

The emergence of plastic-free grocery shopping: Understanding opportunities for practice transformation

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Abstract

Despite consumer concern for sustainability, avoiding plastic packaging, particularly in food shopping, is difficult due to its pervasiveness and usefulness. Yet achieving changes in consumer behaviour is an important part of environmental management approaches towards a circular economy and plastic reduction. This research explores how everyday food shopping practices might adapt and evolve to become more sustainable through consumers avoiding, reducing, or replacing plastic packaging in their grocery shopping. This qualitative research, based on eighteen semi-structured interviews with sustainably-oriented consumers, finds that plastic-free shopping practices are challenging for even committed practitioners. However, we illuminate four mechanisms representing ‘bright spots’ (i.e., points of optimism) that offer specific opportunities for environmental management. We define these as *destabilisation*, *envisioning*, *emotional connection* and *adaptation*. Destabilisation and envisioning help with recruitment of practitioners to plastic-free shopping, and emotional connection and adaptation help support practitioner loyalty and commitment. Further, consumer reflexivity and habituated sustainable-orientation supports practice recruitment, stabilisation and transition. We discuss the implications of our findings for environmental management approaches to ‘behaviour change’, focusing on the role of policymakers, social marketers, retailers, and manufacturers in fostering competitive, stable plastic-free grocery shopping.

1. Introduction

There is a growing need to rethink our reliance on single-use plastic packaging. Seventy-eight million metric tons of plastic packaging are produced worldwide annually (Royte, 2019), with only 9 percent recycled (Geyer et al., 2017). Single-use plastic packaging has the most significant and disproportionate impact on the environment compared to other plastic uses, endangering animal life and ending up in our food chain (The Royal Society, 2019). For example, food and beverage packaging items, usually single-use plastics, account for most of the debris on the world’s ocean floor (Hardesty et al., 2021). The plastics problem is also a health issue (Tang et al., 2023), as we are exposed to up to 113,000 microplastics annually (Cox et al., 2019). Moreover, plastics are also made from non-renewable resources, such as oil and natural gas, providing demand for fossil fuels and contributing to climate change (Liu et al., 2021; Royte, 2019). Subsequently, the prevalence of plastics is a major concern for sustainability and a key target area for the Ellen MacArthur Foundation to enable a transition to a circular economy (Ellen MacArthur Foundation, 2017).

Environmental management of plastic waste and shifting to a circular economy requires a coordinated multidisciplinary approach achieved through changes within packaging design, production, use, sorting and waste-handling system, and changes in consumer behaviour (Heidbreder et al., 2019; Johansen et al., 2022). For example, previous research has examined plastic resource recovery from landfill (Geng et al., 2022), plastic (bio)degradability, the municipal solid waste management cycle (De Gisi et al., 2022), and automation of the sorting process (Pluskal et al., 2023). Furthermore, of increasing interest in environmental management, is behaviour change (e.g., Kurokawa et al., 2023; Iveroth and Bengtsson, 2014). Recent research examines the role of consumers in decreasing plastic waste (Khatami et al., 2023; Mathew et al., 2023; Rivers et al., 2017; Jory et al., 2019). Behaviour change interventions have shown to be effective, such as controlling (e.g. plastic bans) and limiting choice (e.g. nudges). These are effective in the short term (Heidbreder et al., 2019; Mathew et

al., 2023). Voluntary behaviour change techniques (e.g., social marketing or education campaigns) are also effective, albeit more mixed and modest (Borg et al., 2022a).

Existing research emphasises that behaviour change approaches to plastic reduction must pay attention to the way plastic has become embedded in routine consumption and market practices (e.g., Evans et al., 2020; Fuentes et al., 2019; Rapp et al., 2017). While consumers are highly concerned about the impact of plastic on the planet and human health (Civero et al., 2021; Davison et al., 2021), consumers are still routinely buying food stored in single-use plastic packaging. Particularly, research shows that consumers believe there is too much packaging of food (Hanssen et al., 2017; Seo et al., 2016) and that they generally favour less packaging with a preference for unpackaged fruits and vegetables (van Herpen et al., 2016). Yet, behaviour change toward less packaging or plastic-free shopping is difficult (Fuentes et al., 2019). There is a lack of alternatives to plastic (Rhein and Schmid, 2020) and avoiding plastic, particularly in food shopping, is difficult for consumers due to its pervasiveness and usefulness (Evans et al., 2020). Research emphasises that plastic is embedded in society (Nielsen et al., 2020), for example because it has enabled high standards of safety, freshness, hygiene, and convenience (Parsons, 2021). As a result, plastic has become ‘locked in’ to everyday practices like grocery shopping, which makes behaviour change difficult, despite pro-environmental attitudes (Fuentes et al., 2019).

Our research confirms the challenges in fostering behaviour change towards shopping plastic-free. Yet, we also find mechanisms that represent windows of opportunity (Watson et al., 2020, p.5). We find ‘bright spots’ (Bennett et al., 2016) in the emerging trajectory of plastic-free shopping as it is enacted by loyal, pro-environmentally oriented practitioners. Therefore, this paper advances environmental management research by illuminating mechanisms that help foster plastic-free shopping. Following others interested in shifting ‘locked in’ patterns of consumption for environmental management purposes (Bleicher, 2016; Iveroth and Bengtsson, 2014), we utilise social practice theory to pay particular attention to the intersection between pro-environmentally-oriented consumers and the practices of conventional and plastic-free grocery shopping that co-exist and compete (Fuentes et al., 2019; Rapp et al., 2017). These mechanisms can help policymakers, social marketers, retailers, and manufacturers develop targeted interventions necessary to support the emergence of plastic-free shopping as a stable, competitive practice.

The paper is structured as follows. Firstly, we provide an overview of the literature, theoretical framework, and study contributions. Secondly, the qualitative methodology is explained, followed by the findings of the research. Lastly, the discussion considers the theoretical and practical contributions, including examples of environmental management approaches that can support the ‘bright spots’.

2. Literature review and theoretical framework

2.1. Plastic-free shopping

The burning fossil fuels, which are also used to create plastic, has led to warming of 1.1 °C above pre-industrial levels and in order to limit warming to 1.5 °C we must cut emissions in half by 2030 (IPCC, 2023). Plastics is estimated to generate 4% of global emissions, which are projected to double by 2060 (OECD, 2023). As a result of increased public knowledge and media exposure, single-use plastic packaging has become a sustainability and corporate

social responsibility (CSR) issue for both companies and consumers (Landon-Lane, 2018; Leal Filho et al., 2019). To transition towards a circular economy, one of the key ways to reduce plastic packaging in the environment is through reducing single-use plastic packaging in grocery shopping (Borg et al., 2022a; Mathew et al., 2023).

