rutgers University Press, 2011), 15.

[23] Finn Arne Jørgensen, 'Coca-Cola bottle, prototype (1915)', in Grace Lees-Maffei, ed., *50 Iconic Designs* (London: Berg Publishing, forthcoming 2014).

housewives preferred to use the bottles for homemade fruit syrup. At this particular recycling junction, the housewives considered the bottles' use value as higher than the monetary value or the obligation to return what was technically the bottlers' property. Norwegian bottlers responded by reminding customers of their ownership and that keeping the bottle was tantamount to theft.[24] Consumers' personal reuse practices thus latched on to business reuse initiatives, but often in a subversive way that counteracted businesses' intentions and interests. The bottles were not wasted as such, but the individual reuse practices of consumers limited the efficiency of the industrial systems that depended on returned bottles.

The household was not the only site for recycling practices. As in other European cities, rag pickers and scavengers went through rubbish bins looking for things that could be sold to junkyards and 'waste stores'.[25] An estimated 300 rag pickers formed the bottom layer of Oslo's waste hierarchy in the early 1900s, scouring the city for sellable waste materials. In the middle were the junkyards and waste stores. On the top, paper factories, bone meal factories, glue producers and shoddy (fabric leftovers) factories bought the waste the rag pickers collected – for them it was a resource that could be used in the production of new goods.[26] A complex network of actors thus engaged in waste management practices. These arrangements were not politically motivated, but mostly emerged out of a business perspective. It made financial sense for particular companies to purchase waste products for reuse and recycling. This represents a different form of recycling junction from the household one, bringing in raw materials from other sources and involving other actors and repurposing processes. In both cases, recycling decisions were generally motivated by scarcity and economic incentives.

The Second World War and the German occupation of Norway following 9 April 1940 had a strong impact on Norwegian reuse and recycling practices. Resource scarcity, particularly food, fuel, rubber and metal, became even more acute for consumers and businesses alike. Barter and salvage became necessary strategies for making ends meet. The severe reductions in imported goods limited their availability to consumers and businesses, and such situations were of course not unique to Norway.[27] Most of the previously described pre-war recycling activities continued, but with greater urgency and sanctioned by the government. Wartime recycling often targeted resources that people did not bother to collect and reuse in peacetime, as Heike Weber's article on the German reuse of kitchen slops in this issue demonstrates.

The household remained one of the most important sites for reuse and recycling during the occupation. For instance, the previously mentioned practice of reusing

[24] 'Hvem eier saftflaskene – De selv eller Hansen på hjørnet?', *Aftenposten,* 31 Aug. 1936, 7.

[25] Cf. for Germany: Heike Weber, 'Towards "Total" Recycling: Women, Waste and Food Waste Recovery in Germany, 1914–1939', in this issue; for Paris: Sabine Barles, 'Les chiffonniers, agents de la propreté et de la prospérité parisienne au XIXe siècle', in Delphine Corteel and Stéphane Lelay, eds, *Les travailleurs du déchet* (Toulouse: éditions érès 2011), 45–67.

[26] Inge Torstenson, *Fra nattmann til renholdsverk: Avfall og renovasjon i Oslo gjennom tusen år* (Oslo: ProArk, 1997).

[27] See for instance articles by Chad Denton, Heike Weber and Ruth Oldenziel and Milena Veenis, in this issue.

bottles for homemade fruit syrup grew even more common, taking bottles out of the loop that the bottlers simply couldn't replace due to the lack of coal for producing new bottles.[28] In 1941, the Norwegian Wine Monopoly responded by requiring customers to return old bottles before they could buy new ones.[29] This solution had occasionally been applied during shortages before the war, but proved problematic for both customers and retailers.[30] However, such unpopular measures were easier to implement in wartime.

