Recycling and plastics in apartments: Collaborating with householders beyond the Attitude Behaviour Choice paradigm

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Domestic waste management is in crisis all over the world. Plastic, is especially problematic as a persistent form of waste, leading to increasing calls for action towards 'zero waste'. This term is gradually becoming synonymous with the circular economy discourse. However, much of the latter focuses on technological change and individual behaviour change, resulting in a 'responsibilisation' of the consumer that (a) shifts responsibility away from producers and those who profit from plastic, and (b) pays insufficient attention to distributional impacts, inclusion and social life in general (Horne & Middha, 2024).

In popular sustainability and circular economy discourses, consumers are typically positioned as drivers of change. Shove (2010) calls this the 'ABC model' (Attitudes, Behaviours, and Choices) where the consumer/user is assumed to be an enabled and engaged rational actor pursuing activities and adopting new technologies and products. Followers of this model focus on education and awareness campaigns for consumers to change their ABCs.

This approach diverts attention away from areas where change might be more effective, such as addressing what is called the 'infrastructures of consumption', including systems, broader social norms and meanings around plastic (Horne et al., 2022). As well as excusing producers, it also excuses marketing organisations and service providers from responsibility, placing all the burden for change upon consumers. Moreover, the waste produced by industries, agriculture and construction activities is spared the scrutiny that is placed on households (Gregson & Crang, 2010). Taking the example of 'wishcycling' (the contamination of recyclables with 'non recyclables'), Altman (2021) contends that this supposed 'poor' behaviour by households is more appropriately viewed as a production failure, requiring focusing onto manufacturers rather than on households.

Given these misgivings about current approaches to the role of consumers in the transition to circularity, how should we be considering the role of consumers in changes towards circularity? To answer this question, we present two case studies that illustrate how consumers are implicated in the problem of plastic use and waste management, especially in apartments. Through the first case study we illustrate how the use of plastics in apartments is entangled in domestic lives that involve making trade-offs related to space, transient living, and domestic rhythms. Here, plastic consumption is embedded in everyday negotiations rather than reflecting attitudes or bad choices. Then we highlight the case of domestic (kerbside) recycling in apartments and show how, without a strong underpinning that accounts for the complexity of social life, current attempts to encourage recycling are set to exacerbate inequalities and poor waste outcomes in apartments, rather than advance circularity. Next, we discuss how consumers and householders can be included in conversations and programmes designed and implemented

to reduce the use of plastic and divert plastics from landfill, in the form of recycling and reuse. This includes:

1) Moving beyond the ABC model
2) Incorporating lived experiences and shared practices of householders in waste minimisation and management planning, design, and organisation.
3) Studying best practices within the context of place-based practices, infrastructures, and governance.

Finally, drawing from a Change Point workshop on apartment waste management, involving experts, stakeholders, and apartment residents, we introduce an example of how to put these three ideas into practice in apartment waste management as well as consider the broader implications of this for the circular economy of plastics.

Case study 1 – Plastics in high-rise apartments

The experience of high-rise living spans diverse arrangements, including transient Airbnb households, blended families, single and shared households, lower- and higher-income earners, and empty-nesters. Typically, high-rise residents sacrifice space for the benefits of location. Importantly for plastic use, our research demonstrates (Horne et al., 2022) that high-rise living is associated with widespread reliance upon plastics to aid in vertical, space-constrained living. Plastics play a significant role in their social practices in ways that both mirror and divert from those by people dwelling in other housing models, such as food procurement, cooking and eating, a convenience and a time saver. There are also particular ways that the versatile material is used to make do with small spaces and suboptimal kitchens prevalent in apartments (Horne et al., 2022).

However, policy interventions targeting household behaviours typically fail to account for uneven infrastructures associated with apartment living, such as the lack of space and particular waste practices associated with vertical living. This occurs, even though 'nudging' measures aimed at promoting change in plastic consumption affect different types of households and tenures in different ways. Policies like plastic bag levies have been shown to have a significant effect of reducing single-use plastic bag consumption among owner-occupiers of high-rise apartments with higher socio-economic status, but a minimal effect among lower socio-economic households and renters (Rivers et al., 2017). This highlights the unequal impacts of plastic reduction measures across different types of housing, social classes, and tenures.