There is some consumer demand for sustainably packaged products in conventional stores, and/or shopping in bulk food or plastic-free specialist shops (De Canio, 2023). Evidence is growing that consumers are significantly concerned about the impact of plastic on the planet (Dilkes-Hoffman et al., 2019) and about plastic waste (Davison et al., 2021). Research shows consumers are motivated to shop plastic-free when environmental concerns are high (Jacobsen et al., 2022). Such consumer demand for plastic-free goods is beginning to trigger market innovation, such as the introduction of plastic-free grocery stores and new packaging materials (e.g., compostable, cardboard) (De Gisi et al., 2022). For example, supermarkets Aldi and Sainsbury's have committed to halving their plastic footprint by 2025 (Bullett, 2021). While the market is growing with more retailers and manufacturers changing offerings, arguably due to public and government pressure for CSR, it remains small (Beghetto et al., 2023; Landon-Lane, 2018; Leal Filho et al., 2019).

Existing research focuses heavily on the challenges faced by consumers in shopping plastic-free. For example, lay beliefs and heuristics mislead consumers, making them uncertain about sustainable packaging (Steenis et al., 2017) and prone to acting on 'feeling' rather than knowledge (Otto et al., 2021). Research demonstrates that most consumers are also unsure about biodegradable plastics and their positive/negative environmental impacts (Herrmann et al., 2022; Leal Filho et al., 2021a) and how to dispose of them (Taufik et al., 2020). Barriers to shopping plastic-free also include time (Beitzen-Heineke et al., 2017), inconvenience and lack of accessibility (Lofthouse et al., 2009), safety concerns, issues of trust and quality due to products being unbranded (Minami et al., 2010), lack of assortment (Marken and Hörisch, 2019), as well as concerns over price (Lofthouse et al., 2009). Furthermore, research shows that some consumers prefer recycling to reusing (Greenwood et al., 2021), and sustainable packaging over unpackaged goods (De Canio, 2023). Research has found that the characteristics of the packaging drive the willingness to reuse packaging (Greenwood et al., 2021). Glass is the most likely to be recycled and reused compared to any other material (Langley et al., 2011), but paper and cardboard are also believed to be sustainable (Orzan et al., 2018; Steenis et al., 2017).

The research is dominated by individualist understandings of behaviour and behaviour change, focusing on eco-attitudes, awareness, and concern as the 'main barriers' to decision making (e.g., De Canio, 2023; Nguyen et al., 2022). An alternative stream of literature that advances from the limitations of individualist policy approaches to environmental management focuses on the socio-cultural systems of practices (Iveroth and Bengtsson, 2014) in which plastic is "embedded" and a "pervasive" material (Müller and Süßbauer, 2022, p.300). Much of this research emphasises the importance of focusing on the transformation of "daily life practices" (Geels et al., 2015, p.6), which can stabilise into taken-for-granted routines and habits (Warde and Southerton, 2012).

2.2. Plastic and shopping practices

Practice theoretic research emphasises the inter-relationship between plastic and persistent, shared and social practices; particularly apparent in the food system (Nielsen et al., 2020; Sattlegger et al., 2020). This research emphasises that the material characteristics of plastic

have shaped food industry practices that rely on it to maintain food safety, freshness, and convenience and reduce food waste (Parsons, 2021). Characteristics such as re-closable seals and oven-safe packaging have contributed to evolving food consumption habits (Evans et al., 2020), like eating ready meals and snacking on the go (Hawkins, 2012). The characteristics of plastic shape shopping practices, such as using shopping bags to carry goods (Hagberg, 2016), enabling self-service in stores (Murcott, 2019), and making out-of-season goods available year-round, which has become an expectation of consumers (Rapp et al., 2017). In the same vein, research demonstrates how reading labels and dates on the packaging is understood as part of the shopping repertoire, and removing plastic packaging can mean consumers see products as “naked” (unpackaged) (Müller and Süßbauer, 2022). Plastic is locked into networks of practices involving food retailers, manufacturers, and consumers that manifest as societal understandings about convenience, cleanliness and hygiene. Practices “maintain the role of plastics in society” (Evans et al., 2020, p.1) and plastic configures and ‘serves’ a multitude of mundane practices (Fuentes et al., 2019; Geels et al., 2015).

Research exploring plastic-free shopping through a practice theory lens has emphasised its fragility as an alternative to conventional shopping (Elms et al., 2016; Fuentes et al., 2019). Reconfiguring practices is “not easy because existing configurations are characterized by internal coherence (alignment of elements), path dependence and lock-in” (Geels et al., 2015, p.6) and there are “profound difficulties encountered in attempts to challenge and change practices” (Hargreaves, 2011, p.79). Particularly, research highlights the significant disruption to conventional grocery shopping that is triggered by the removal of plastic (Fuentes et al., 2019) and the demands placed on plastic-free shoppers, requiring them to acquire new skills, constantly reflect, and accept frequent failure (Zeiss, 2018). As such, removing plastic from shopping can shatter the ‘core’ meaning of convenience, requiring consumers to break old habits and establish new ones, involving planning, preparation, and additional practices (Fuentes, 2014).

Current research has advanced understanding of the challenges faced in developing environmental management approaches based on ‘behaviour change’ (Iveroth and Bengtsson, 2014), particularly by advancing a practice theory view that pays attention to how practices and their interconnection can be a helpful focus for policy intervention for social change (Mathew et al., 2023). However, there is a need for more understanding of successful plastic-free grocery shopping so that important insights can be gained into mechanisms underpinning practice change, innovation, and diversification (Warde, 2005). These insights can help inform environmental management approaches that support the further development and stabilisation of the practice of plastic-free shopping. Thus, we explore the performances of consumers who attempt to enact plastic-free grocery shopping.

2.3. Theoretical framework

Grocery shopping is a mundane, highly familiar practice (Warde, 2005), ideally suited to a practice theoretic analysis. Grocery shopping is a practice that “involves assembling a heterogeneous set of elements that includes material artefacts, meanings and understandings, as well as know-how and knowledge” (Fuentes et al., 2019, p.259). In practice theoretic analysis, performances of practices are the tip of the iceberg, locked in place by the arrangements of several intersecting elements.