The material from other types of empty containers such as tin cans and cardboard boxes also became attractive for reuse and recycling. In 1941, a Norwegian paint factory paid consumers three øre for tin cans in good condition. The factory ended up with a huge mountain of 100,000 cans, demonstrating both the surplus of used tin cans in Norwegian homes and the strong response a financial reward could have.[31] Also, many businesses ran out of cardboard boxes to pack and ship goods in, since people tended to burn them for heating during the winter. In 1945 they offered a payment for undamaged containers that could be reused in an attempt to solve the problem.[32]

Wartime recycling took place within a complex set of motivating factors. Recycling became a way of preserving and prioritising scarce resources in a situation that was simultaneously extreme and everyday. The Norwegian Ministry of Supplies (Forsyningsdepartementet), established in 1939, stepped in to actively support or mandate specific recycling practices, for instance when they banned the waste or destruction of food waste in 1942.[33] The hardships of war encouraged a particular kind of citizenship, where everyday habits were closely linked to the idea of the nation. In occupied Norway, one could find a very strong communal feeling in the resistance to the occupying powers, where old class distinctions were replaced by a new national identity, though the distinctions between the necessary co-operation of everyday life and active collaboration with the occupying Germans could sometimes be fluid and uncomfortable.[34] The Ministry of Supplies straddled this uneasy divide, simultaneously working to help ends meet for large groups of the population while setting and enforcing strict controls and regulations on behalf of the wartime authorities.

Until the outbreak of the Second World War, many resources were recycled based on clear economic and material needs and organised in mostly separate waste streams. These recycling efforts were often not formally organised by the state, but rather took place in a complex, informal recycling system comprised of a broad group of actors,

[28] 'Tomflaskeomsetningen gått tilbake til 10 pct. av det normale', *Aftenposten*, 18 Jun. 1941, 3.

[29] 'Tomflaskene – vårt nyeste problem', *Aftenposten*, 17 Apr. 1941, 2.

[30] Letters from frustrated customers appeared regularly in newspapers. See for instance 'Motstridende systemer', *Aftenposten*, 1 Dec. 1927, 7; 'Det totalitære tøv med tomflasker', *Aftenposten,* 30 Nov. 1946, 4.

[31] Inge Torstenson, *Ute av øye, ute av sinn? En historie om avfall og gjenvinning* (Oslo: Avfall Norge/Dinamo Forlag, 2006).

[32] 'Kampanjen for innsamling av brukt kartonasje', *Aftenposten*, 23 Mar. 1945, 2.

[33] 'Lov om tvungen innsamling av matavfall', *Aftenposten*, 26. Feb. 1942.

[34] Berge Furre, *Norsk historie 1905–1990: Vårt hundreår* (Oslo: Samlaget, 1992), 198.

including individual consumers, scavengers, businesses and civil administrators. Co-ordinated systems on a larger scale were possible, as both the brewery-organised reuse systems and the emerging city sanitation departments of the early 1900s demonstrate, but they required co-ordinated action on a level that was often challenging without the backing of the state. As an occupied nation, Norway did not see the sort of government-sponsored campaigns encouraging patriotic recycling of rubber and metal to support the war effort that were to be found on the 'Home Front' in the United States of America and Great Britain.[35] Instead, recycling practices targeted everyday needs, aiming to make scarce resources last longer.

Most recycling activities of the early 1900s, even when mandated by the state, were generally organised by individuals or organisations as a direct response to resource scarcity. As Weber's article in this issue demonstrates, recycling initiatives organised by the Nazi regime (including the replacement and deportation of Jewish traders) extended much deeper into the domestic economy. In Norway, both organised and unsanctioned reuse and recycling efforts worked best when the individual consumers had a clear motivation for their own recycling activities. The beverage industry managed to harness this interest though bottle deposits, generally ensuring that bottles were returned to their production infrastructure. It was only during particular times that the use value of glass bottles became higher than the economic value of the bottle deposit. In many ways, consumers had little choice about what to do with their waste during the war. Resource scarcity imposed a strict necessity for most, leading to a broad adoption of urban agricultural practices such as allotment gardens and pig breeding. Informal barter economies brought in food from the countryside to the cities. Metal, paper, rubber and in some cases even wood also became valuable resources. This necessity would gradually become less pressing in the post-war years.