Case study 2 – Waste management in apartments

Concerns have been raised about low recycling rates and high contamination rates in apartments, not just in Australia, but globally. Apartments, with their diverse spatial characteristics and unevenly distributed responsibilities, have revealed significant knowledge gaps on the topic of waste management in shared living spaces. Rather than solely blaming household behaviour, certain inherent dynamics make current waste management systems incompatible with apartments and apartment living, particularly for disadvantaging lower-income households. In Australia, for example, 39% of apartment dwellers are low-income households. Globally, apartments, especially those inhabited by lower-income households, tend to have lower recycling rates and higher contamination rates in mixed waste streams. The social equity and capability

(Middha, 2020; Walker, 2015) aspects of apartment waste systems are not adequately considered in current arrangements, leading to uneven waste management outcomes and a lack of fairness in waste handling (Middha & Horne, 2024a).

Moreover, a recent review showed how recycling infrastructure is often particularly lacking in apartment developments that primarily cater to lower-income private renter households, requiring more resources in terms of time and capability to recycle than in other apartments or housing (Middha & Horne, 2024a). As such, the 'consumption work', which involves households sorting waste for reuse, imposes an extra burden on residents (Hobson et al., 2021; Reno, 2015). Even when the infrastructure is designed to support recycling as the default waste management option, there are multiple reasons why individual behaviour-change approaches fail.

Policy ideas thus far have ignored how daily lives are entangled with plastics through the services and functions they provide. To design policies and strategies a consideration of the patterns of consumption and practice they sustain is important because the 'waste burden' falls inequitably on householders and consumers, especially those on low incomes and women who continue to shoulder domestic burdens (Farbotko, 2018; Lindsay & Maher, 2013). The next section puts forward three ideas of how collaboration with consumers and shared social practices can be operationalised.

Discussion: Moving beyond the ABC model and collaborating with consumers

1) Moving away from the ABC model

Our research (Horne et al., 2022; Middha & Horne, 2024a, 2024b, 2024c) indicates that waste and transience in apartments affect both domestic waste and other types of discard practices, including hard rubbish and temporary objects. These are associated with specific material flows, for example using more transient domestic objects such as plastic furniture and cutlery/crockery to be replaced later.

Shifting practices can work when uneven social structures are attended to, where fair and consistent systems are instituted. Mixed messages to consume and to stop waste do not meet this requirement. A framework based on social rules and permissions, knowledge, capability and of course the right infrastructure is a more promising basis for social change. Shared accountability also requires strategizing about interventions in the supply chain both before and after moments and spaces of consumption.

2) Incorporating lived experiences and shared practices in waste minimisation and management decisions.

Understanding shared social practices would mean gaining more lived experience and diverse knowledge to design a system that enables participation by diverse households. Behaviour change campaigns have limited success, and in the case of apartments as shown by research done by Resource London (2020), singling out households is not recommended. The responsibility for waste needs to be distributed between producers, retailers, brand owners, and packaging companies.

Coherence and consistency in waste management - Many apartment buildings do not have council based domestic waste or hard rubbish collection services, and in these cases, logistical

issues, financial burdens, and a range of barriers apply. In such cases, shared practices reflect inconsistency of design, infrastructure signage and standards and configuration of waste bins. However, there are a range of considerations associated with standardisation based on rights, capabilities, etc. Special attention is also required to food waste due to sensory and somatic affects, as observed in various food waste studies (Xiao & Siu, 2018).

3) Studying best practices within the context of place-based practices and infrastructures

Diverting waste from landfill does not ensure reductions in climate change or the consumption of virgin material. Thus, benchmarks of change, conventionally followed or lionised, need to be assessed against goals such as understanding waste prevention, product stewardship regulations and increase in the use of recycled products that substitute for virgin products – i.e., a signal of progress would be a reduction in virgin materials entering circulation (Horne & Middha, 2024).

Without more structural changes as a stated goal, it is difficult to see how consumers would recognise industry and government stakeholders as being trustworthy and genuine partners in the race to circular economy plastic. Recent research shifting the focus form individual behaviour and attitudes to environmental citizenship approaches have concluded that citizens, as key participants, are more willing to make individual sacrifices for recycling if they believe that the government will fulfil its part of the agreement, such as by providing efficient recycling infrastructure. Findings also suggest a link between institutional quality, trust, and reported recycling behaviour, with both institutional trust and general trust being associated with recycling practices (Jones, 2020). However triumphantly optimistic, CE advocacy cannot meaningfully make inroads into eliminating waste or advancing inclusion without attention to the structures and relations of waste.