Performance of practices “is often neither fully conscious nor reflective” (Warde, 2005, p.140) although routines also contain “a capacity for reflective monitoring of performance”

(ibid). Theories of practice “emphasize processes like habituation, routine, practical consciousness, tacit knowledge, tradition, and so forth” (Warde, 2005, p.141), advancing from theories that foreground human agency, decision making and choice (Shove et al., 2012). Yet, practices change through various change mechanisms, including through the dynamic trajectories of practice elements (Shove et al., 2012) but also improvisation and innovation driven by consumer demand. For example, change can be triggered “by enthusiasts who challenge the orthodoxy of a given practice” (Geels et al., 2015, p.6). As Warde (2005, p.141) describes, the shared meanings governing a practice can be contested, with “some practitioners typically still attached to prior codes of conduct, while others ... seek to replace current orthodoxies with new prescriptions”.

We draw on and extend research that understands plastic-free shopping as a “new and alternative mode of sustainable shopping” (Fuentes et al., 2019, p.59) by focusing on opportunities for change triggered at the intersection between practitioners and practice. We pay particular attention to the meanings at the core of plastic-free shopping that set it aside from conventional grocery shopping. Meanings are a defining aspect of practices, along with materials (e.g., reusable packaging) and the competences (e.g., managing containers) required to be integrated to enact them. Meanings contain mental activities, emotion, motivational knowledge and the symbolic significance of action (Shove et al., 2012). They govern what is to be done, why, and what the motivations are that can animate practitioners and the emotions they might feel (Schatzki, 2017). The meanings core to plastic-free grocery shopping have only received limited attention in existing research. However, Fuentes et al. (2019) note that whereas conventional shopping is guided by normativised end goals and emotions associated with convenience and the acquisition of goods for other practices, package-free shopping incorporates end goals of waste reduction and sustainability.

2.4. Study contribution

We explore the emerging practice of plastic-free grocery shopping, which we define as avoiding, reducing, or replacing plastic packaging in grocery shopping. Our study explores plastic-free shopping practices in competition with conventional grocery shopping, as pro-environmental practitioners navigate multiple retailers, including conventional supermarkets, local markets, and specialist plastic-free (zero-packaging) stores. This naturalistic context advances from the existing focus on consumer experiences in specialist stores only (Fuentes et al., 2019; Rapp et al., 2017). We focus on the contestation and change triggered at the intersection between practitioners and the core meanings of plastic-free grocery shopping. Amongst the challenges to plastic-free shopping, well-rehearsed elsewhere, we identify mechanisms that represent ‘bright spots’ (i.e., points of optimism) (Bennett et al., 2016) in the emerging trajectory of plastic-free shopping. These illuminate opportunities for environmental management. We define the mechanisms as *destabilisation*, *envisioning*, *emotional connection*, and *adaptation*, and discuss the implications of these findings for environmental management approaches to ‘behaviour change’.

3. Materials and methods

3.1. Study population

Our context is plastic-free shopping using a range of stores and supermarkets. Our focus on New Zealand represents the diverse spatio-material context of plastic-free shopping in

economies where opportunities for specialised, sustainable shopping are scarce and interspersed with conventional stores. While the presence of zero-packaging stores is increasing, many people do not have access, and most stores do not provide the ability for a full grocery shop.

3.2. Data collection

Semi-structured interviews were used to explore consumers' complex experiences. We used purposive sampling to recruit participants who provided information-rich cases (Campbell et al., 2020). Participants were recruited via social media groups supporting plastic reduction in the food context. More women than men volunteered, fitting past research (Leal Filho et al., 2021a), and anticipated given women tend to have greater responsibility for family food shopping (Lake et al., 2006). In total, 18 participants were interviewed (Table 1), with sampling concluding once data saturation was reached (i.e., no new themes or codes), enabling rich (quality) and thick (quantity) data (Fusch and Ness, 2015). Interviews lasted between 35 and 72 min, averaging 54 min. Participants received a NZD 50 supermarket voucher for their time. Interviews explored participant feelings, motivations (including pro-environmental orientation) and experiences of everyday shopping, particularly their attempts to use (a) refill/reuse products/jars, (b) sustainable plastics (i.e., bioplastics, compostable), (c) other packaging types (i.e., glass, aluminium), and (d) recycling plastics. All participants self-identified as pro-environmentally oriented and participated in other sustainable consumption activities in addition to plastic-free shopping. Institutional ethical approval was granted to conduct interviews in New Zealand. Interviews were audio recorded and transcribed with consent.

Table 1. Participants details.

Pseudonym	Gender	Interview mode	Location	Age Range	Living Situation
Abigail	Female	In-person	Auckland	30–39	Couple
Amber	Female	Online	Auckland	20–29	Single, sharing with others
Amelia	Female	Online	Auckland	20–39	Couple, living with parents
Anna	Female	Online	The Coromandel	70–79	Couple, retired, grown children
Caitlyn	Female	Online	The Coromandel	60–69	Couple, retired, grown children
Casey	Female	Online	Canterbury	20–29	Couple
Ellie	Female	Online	Auckland	30–39	Single, living with flatmates
Hamish	Male	Online	Whangārei	40–49	Family with young children
Jessica	Female	In-person	Auckland	50–59	Couple
Laura	Female	Online	Canterbury	30–39	Couple, with a flatmate
Lori	Female	Online	Dunedin	30–39	Family with young children
Martha	Female	Online	Wellington	30–39	Single, living alone

Pseudonym	Gender	Interview mode	Location	Age Range	Living Situation
Mia	Female	Online	Hawkes Bay	50–59	Family with teenage children
Milly	Female	In-person	Auckland	20–29	Single, sharing with others
Phoebe	Female	Online	Hawkes Bay	40–49	Family with teenage children
Rebecca	Female	Online	The Coromandel	40–49	Family with young children
Rose	Female	Online	Canterbury	20–29	Single, living alone
Sarah	Female	Online	Canterbury	30–39	Single, living alone

All but two interviews were online, allowing a geographically diverse range of New Zealand participants (e.g., North and South Island and urban and rural communities), which would not otherwise have been possible.

3.3. Data analysis

In line with research that recommends qualitative, interpretive methodologies aimed at uncovering recurring patterns and social mechanisms (Geels et al., 2015), we deployed Reflexive Thematic Analysis through inductive and deductive data coding (Braun and Clarke, 2019). After familiarisation, initial codes recognised patterns of plastic-free shopping practice performances (including attempts and failures) and future plans to shop plastic-free. The researchers collaboratively and iteratively analysed the data, specifically through (online) discussion and re-reading extant theoretical research (Byrne, 2022). Latent coding was used alongside semantic coding. For example, key concepts from practice theory were used to illuminate processes fostering or threatening plastic-free shopping (e.g., alignment and misalignment with distinct practice normativity, affective outcomes of misalignment, the emergence of the practice mode and performance negotiation). The researchers iteratively moved through coding stages to generate the current framework (Fig. 1) (Byrne, 2022).