## Affluence and recycling in the throwaway society (1945–70)

After the war, both the composition of the waste stream and people's relationship to waste changed dramatically. Disposable packaging was increasingly substituted for the previously reusable types of packaging. Milk cartons replaced refillable milk bottles, disposable nappies replaced cotton ones and so on. Consumers began generating less food waste, as they could now buy pre-cut meats and fish. Consequently, the knowledge and habits necessary to deal with this food waste began to disappear. At the same time, all these products came in various forms of packaging that remained after the contents were consumed. Finally, the boundaries between formerly separate waste streams began to dissolve, as all types of waste now ended up in the rubbish bin for the professionals to handle.

The history of why this transition to disposable packaging happened in the post-war years is complicated. Thomas Hine highlights a series of possible reasons,

[35] Terrence H. Witkowski, 'The American Consumer Home Front During World War II', in Joseph W. Alba and J. Wesley Hutchinson, eds, *Advances in Consumer Research*, Vol. 25 (Provo, Ut.: Association for Consumer Research, 1998), 568–73.

including advances in plastics technology that allowed new types of content to be reliably packaged. This again created a new emphasis on freshness, assisted by aseptic packaging. Television and the rise of visual advertising also meant that packaging became a display window for the brand rather than just a delivery mechanism.[36] Other explanations can be found in the loosening grip of scarcity on Norwegian consumers. As in most European countries, the Norwegian economy recovered quickly after the war, even though rationing for certain products continued until the mid 1950s. Consumers responded to the economic growth in different ways. While some continued to hold on to the modest and thrifty wartime habits and values, many considered the new affluence liberating. By not having to save and reuse their waste, they could celebrate the end of the war and the return to a 'normal' or even improved life. They wanted to leave the hardships of the war behind. From this perspective, waste can be seen as a way of displaying power and wealth, as a parallel to Veblen's conspicuous consumption.[37] Yet, as Milena Veenis and Ruth Oldenziel demonstrate in their contribution to this issue, Europeans' attitude to wartime and post-war resource management was complex; some of the resistance to the throwaway society stemmed from wartime experience of scarce resources. Habits and moralities had become intertwined, and many were reluctant to disentangle themselves from a mindset of scarcity and resource preservation.

Yet the waste problem was growing. People gradually replaced their old household tools with new electrical appliances. The life cycle of consumer goods became shorter and shorter, in what Vance Packard termed 'planned obsolescence'.[38] People moved into modern, small apartments in the new suburbs and replaced old furniture with new. The freedom afforded by the automobile further intensified waste problems. After the Norwegian government permitted free ownership of cars in 1960 (they required a special permit until then), a new leisure and mobility-oriented lifestyle spread.[39] People went on camping trips and packaging waste followed. Waste moved out of the cities and into nature. As a result, litter became an increasingly visible problem, materially and culturally, in the 1960s. Unofficial rubbish dumps appeared in nature areas close to roads; some would simply load up their cars with unwanted waste and dump it somewhere out of sight, out of mind.

In the 1960s and 1970s, emerging environmental organisations, activists and government agencies tried to control and contain the overflowing waste streams generated by Norwegian consumers. Littering of disposable beverage containers became one of the most heated topics in the emerging environmental debate.[40]

[36] Hine, *Total Package*, 159.

[37] Thorstein Veblen, *The Theory of the Leisure Class* (New York: Macmillan, 1899; citations from 2nd edn: Penguin Books, 1994).

[38] Vance Packard, *The Waste Makers* (New York: D. McKay Co., 1960).

[39] Christine Myrvang, 'Fra knapphet til overflod', in Christine Myrvang, Sissel Myklebust and Brita Brenna, eds, *Temmet eller uhemmet: Historiske perspektiver på konsum, kultur og dannelse* (Oslo: Pax Forlag, 2004), 316–17; Per Østby, *Flukten fra Detroit: Bilens integrasjon i det norske samfunnet*. STS-rapport 24 (Trondheim: Senter for teknologi og samfunn, 1995), 291.

[40] Jørgensen, *Green Machine*.