Co-design and collaboration: The Change points approach

Drawing from a Change Points approach (Hoolohan & Browne, 2020; Hoolohan et al., 2018; Watson et al., 2020), we recently brought together apartment waste experts, residents, other stakeholders including our industry partners City of Kingston and Reground to collaborate on finding solutions while drawing from the ideas elaborated on above, to increase recycling rates in apartments

The Change points approach was developed to align everyday shared practices as described by Social Practice Theory (SPT), with policy and decision making to encourage effective and widespread uptake of social change (Watson et al. 2020). Change points have been described as, ‘moments in everyday routines where different courses of action can be taken’ (Watson et al., 2020 p.4). SPT does not fit well into simple ‘cause and effect’ models for social change, due to the unpredictable outcomes of practice-based interventions. Based on a recent workshop where we co-designed Change Points with householders, experts, intermediaries such as owners’ corporation and building managers, council officers and decision makers and policy makers, we outline our insights into how to improve engagement with residents in improving apartment waste management that combine interpretive social science with policy work.

It became clear from the discussions in the workshop that currently local councils have no or little engagement with residents, due to various reasons. Any engagement with a building is typically, as one participant from a local council commented, a result of Owners Corporations’

requests. A resident participant highlighted the difficulties associated with getting through to the Owners Corporation and motivating them to act, highlighting the Owners Corporation as a potential enabler *and* barrier to positive change. As such, a significant Change Point appears in the Owners Corporation as the intermediary between residents and local councils. Interventions in this area have the potential to achieve significant outcomes by involving residents, suppliers, contractors, and other stakeholders in local government waste projects from the start and allowing alternative avenues of engagement with apartment residents and buildings.

However, many participants also pointed out that residents are often locked into existing and inadequate infrastructure, which both restricts their waste practices and their ability to impact waste management in their buildings. Thus, a significant Change Point appears in the local council's approval process of waste management plans and their enforcement or lack thereof. Interventions into local government practices, it was discussed, could support the development of more inclusive infrastructure for new apartment buildings. That is, at the planning process, the opportunities that shape good waste practices must be designed into new buildings. This, along with working with industry around packaging and labelling, helps shift the burden of responsibility from residents. However, such interventions would do little for the existing building stock.

A central question also remains of how to move beyond the one-way communication constituted by traditional education programmes. There is, it was pointed out in the workshop by some, a need for improved engagement in moving towards *dialogue and co-design* with residents and other stakeholders. The role of transparency and access to data, available for residents (both owners and tenants) was highlighted as a step in the right direction. Lack of information and data was identified as another change point to engage residents that otherwise are made to feel excluded from the waste process. Lack of trust in a building's waste management practices (supplemented by anecdotal evidence of waste contractors sending recycling to landfill) might make residents question the value in recycling altogether. Thus, it was suggested, involving and empowering residents to engage with waste management solutions may benefits waste reduction and recycling outcomes.

It was further pointed out in the workshop that in such work, we must consider the challenges of mixed tenure properties and how to engage residents in a wide range of living situations, such as students, Airbnb guests/hosts, owners, and renters. Despite the highlighted need for consistency between buildings and local councils, this will require different and adaptable guidelines, approaches, and solutions depending on the population at hand.

In conclusion, in applying the Change Points workshop to the complex problem of apartment waste management, we have considered how collaboration with residents and their shared social practices can be better operationalised in practice. This should inform different, maybe better, process for policy and practice development into the broader area of plastic circularity through engagement and collaboration with the community, their networks, and multiple stakeholders. Exploring the Change Points of apartment waste management has provided us with insight into possible policy interventions with expected benefits for resident engagement and apartment waste management solutions. However, the implementation of these Change Points requires governance cultures other than the conventional culture that currently dominates apartment waste management (Middha and Horne 2024a). Specifically, the cultures sought are those that enable

building coalitions of shared practices, knowledge, connection, and mediation across experiments, regions, neighbourhoods, and initiatives.

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