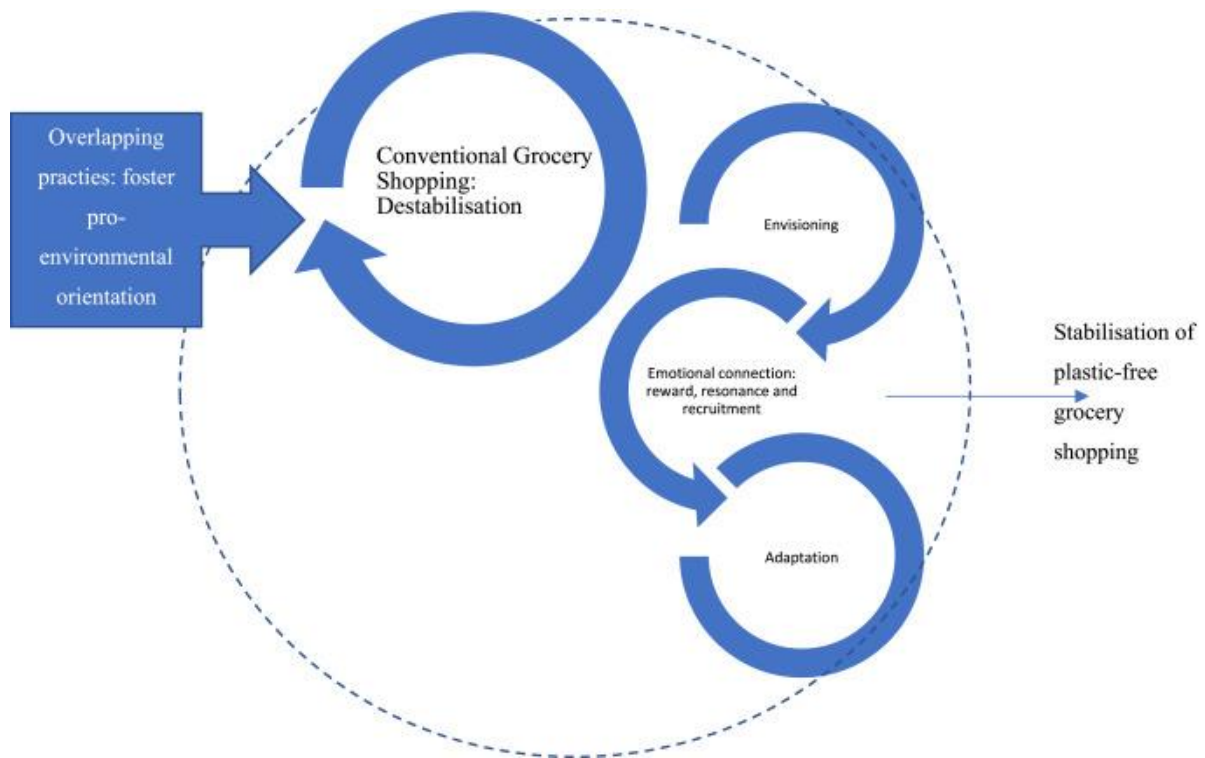


Fig. 1. Four mechanisms important in the emergence of plastic-free grocery shopping.

4. Findings

Analysis identifies four mechanisms, (Fig. 1), that are important in the emergence of plastic-free shopping as a practice that can compete with conventional grocery shopping. These mechanisms emerge at the intersection between practitioners with strong pro-environmental orientation and the practices of grocery shopping they enact in hybrid.

4.1. Destabilisation

Our findings illuminate the way conventional grocery shopping with plastic-packaged goods has become ingrained in everyday routines. Grocery goods in plastic packaging are readily available, and the practice is guided predominantly by a sense of immediacy and convenience as well as task-orientation. Food provisioning simply has to be done. Participants described the importance of convenience which means they would buy milk in plastic bottles rather than driving out of town to the farm gate. ‘Less than 20 min’ drive seemed to be the threshold. Furthermore, conventional grocery shopping was simply more readily available when food provisioning goals had to be met. For example, participants described continuing to buy products in plastic packaging such as cheese, certain vegetables such as salad and cucumber, many snacks, e.g. chips and biscuits, and tofu and other meat substitutes. These were not readily available in plastic-free packaging and were considered essential. Lori explained, for example, that there is no option to buy chocolate or kettle fries (crisps) without some kind of packaging, and there is ‘no way’ she could make these at home:

“So, but there's no way I'm making kettle fries at home ... [and] I can't buy a chocolate without buying in foil, and all those kinds of things. So there's just some things that you can't get around that I probably wouldn't change.”

Lori has accepted that plastic-free shopping is not possible for all products, and some of these are essential.

Conventional grocery shopping is further habituated because it is driven by the meanings of linked practices (Mylan, 2015). Lori also buys plastic pots of yoghurt because her children dislike the flavours in the glass pots, illuminating that food provisioning is part and parcel of being a good and caring mother. Mothering is guided strongly by 'attentive love' (Molander and Hartmann, 2018). In this line, Phoebe explained that buying gluten-free bread in plastic is non-negotiable because her daughter requires it.

However, our findings also show that the pro-environmental orientation of our participants works to destabilise conventional grocery shopping by triggering reflexivity and motivating voluntary changes to performances as practitioners navigate the conflicting meanings of convenience and environmental protection. Sarah described the disgust she felt at the sheer amount of plastic in conventional supermarkets:

"It really resonated with me ... to the point where I would walk into the supermarket and just feel like completely overwhelmed and, like, I was unable to buy almost anything."

Sarah's pro-environmental orientation destabilises the formerly mundane act of buying groceries.

Practice destabilisation is evident through the unsettling emotions that emerge when practitioners are forced to navigate conventional grocery shopping, as Phoebe explains:

"I have consumer guilt, so that is quite hard. I, I'll probably take five times as long before I'll buy something over someone else because I think, oh 'I don't wanna buy it with plastic etcetera'."