Consumers were not the only ones tempted by the convenience of disposable beverage containers. Breweries looked to disposables as a way of lowering distribution costs. Since the non-returnable bottles did not have to be reused, they could be made of lighter and thinner glass, which reduced transportation costs. Nor did the bottlers need a return handling and cleaning infrastructure. In 1961, some Norwegian grocery stores began carrying 'stubby' beer bottles – a short, disposable 35cl glass bottle weighing 200 grams less than regular bottles.[41] Since the stubby did not carry a deposit, consumers did not – could not – return it for refilling along with their reusable bottles. Some welcomed this convenience, while others protested against it. The stubby often ended up as roadside litter or in city parks. One of the recurring themes in the resulting public discussion was how to prevent Norway from ending up like Sweden or the USA, where littering of empty, non-returnable containers was far more common.[42] Disposable steel beverage cans had been introduced in Sweden in 1955 and aluminium cans were first used commercially in the USA in 1959.

Until this point, the reuse and recycling of bottles had been a matter between consumers and bottlers. However, the Norwegian Ministry of Social Affairs received so many complaints about non-returnable bottles starting in the early 1960s that it considered a ban. Initially, the Ministry resolved the situation by negotiating a voluntary agreement to avoid the use of disposable containers between bottlers, brewers and the Wine Monopoly in 1965.[43] The stubby bottle disappeared from the Norwegian market within a few years of this agreement, which signalled an early governmental attempt to limit the use of disposable packaging and to actively influence consumer recycling choices.

As Norwegians discarded old recycling habits in favour of disposables in the post-war years, technological advances in bottle production threatened to dismantle the carefully maintained relationship between production infrastructures, consumer habits and packaging waste management. Disposable packaging made many products more affordable and increasing affluence enabled people to acquire more goods than ever before. At this time, the Norwegian governments did not attempt to enforce specific recycling policies, though it was certainly growing aware of the rising waste problem. The throwaway society is an apt description of this period, though more in a qualitative than a quantitative sense. While the total amounts of waste are higher today, what distinguishes this period was the rapid unravelling of long-established reuse and recycling patterns. At the same time, we can see the beginning of the complex relationship between consumerism and citizenship, where responsibility for waste follows the right to consume.

[41] 'Øl på engangsflasker fra mandag', *Aftenposten*, 18 Apr. 1961, 5.

[42] Frequent letters to newspapers criticised disposable packaging as well as careless consumers and misbehaving youths. See for instance 'Når samfunnet må overta oppdragelsen', *Aftenposten*, 1 Sept. 1969, 5; 'Vil vi naturvern?', *Aftenposten*, 13 May 1972, 9.

[43] 'Ad: Engangsemballasje. Medlemsforslag i Nordisk Råd om ensartede prinsipper for lovgivning. – Deres j.no. 20466/70 H.5', letter from Mineralvannindustriens landslag to Det kongelige sosialdepartement, 7 Jan. 1971, subfolder 'Korrespondanse fra Industriforbundet til Sosialdepartementet'.

## Green states and recycling citizens (1970–2000)

In the 1970s and the 1980s, the discourse on environmental issues grew in strength in Scandinavia as in the rest of the Western world. A series of environmental laws passed in the early 1970s indicated growing worldwide public and political interest in addressing some of the environmental problems caused by consumerism and industrialisation. Dryzek et al. called the result 'green states', a new kind of state that is entangled with environmentalism as a social movement, and comparable to the liberal capitalist state and the welfare state as a model for governance.[44] Dryzek et al. admit that a pure green state does not presently exist, but the increased involvement of the state in environmental concerns from the 1970s has reshaped national recycling practices to a considerable degree.

Within the boundaries of the emerging green state, the benefits of disposable packaging were soon challenged by a host of actors. Several government reports and white papers in the late 1960s and early 1970s indicate that the waste problem was rising to the top of the political agenda, partly driven by the dramatic increase in littering. Packaging waste was assigned a particularly high priority, being one of the most immediately visible and rapidly growing forms of pollution.[45]

Interestingly, it was only at this time that the term 'recycling' took on the meaning it has today. The word first appeared in 1926, but meant recharge time for machinery or the reprocessing of petrol. In the early 1970s, newspapers began using the word in relation to littering and resources, particularly aluminium cans and bottles.[46] While the practice is much older, a shift in the usage of the word occurred at this time. Recycling gained new meaning and new significance. Waste was no longer just a question of economic consideration, but increasingly also filled with environmental and ecological values.