Similarly, Amelia explained that "I feel really guilty about buying things in plastic". Amelia contemplates every purchase, which is exhausting and emotionally unpleasant:

"Sometimes I get really hung up on the fact that I bought a packet of chips or I bought something that came in plastic or that my partner is on his third Kit Kat this week ... I just feel so horrifically guilty if I don't do it. And then that's sometimes balanced by feeling like there's no point in doing it, because my contribution doesn't mean anything and that it's so overwhelming ..."

Amelia felt overwhelmed, guilty, and frustrated as she navigates grocery shopping, now destabilised. This drives the action she takes to reduce her plastic consumption.

Practitioners enact conventional and plastic-free grocery shopping in hybrid, by necessity. Given the difficulties of performing 'perfect' plastic-free grocery shopping, participants compromise and set rules to carry on as best they can. They navigate the understanding that convenience drives grocery shopping and that plastic-free is sometimes an unachievable ideal. Amelia describes how she compromises by buying bulk:

"If it's too expensive or not convenient [to shop plastic-free] then I will try and buy just big packets of things, so buy five kilos of sushi rice or something from one of the Asian supermarkets, so that at least it isn't lots of smaller packets."

Similarly, Rebecca sets ‘rules to live by’ to help her navigate the otherwise overwhelming conflict she faces as she shops:

“I don’t think that there’s room in our very short and humble lives for an existential crisis for every decision. And, so ... having rules to live by I guess, is easier.”

Martha is specific, describing how she buys the largest packets available, or the packaging with the least amount of plastic:

“So if I'm at New World [premium supermarket] and I want to buy pasta and there's no bulks [refillable loose pasta] left, or whatever, I pick the one that has the least amount of plastic in it. It'll be the cardboard boxes you see with the window, well yeah, or I ... might buy the largest one there is ... ”

Although participants driven by pro-environmental orientation continue to buy goods packaged in plastic, their reflexivity begins to destabilise the formerly mundane practice as they “adapt, improvise and experiment” (Warde, 2005, p.141), and amend the requisite competences, materials and meanings. Martha describes actively aligning her shopping with her values:

“I do try and avoid as much [plastic] as I can, understanding that I do live in a world that is not zero waste. So, there are some things you just cannot really get without it, and then in that case it's just kind of how can I engage with this kind of consumption in a way that's most in line with my values.”

For our pro-environmentally oriented participants, ‘avoiding as much plastic packaging as you can’ becomes part of conventional grocery shopping, destabilising the habituated practice and opening it to change.

4.2. Envisioning

Analysis also identifies that when practitioner pro-environmental orientation aligns with the meanings housed in the plastic-free shopping practice, various mechanisms are triggered that ease practitioners' recruitment to the practice and journey towards becoming loyal practitioners. We term this mechanism is ‘envisioning’. Our findings illuminate how practitioners are drawn to the unique core meanings of plastic-free shopping because, before recruitment, they were already committed to environmental protection. This pro-environmental orientation is fostered through former and overlapping practices. Participants described engaging in domestic cleaning with toxic-free products, attending webinars about the climate crisis, doing ‘proper recycling’, and avidly watching wildlife documentaries. A pro-environmental orientation has become incorporated into their minds and actions, guiding their engagement with other practices. Rebecca feels intently aware that time is running out to tackle the more significant issues:

“I'm well aware that people are saying that we've got less time than we thought to tackle some of the bigger issues that we have ... I'm watching that David Attenborough series, the Perfect Planet with my son and they're looking at all these really wonderful things that we didn't know about.”

Similarly, Abigail noted, “I think I just always try to be good with the planet and always had in mind reduce and reuse and recycle as well”. Laura emphasised that she has “always been pretty environmentally-minded”.

Our pro-environmental participants were keen to move from conventional to plastic-free shopping, actively seeking ways to accrue the necessary competences. Amber searched YouTube for influencers:

“There’s a few people who run like online webinars and they do heaps of videos. I came across one of them and I was like, ‘oh this is really interesting, I’ve been doing it wrong’. So I just researched ... like YouTube and all those kinds of things.” (Amber)

Others observed their friends engaging in the practice already and asked for ‘tips and tricks’, gathering competences as they did, ready for their recruitment.

Several other participants had engaged with social marketing campaigns promoting and rewarding pro-environmental behaviour change, including ‘Plastic-free July’, a global movement to reduce plastic pollution. Participants described discussing the campaign with friends. For Laura, this campaign set tangible challenges that further supported her capacity to envision the practice, gather requisite elements and connect with its core meanings before her recruitment:

“When I heard about the Plastic-free July challenge, I sort of read a few things about it and ... gave it a go. That was the eye-opening moment of ‘holy moly this stuff is just everywhere’.”

Laura was excited by the idea of shopping plastic-free shopping, feeling it was possible and ‘just everywhere’.

4.3. Emotional connection: reward, resonance, and recruitment

Alignment between pro-environmental orientation and the core meanings of plastic-free shopping also fosters an intense practice-practitioner connection. Practitioners felt extreme joy, happiness, gratitude, and gladness as they enacted plastic-free grocery shopping, emotions not normally associated with such a mundane activity. Amelia describes feeling that “Yes, I’m going to do this, because it’s the right thing to do and because it’s really good,” and Rebecca describes how reducing the plastic she throws away makes her ‘feel better about being a human’:

“And we’re thinking, ‘okay, well, I’m contributing in a small way to making this planet beautiful’ ... And I think, ‘every time I fill up one of my jars and I don’t throw something in the rubbish bin, I just feel better about being a human’. I just feel better about the way I’m living my life.”

Rebecca's intense positive feelings towards plastic-free shopping represent her deep connection with the practice, mirrored by others who experience deeply felt emotions at being able to avoid using plastic. For example, Casey described ‘going nuts’ at her friends who had bought a single piece of broccoli and used a plastic bag, and her own commitment to avoiding plastic produce bags, which she ‘hates’ and considers the ‘bane’ of her existence:

“We just avoid buying anything in plastic. We’ll choose to put five apples straight in our trolley as opposed to buying a bag of apples and I hate those produce bags. They’re the bane of my existence.”

Caitlyn is as passionate as Casey, describing how she ‘despises’ the discount supermarket:

“I despise going to PAK’ n SAVE [discount supermarket] ... I despise it. It’s just such a, ooh, horrible place. I realise that I can get everything we need for the week between the greengrocer and the Restore [zero-packaging store] ... I’m like ‘oh thank God’ ... Yeah that’s the difference, it’s emotional, that’s what the difference is, it’s emotional.”

Practitioners connect intensely with practice-free shopping. Their engagement brings intensive emotional reward.

Some practitioners also noted that shopping plastic-free is rewarding because it fosters connection with the local community, feeling positive about supporting a local business run by people who share their concern for the environment. As Caitlyn explained, she tries to “support those businesses that are cognisant and practising what I believe in.” She describes this as ‘resonance’:

“It feels good, there’s ... a resonance and there’s a resonance to doing something ethically, you know there’s such a nice resonance. Like I’m buying this, I’m supporting locally, I’m supporting these young women that have ventured out to do something good for the families and good for their environment.”

Anna described how she puts up with the extra costs of plastic-free goods in order to support pro-environmentally oriented businesses:

“Now I just buy at the organic shop regardless just because, even though it’s expensive, part of my thinking around that is, you know the belief was that we were going to go into this big economic decline, and I wanted the organic shop to be one of the businesses that survived.”

Shopping in specific stores can create ‘resonance’ as a reward of practice-practitioner connection.

Participants also elaborated on the friendships and social ties that have emerged through plastic-free shopping. Some participants resided in a well-known ‘hippy’ town where the Farmers Market and the local refillery and organic shop have evolved as hubs of the community:

“We’ve been going there [local market] for, I don’t know now, one or two years, and we’ve got a relationship with people, so you always happy to see them, they are happy to see you. And there’s like a trust relationship as well ... And it happens once we didn’t have the cash for the eggs and we’re like ... and the guy is like ‘that’s fine just take it and you pay me next week’“. (Abigail)

Similarly, Anna explained they are “quite a community” at her local organic shop, where “there’s a lot of swapping of information”. She describes the community as “hugely important” to her.

There is a supportive tribal feel (Cova et al., 2007) that has permeated the plastic-free shopping practice, naturally overlapping with related forms of ethical and local shopping. The tribal connections form part of the motivations and incentives of the practice, sedimented in the practice's meanings and in the minds and bodies of practitioners.

Furthermore, participants' intense engagement with plastic-free shopping means they quickly become passionate, active recruiters of others. As Rebecca explained, "I'm showing other people to live their life. So, I mean I'm hopeful that my child will be a good human." Others also described advising friends on where they could buy plastic-free tofu or return glass milk bottles, or more broadly on how to reduce or remove plastic packaging from their grocery shop:

"Like my family, my partner's family, I know, I think we definitely influence their behaviours which is really cool to see oh yeah, there was another time when we were shopping the other day and mum was about to buy apples in a plastic bag. Pre-packaged apples and I was like 'no just buy a few loose ones' and she did, so it's good. And then I always, if I see something, a cool video or stuff I'll share it with them." (Casey)

Casey feels that influencing others' behaviour is 'cool', and also admitted that she tries to "influence everyone else as well", because shopping plastic-free matters deeply to her. Similarly, Lori is proud when children deliver an intervention to their grandmother:

"And they [the children] (laughter), proudly at Christmas time ... would be like 'oh Grandma you shouldn't be using straws. You should have reusable straws.' and all that kind of stuff. 'And you should have a compost bin' and things like that, so they were really schooling up the older generation on what to do."

Lori feels deeply connected with the pro-environmental end goals of the practice and is keen to recruit others.

4.4. Adaptation

The strong connection participants feel with plastic-free shopping fosters practice adaptation in both variations of grocery shopping. Adapting to plastic-free shopping places demands on practitioners and requires a significant reconfiguration of formerly routinised tasks (Fuentes et al., 2019; Rapp et al., 2017), even adding interconnected practices and requiring new skills and materials for successful accomplishment (Halkier, 2020; Spaargaren, 2011). However, our analysis finds that the pro-environmental meanings at the core of plastic-free shopping provide sufficient motivational incentive for practitioners to adapt. For example, Abigail found when she started plastic-free shopping that she had a lot to learn, but she enjoyed the process. She learnt from friends, commenting that she found it "so cool" that they were shopping plastic-free, even though it meant significant adaptations such as no longer eating crisps. Similarly, Amelia was happy to disconnect from prior assumptions of convenience and instant gratification in her grocery shopping:

"[Some] times, they won't have any beans that are loose and you have to buy them in a pre-packaged bag, but I tend to avoid things like that if I can, because most of the time it's not really particularly urgent that I need to get green beans."

Other participants also described willingly putting up with the considerable inconvenience. Martha buys her bread from the local bakery despite the lack of a slicer. Lori uses tea leaves rather than bags, describing getting used to making pots of tea as a “learning experience”. Casey described routinely having to avoid products like cheese and chocolate because they are not available without “the plastic foily stuff”. She opts for “something that's quite local and not in a plastic bag” instead.

Our analysis also found that participants are able and willing to adapt to the expanded range of tasks demanded by plastic-free shopping because the practice matters deeply. A few learnt to bake and grew their own vegetables and fruit. Most took glass containers to the fishmonger and kept reusable bags and containers in the car, as Ellie describes:

“I put some glass jars in my car and a couple of plastic containers. I always like popping in just getting something that's easily transferable, like cashews, or I can just pop it in the end and put it back in my usual container later, um, yeah I have to plan.”

Rebecca describes her ‘systematic thinking’ for buying washing up liquid.

“I have two bottles that I put dishwashing liquid in, so I've always got one on the go, so when one gets emptied it goes into the Restore [zero-packaging store] bag, and I fill it up and then it goes in the cupboard and I use the other one til it's empty and then take that. So, but it's just a bit of systematic thinking.”

Participants also write detailed lists to organise how and where plastic-free, unpackaged items could be purchased; Hamish described managing three lists for different stores: the refillery, the greengrocer, and the supermarket. Phoebe similarly described her somewhat complex list procedures:

“When I do the shopping list, I divide it into what I can get at the supermarket, what I can get at the health food shop, the meat place and the bulk bin place. But you know, it takes organisation, and it takes time, and those are things I think a lot of people do struggle with.”

Writing careful lists in advance could be off-putting, but the pro-environmental end goals provide strong motivations for Phoebe to adapt.

Adaptation was also evident in conventional grocery shopping, driven by practitioners who were adept at plastic-free shopping and who were driven by a commitment to pro-environmental action. Mia described asking if she could use her reusable container at the farmer's market, where this was not normal, “just to see” if the vendor would take it. Similarly, Laura takes her containers to takeaway restaurants, knowing it makes her seem ‘a bit weird’:

“I also take my own containers to the takeaway place ... I approached it like it was completely normal and the local takeaways they sort of seem to know me because I'm obviously a bit weird ... I'm the crazy person with their own containers.”