The increased awareness of littering and nature protection as distinctly environmental issues had a clear institutional impact in Scandinavia, as in most of the Western world. Sweden created an Environmental Protection Agency (EPA) in 1967, Norway established a Ministry of the Environment in 1972 and the Danish Environmental Protection Agency followed suit in 1974. These new environmental institutions immediately began making new environmental laws and consolidating practices previously handled by other ministries. The gradual shifting of responsibilities from the Ministries of Social Affairs and Finance to the new Ministry of the Environment illustrates how issues that the state previously considered as questions of economics and resources became reinterpreted as environmental issues.[47]

[44] John S. Dryzek, David Downes, Christian Hunold, David Schlosberg and Hans-Kristian Hernes, *Green States and Social Movements: Environmentalism in the United States, United Kingdom, Germany, and Norway* (Oxford: Oxford University Press, 2003).

[45] See for instance Miljøverndepartementet, *Resirkulering og avfallsbehandling* (Norges offentlige utredninger, NOU 1973: 51); Miljøverndepartementet, *Resirkulering og avfallsbehandling II* (Norges offentlige utredninger, NOU 1975: 52).

[46] Finn Arne Jørgensen, 'Recycling', in Kathleen Brosnan, ed., *Encyclopedia of American Environmental History* (New York: Facts on File, 2010), 1108–9.

[47] Kristin Asdal, *Knappe ressurser: Økonomenes grep om miljøfeltet* (Oslo: Universitetsforlaget, 1988).

As a result, the state actively reshaped both the composition of and the interfaces with Scandinavian waste streams. Thanks to treaties and institutions such as the European Economic Community (EEC) and the Nordic Council of Ministers, the transnational character of waste and recycling issues became much more pronounced.

The new set of laws that took effect in Scandinavia around this time formalised a waste hierarchy and established the so-called polluter-pays principle.[48] In this waste hierarchy, reduction of waste generation is ranked most important, but, after that, waste should in principle first be reused, recycled, recovered as energy and materials, and then, finally, it could go to the landfill as trash. The polluter-pays principle attempts to shift the responsibility of handling materials in the waste stream from the government (or from city sanitation departments) to the companies producing the waste, from downstream to upstream. In other words, this principle redefines the concept of industrial waste by stating that businesses have a responsibility for post-consumer waste. This principle was first described in a Swedish Act of 1975 and has become standard policy in EU and Organization for Economic Cooperation and Development (OECD) countries.[49]

Through the implementation of such principles, the state laid out the rules for citizenship in the modern green state of Norway, defining a triangle of interaction between consumers, businesses and policy-makers. In doing so, the state dramatically altered the framework for recycling practices, creating new recycling junctions. By implementing the polluter-pays principle on a national level, the state defined waste recycling as a direct and explicit responsibility of the producer, not an optional economic activity. While these legal initiatives targeted industry more than consumers, Norwegian businesses needed to find ways to actively involve consumers in order to meet their recycling requirements. This is a critical component of Norwegian recycling systems – instead of a law stating that consumers need to recycle, industries are responsible for finding ways to effectively recycle the waste from its products.

Norwegian waste laws expanded to include packaging to a greater degree in the 1980s and 1990s. By applying the polluter-pays principle to packaging, the Norwegian government delegated the environmental and economic responsibility of recycling and reusing packaging to business. Let us turn to two diverging waste streams that can serve as examples of this type of governmental policy: beverage containers with a deposit, and food and beverage packaging without a deposit. In both of these examples we will actively compare the Norwegian situation with other Scandinavian countries, since ideas, laws and practical solutions tended to move across the borders.

[48] European Economic Community, 'Council directive of 15 July 1975 on waste', 75/442/EEC.

[49] EC Council Recommendation 75/436 on the Application of the Polluter-Pays Principle, 14 ILM (1975).50. I have discussed the development of deposit systems for beverage container recycling in depth in Jørgensen, *Green Machine*. This section is largely based on this material.