Laura and Mia are deeply engaged with plastic-free shopping, which motivates them to push the boundaries of conventional grocery shopping. Martha also tried to pull her commitment to plastic-free shopping into visiting the local café:

“I will be that person in the café saying, ‘no I don’t want the butter in the plastic’ and ‘I don’t want the straw’, and ‘no I have my keep cup’ and ‘can I have it in a different way’, I’m that person. And I always sort of pre-empt that by saying hey I’m trying to live lower waste; this is why I’m saying no.”

Martha is reflexive about her commitment and how this influences her attempts at changing the norms of other everyday practices.

Other participants were enthusiastic about the possibilities of shaping the mainstream market through consumer action. Ellie, for example, had written emails to a cereal company in response to a change of packaging:

“I used to get the cereal in paper and now it’s in plastic. So, I’ve written to the company and asked them, you know, that’s maybe that’s what we should do. ‘Cause I’m, I’m just doing it more passively, I’m just choosing what I can, but maybe if I let the companies know that I’m choosing them because they aren’t wrapped in plastic then they are more likely to make a change.” (Ellie)

Ellie reflected that beyond choosing to shop in plastic-free stores, ‘maybe’ practitioners should put pressure on brands to take more positive action concerning plastic packaging, so they are ‘more likely to make a change’. She is clear that there is a role for pro-environmental consumers in driving practice change.

5. Discussion

Our research draws on and contributes to the growing body of environmental management (Khatami et al., 2023; Mathew et al., 2023) research committed to understanding how policymakers, social marketers, retailers, and manufacturers can foster behaviour change to reduce plastic consumption. Existing practice theoretic research (e.g. Fuentes et al., 2019) has usefully advanced from the behavioural-individualist focus of much research and policymaking to consider the networks of practices and institutions involving food retailers, manufacturers, and consumers that “maintain the role of plastics in society” (Evans et al., 2020, p.1). This research highlights that removing plastic from grocery shopping is very difficult (Rapp et al., 2017) and places stringent demands on consumers. However, our research theorises four mechanisms that support the emergence of the plastic-free shopping practice as a competitive, albeit fragile, entity. These are *destabilisation*, *envisioning*, *emotional connection*, and *adaptation*. Destabilisation and envisioning help with recruitment to plastic-free shopping, and emotional connection and adaptation help support practitioner loyalty and commitment as their careers rapidly progress, and also the future practice trajectory as new practitioners are recruited. We term these mechanisms ‘bright spots’ (Bennett et al., 2016), or points of optimism, in the emergence of plastic-free shopping.

Following Fuentes et al. (2019), we understand plastic-free shopping as a fragile variation of grocery shopping, but we foreground how it competes with conventional grocery shopping and the role of committed consumers in driving practice transformation. We explore how consumers navigate both forms of the practice in everyday life; how they ‘shop around’ (i.e., multiple shops and trips), have accessibility or availability issues when attempting to shop plastic-free (Lofthouse et al., 2009) and fit grocery shopping alongside other practices (Godin and Sahakian, 2018). Particularly, our research foregrounds the role of practitioners as

triggers of practice transition in the socio-technical system in which grocery shopping sits. Practices are reproduced and mutated through local processes embedded in repeat practitioner performances. Furthermore, recruits come to practices with their histories and interests (Fuentes et al., 2019), embodied through their repeated performance of prior and ongoing practices. In this way, practitioner histories, practice memories and performance of practices have a “transformative effect” over practice trajectories (Shove et al., 2012, p.66). Practices are recursive; “labile and altered through human activity” (Schatzki, 2001, p.32), and practitioners shape the trajectories of practice ‘entities’ and their variations. Practice evolution can lead to forks in the road for practices as different modes come to coexist or compete (Hui, 2016).

Our findings illuminate important targets for environmental management seeking to implement behaviour change approaches that contribute to a circular economy in which plastic packaging is reduced, through consumer refusal, reuse, or recycling (Khatami et al., 2023; Mathew et al., 2023; Rivers et al., 2017; Jory et al., 2019). By focusing on the intersection between practitioners and the practices of grocery shopping, we illustrate multiple footholds for change that can help the practice of plastic-free grocery shopping gain stability (Hargreaves, 2011). Other practice theoretic research seeking to conceptualise an approach to changing persistent, shared practices (e.g. Blue et al., 2016; Spotswood et al., 2021) has emphasised the need to first address practice elements to foster social change; promote new meanings, provide relevant materials and assist in the development and diffusion of specific competences and skills. It also emphasises the need to pay attention to practices that interconnect, share elements and infrastructures and limit the capacity of people to voluntarily change their behaviour (Watson et al., 2020). Research emphasises the need for multiple intervention approaches (Borg et al., 2022a) to reconfigure networks of practices and foster sustainable societal transition. Following this, in Table 2 we provide examples of specific opportunities for environmental management that build on the ‘bright spots’ we found through our analysis.

Table 2. Examples of environmental management approaches to support the ‘bright spots’.

Destabilisation	<ul style="list-style-type: none"> • Promotional approaches to raise awareness of environmental harm caused by plastic (e.g., microplastics, plastic pollution, limited recyclability) (Borg et al., 2022a, Borg et al., 2022b). Promotion may not achieve direct behaviour change outcomes (e.g., Dunn et al., 2020) but can foster destabilisation, reflexive consumption and provide a bright spot for future practice transition. • Fostering pro-environmental orientation in consumers through connected practices (e.g., practices that reduce emissions such as utility cycling, recycling practices, or food waste and meat reduction). Meanings can circulate between practices, representing ‘spillover’ as practitioners accrue pro-environmental identities that trigger behaviour change elsewhere (Poortinga et al., 2013). • Policy change that continues to contest plastic as a ‘matter of concern’ (Hagberg, 2016), diffused through popular media such as to form a coalition of shared understanding amongst the public (Sutinen and Närvänen, 2022; Welch et al., 2021).
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Social marketing programmes can offer trial opportunities, ways to accrue necessary skills and understand the materials and other demands brought by the practice. Social marketing recognises that engaging and supporting consumers and offering tangible opportunities for behaviour change are important parts of strategic approaches to behaviour change in combination with communications (Tapp and Rundle-Thiele, 2016).