*Deposit containers*

Scandinavian governments began passing legislation on beverage containers requiring deposits to encourage reuse as early as the 1970s. Non-returnable bottles and new container types produced from materials like steel and aluminium had begun changing the economic rationale for such a system in the 1960s. The increasing number of disposable containers threatened the existing and highly successful reuse systems. In response, the Norwegian government passed legislation on disposable containers in 1970, requiring the reuse or recycling of bottles and cans.[50] A Citation of footnote 50 is repeating twice, kindly check and suggest. high tax on disposable containers – both bottles and cans – ensured that reusable bottles would continue to dominate that market. The use of economic environmental incentives was modelled on the relative success of the voluntary bottle deposit systems.

The national beverage container recycling policies remained mostly stable from the 1970s until they were again reconfigured due to the introduction of aluminium cans in the 1990s. In 1989, 25 million aluminium cans were sold in Norway, despite the high tax of 3.5 kroner, and none of these cans were recycled. In the late 1980s, during the height of 'the green wave' of consumer environmentalism, several large business actors, including the aluminium producers Norsk Hydro and Elkem and the Norwegian Grocer's Association (Dagligvareforbundet), argued for the introduction of a deposit system to remove the current tax on disposable containers.[51] Within the framework of the polluter-pays principle, this seemed like the most realistic strategy for introducing aluminium cans to the Norwegian market. After extended discussions, the government agreed in 1994 to replace the original container tax with a differential fee system based on the packaging recycling rate. At 95% returns, the tax would completely disappear; the lower the return rate, the higher the tax. At 25% returns, the full tax of 3.5 kroner had to be paid. Along with this change, the industry proposed a non-profit consortium named Resirk to organise the system and encourage consumer recycling.[52]

The supporting interest groups were all in a position where they would make – or save – money with such a system. As details were hammered out, many conflicting interests clashed: environmentalism versus the bad reputation of disposables; free trade versus protectionism; and labour organisations versus labour-saving technologies. While most of the conflicts centred on environmental concerns, different agendas clearly underpinned the discussions.[53] In 1999, the Norwegian parliament finally

[50] Ot. prp. No. 77, 1969–1970, 'Lov om adgang til å forby bruken av visse slag engangsemballasje ved markedsføring av forbruksvarer' (Oslo: Stortinget, 1970).

[51] Jørgensen, *Green Machine*, 127.

[52] Resirk, *Pante- og retursystemer på drikkevaresektoren i Norge* (Oslo: Resirk, 1990).

[53] The debate had many similarities to Denmark's attempts in the early 1980s to restrict its beverage container market to only reusable containers in a return system, effectively limiting the possibilities for canned beverage imports. The European Commission took a strong interest in this case, leading to an extended legal discussion pitting free trade against environmental concerns. David Vogel, *Trading Up: Consumer and Environmental Regulation in a Global Economy* (Cambridge, Mass.: Harvard University Press, 1997), 83–93.

allowed the beverage industry to establish the Resirk system to manage the recycling of aluminium cans and plastic bottles. Resirk is today remarkably successful in promoting the recycling of disposable beverage containers, having achieved return rates of respectively 93% and 94% for aluminium cans and plastic bottles.[54]

The history of Norwegian deposit-centred recycling systems can give us important insights into the factors that influence consumer recycling decisions. First, the deposit gives a small, but influential economic incentive to return empty beverage containers. Second, the existence of an organised return system gives consumers a clearly defined means of returning their containers. In Norway, convenience has been a key priority in the development of these recycling systems. Finally, the responsibility for organising these recycling systems has clearly been placed with the industrial actors that use and make beverage containers, and the differential tax also gives them a clear financial incentive to work for high recycling rates.

### *Packaging without a deposit*

The bottle and can deposit systems have proved to work extraordinarily well, but what about packaging without a deposit? Two examples of voluntary packaging recycling, glass jars and paper milk cartons, demonstrate how Norwegian organisations have used information and motivational campaigns as means of encouraging post-consumer recycling.

Glass jars, used for many types of food items such as jam and pickled goods, are a significant source of packaging waste in Norway. The industry group Norsk Glassgjenvinning was created to handle glass recycling in order to reduce the packaging tax. Established in 1993, the consortium collected as much as 38,000 of the total 45,000 tonnes of glass packaging waste generated by Norwegian households after only a year of activity.[55] By 2005, Norsk Glassgjenvinning was collecting 51,000 tonnes, or 91%, of the glass packaging used per year in Norway.[56] The principle of producer responsibility was implemented in effective infrastructures and a differential tax incentive, with the result that Norway collects more than 90% of all glass packaging.[57] Such results required an extensive national collection system of recycling containers, similar to those mentioned in the article by Oldenziel and Veenis article in this issue.

Paper milk cartons are a second example. Norway has what is probably the world's most extensive system for recycling milk cartons, with a high degree of consumer participation. Milk cartons first appeared in Scandinavia in the late 1950s and replaced refillable glass bottles in Oslo in the mid 1960s.[58] Using refillable bottles for milk posed

[54] Resirk, *Årsmelding 2011* (Oslo: Resirk, 2012), 3.

[55] 'Norge på gjenvinningstoppen: Brukte flasker blir nytt byggemateriale', *Aftenposten*, 28 Nov. 1994, 10.

[56] 'Mer glass i retur', *Aftenposten,* 11 May 2005, 16.

[57] 'Fakta,' www.syklus.no/for-presse/ (accessed 18 Apr. 2013).

[58] A Norwegian entrepreneur had developed a system for making and filling milk cartons as early as 1939–40. Gordon L. Robertson, 'The Paper Beverage Carton: Past and Future', *Food Technology*, 56, 7 (2002), 46–52.

serious challenges to dairy producers. Bottles had to be cleaned very carefully or the milk would spoil. Disposable packaging like cartons promised to solve these problems. However, they would also generate large amounts of waste and many city sanitation departments feared what might happen. In Trondheim, they estimated an increase in total waste volume of 30%. The sanitation departments attempted to get people to compress their cartons, but to no avail. The weight of the waste remained constant, but the volume increased by about 8% annually. In 1996, only 35% of Norwegian milk cartons were recycled, despite municipal paper recycling collection systems. In order to increase the recycling rate, the Returkartong organisation set up a Recycling Lottery in 1997. The rules were simple: squash the cartons, put at least six of them in an empty carton, sign it with your name and telephone number and then you were part of the draw. Every quarter the lottery drew winners for a top prize of 100,000 kroner and forty prizes of 10,000 kroner. The recycling rate quickly increased to 68%, clearly indicating that the lottery had a significant impact on Norwegian recycling habits.

These two cases of voluntary recycling bring us back to the insight revealed by deposit containers: while recycling is an activity that can help consumers to think of themselves as being green, financial incentives are often necessary to achieve a certain recycling rate. Successful environmental legislation thus needs to work on many levels simultaneously, from placing responsibility and setting clear goals, to ensuring the creation of effective and convenient methods for consumer recycling. The green state requires both consumers and businesses to act as green citizens. The mostly successful recycling systems in Norway have become so through a high degree of co-operation between policy-makers, businesses and consumers. It is not, however, a model where the state takes full responsibility for organising recycling systems, but instead a hybrid model where the state attempts to shape the composition and flow of different waste streams through a variety of means, particularly variable tax systems.

This has become the defining characteristic of the successful Norwegian packaging recycling systems – a deliberate and systematic combination of legislation, technological infrastructures and incentives that places responsibility firmly with packaging producers, yet strongly encourages consumer participation. One of the key contributions of the Norwegian recycling systems is that the waste management infrastructures extend into both the everyday lives and cultural values of consumers and the technological, industrial processes of producers.

## Conclusion

At the beginning of the 1900s, various forms of reuse and recycling practices flourished as both individual and business initiatives. During the Second World War, recycling continued as an individual economic activity, but the Norwegian authorities also required or encouraged certain forms of recycling to meet resource shortages. When disposable packaging and affluence spread throughout the 1950s and 1960s, this waste spread outside city areas as litter in nature and along the

roads. Businesses and consumers no longer had the same economic incentives to recycle. National governments responded to this challenge and to the increasing environmental sentiment of the 1970s with new forms of formal recycling policy. In Norway, this took the form of differential taxes that would encourage business actors to ensure the recycling of their products. Throughout this historical narrative, recycling and green citizenship take place at the recycling junction, in the everyday and routine practices that recycling consumers engage in. At this point, the consumer cannot be studied in isolation, but in interaction with a whole range of other actors and technological systems. As we have seen, the configuration of these actors has changed over time, gradually involving the state to a much higher degree. At the recycling junction interlocking interpretations of recycling as a cultural activity and a technological infrastructure develop.

Citizenship is a feeling of participating in a community, of rights and responsibilities. This article has argued that governmental environmental policies evolving throughout the twentieth century allow materials that are about to become waste to be transformed into resources, and that modern Norwegian recycling policy is committed to embedding co-operative citizenship between consumers, businesses and policymakers in legal and technological systems. These groups do not necessarily have shared interests, nor are the individual groups particularly coherent, but the negotiated system design still works to co-ordinate and harness the actions of its participants.

The reasons why people recycle have changed historically and, in order for government and businesses to continue developing and refining recycling policies, they need to consider the cultural context of recycling. Take for instance a recent Resirk advertising campaign, which states: 'The Earth has a fever. We must all contribute to reducing energy consumption and emissions. Returning your bottles is a small, but important effort for a big issue. Do something small for something big. Return everything. Always.'[59] While the campaign latches onto the rising public awareness of global climate change as a way of promoting their recycling system, it also indicates how Norwegians now see recycling as a way of trying to be sustainable citizens in modern society even as the actual recycling is relegated to a large industrial and technical infrastructure system. The history of Norwegian packaging recycling in the twentieth century demonstrates that recycling requires not only an awareness of waste generation but also a commitment to involving waste management in everyday practices. It is here that the most critical sustainability lesson can be found. The classic study of Norwegian environmentalism by Dryzek et al. argues that the environmental movement has become the 'arms of the state'.[60] This article suggests that this may indeed be the case, but to get a picture of the full body of the green state, we need to consider the central place of everyday consumer practices and the role of businesses and technological infrastructures. A broad network of actors and a diverse range of motivations meet at the recycling junction, by no means all of them easily

[59] Norsk Resirk, 'Gjør noe lite for noe stort', advertising campaign 2006.
[60] Dryzek et al., *Green States*, 4.

classifiable as 'green' or 'environmental'. Yet, this complex and sometimes uneasy hybrid of consumers, citizens and corporations may be what the idea of sustainable development looks like in practice.

## Citoyenneté verte et 'jonction de recyclage': Consommateurs et infrastructures de recyclage des emballages en Norvège au 20e siècle

Cet article étudie la genèse du citoyen-consommateur recycleur norvégien en abordant le recyclage en tant qu'*activité culturelle* – expression d'un sentiment environnementaliste, habitude quotidienne et attente sociale – et en tant qu'*infrastructure technologique*, constituée de stations de traitement, de cadres juridiques, de systèmes de transport et enfin des technologies de recyclage. À l'aide du concept de 'jonctions de recyclage' pour comprendre les processus historiques de recyclage, cet article s'intéresse particulièrement aux emballages de boissons pour arguer que dans un État vert moderne, un recyclage efficace doit allier une practicalité soutenue par la technologique et une citoyenneté de consommation verte, faisant appel à des acteurs très divers.

## Umweltbewusstsein an der Recycling-Schnittstelle: Norwegische Verbraucher und Recycling-Infrastrukturen für Verpackungen im 20. Jahrhundert

Der vorliegende Beitrag untersucht die Entwicklung des Umweltbewusstseins und der Praxis des Recyclings bei norwegischen Verbrauchern. Er beleuchtet Recycling sowohl als *kulturelle Aktivität* – d.h. als Ausdruck eines wachsenden Umweltbewusstseins, als tägliche Gewohnheit und soziale Erwartung – und als *technologische Infrastruktur* aus Entsorgungsstationen, rechtlichen Rahmenbedingungen, Transportsystemen und den eigentlichen Wiederverwertungstechnologien. Der Autor verwendet das Konzept von 'Recycling-Schnittstellen' als Mittel zum Verständnis historischer Wiederverwertungsprozesse. Am Beispiel von Getränkeverpackungen argumentiert er, dass wirksames Recycling im modernen umweltbewussten Staat von einer Kombination aus technologisch ermöglichter Verbraucherfreundlichkeit und Umweltbewusstsein der Bevölkerung abhängig ist und eine Vielzahl von Akteuren involviert.