Envisioning

- Online communities can provide an opportunity for potential recruits to connect with those further along their practice career (Kozinets et al., 2012). This can help consumers envision “potential relationships among practice elements”, which is an important pathway to recruitment (Thomas and Epp, 2019, p.565).
- Visibility supports envisioning. Marketing promotional tools such as social media influencers can help foster a sense of normality (Rettie et al., 2012). Retailers can also support consumers by making plastic-free shopping “accessible, visible and incorporated” into everyday grocery shopping as conveniently as possible (Cherrier, 2006, p.521). For example, some New World (premium) supermarkets in New Zealand have revitalized and expanded their bulk bin offerings—rebranded as “CareFillery”.

Emotional connection: reward, resonance and recruitment

- Plastic-free businesses can foster the emotional connection between their customers and the practice through targeted sustainability marketing (e.g., Communicating the business ethos and its transformative purpose (Kemper and Ballantine, 2019)).
- Community-based social marketing can provide a way of fostering community cohesion and support for sustainable transition (Carrigan et al., 2011). This can help foster resonance between pro-environmental consumers by providing opportunities for social connectivity. An example of this approach elsewhere is the ‘repair café’ (Meißner, 2021).
- Pro-environmental consumers are a potential source of word-of-mouth marketing, which can be a powerful promotional tool for plastic-free businesses (Sweeney et al., 2012) or even a form of (micro-)social influencer (Park et al., 2021),

Adaptation

- Businesses, especially retailers, can help practitioners overcome the demands and expanded tasks of plastic-free shopping, including gaining the necessary competences and materials. Specialist retailers can focus on increasing convenience and supporting the re-materialisation of the practice. Social marketing efforts in the Netherlands offer reusable containers and measuring cups to reduce food waste. Conventional retailers can increase their provision of plastic-

free goods, supported by policy-level incentives mandating this.

- Focusing upstream, policies should encourage plastic-free transition in supply chains (Beitzen-Heineke et al., 2017; Borg et al., 2022b; Steinhorst and Beyerl, 2021) which can translate to greater access for consumers and lower prices. Manufacturers should continue to invest in plastic packaging alternatives where package-free distribution is not viable.
- Focusing on the practices that intersect with grocery shopping can help focus on ways to increase the convenience of plastic-free shopping, for example, providing plastic-free lunch goods at workplaces and schools.

Our study also makes important theoretical contributions to existing research through our novel practice theory approach that foregrounds practitioner reflexivity, pro-environmental orientation and the emotional rewards of plastic-free shopping that stabilise and support ‘bright spot’ mechanisms. Our research pays particular attention to the intersection between the core meanings of plastic-free shopping (e.g., waste reduction, sustainability) and the pro-environmental orientation that has been fostered through prior and parallel practice enactments. By foregrounding this intersection, we attend to consumers' growing concern for pro-environmental action (Jacobsen et al., 2022) in a “non-individualist way” (Spaargaren, 2011, p.813); by situating ‘environmental concern’ as part of intersecting practice templates. Our research illuminates how pro-environmental orientation becomes sedimented through practices such as watching wildlife documentaries and engaging in toxin-free domestic cleaning. The intersection between practices and practitioners in our study triggers the *destabilisation* of mundane grocery shopping practice. This occurs as potential practitioners experience emotional turmoil (e.g., disgust, guilt, overwhelmed) as they enact conventional grocery shopping. As such, prior ‘practical consciousness’ (Giddens, 1986) is disturbed and unsettled. This form of consciousness characterises the routinised grocery shopping practices that had carried practitioners along unthinkingly (Hitchings, 2012) prior to the critical moments (Giddens, 1986) that brought mundane grocery shopping (with plastic) abruptly into ‘discursive’ consciousness. Through this discursive consciousness, manifesting as extreme consumer guilt, reflexive pro-environmental orientation habituates and consumers are ready to adapt their grocery shopping.

Furthermore, we illuminate that reflexivity triggers rapid emotional investment in plastic-free shopping. Pro-environmental practitioners experience strong positive *emotional connection* (Valor et al., 2018) with the practice. They enjoy ‘feeling better about being a human’, become aficionados and recruit others, which is vital for creating practice stability (Shove et al., 2012). Practitioners furthermore reap the rewards unique to plastic-free shopping, feeling resonance with others. Reflexive, deeply committed practitioners bring a willingness to *adapt*; a “willingness to re-frame, re-skill, and re-materialize the shopping practice” (Fuentes et al., 2019, p.264). They accrue new skills (e.g., list writing), acquire new materials (reusable bags and jars) and integrate alternative meanings (e.g., shifting away from the dominance of convenience). Reflexive, pro-environmentally oriented practitioners recognise and embrace the challenge of plastic-free shopping.

5.1. Limitations and future research

Our research has limitations and provides opportunities for future research. Our data included self-reported behaviours, experiences and concerns. Future longitudinal and observational research would provide further insight into how practices change over time and how different retail, policy and marketing interventions intersect, constrain and support practices over time and across different populations. For example, lower socio-economic and older people (Duizer et al., 2009) may face unique challenges in carrying out plastic-free shopping.

Furthermore, research on the impact of COVID-19 on plastic practices could provide interesting points of reflection and future research (e.g., Leal Filho et al., 2021b). Notably, our participants were sometimes no longer allowed to bring containers to stores due to hygiene concerns, and yet research elsewhere notes that disruptions to food shopping practices during lockdown sometimes triggered plastic-reducing storage and shopping practice adaptation (Kemper et al., 2023).

Future research also needs to understand how practitioners without strong pro-environmental orientation experience and navigate the demands of plastic-free shopping and whether their engagement is possible and has implications for the practice's emergence as a competitive alternative mode of shopping. Research shows that civic and multi-stakeholder input (Sewak et al., 2021a) and co-design (Sewak et al., 2021b; Willmott et al., 2022) increase the success of environment and waste management initiatives, as such, future research should include multi-stakeholder views and participatory research approached when designing interventions. Finally, future research should explore the enactment of online plastic-free grocery shopping—principally as packaging is unnecessary to provide nutrition and brand information online. Online retail may also address some of the accessibility and convenience issues illuminated by our study.

6. Conclusion

We provide insight into ‘bright spots’ (i.e., points of optimism) (Bennett et al., 2016) that can lead to stabilising plastic-free shopping, a more sustainable practice mode. We define these as *destabilisation*, *envisioning*, *emotional connection*, and *adaptation*. Our practice-theoretic analysis illuminates specific opportunities for environmental management that build on these ‘bright spots’, helping support the emergence of plastic-free grocery shopping as a competitive practice variation. Our findings support prior research that emphasises the challenges in shopping plastic-free in the current food system, given the pervasiveness of plastic. As such, we suggest that policy dialogue continues to contest plastic as a ‘matter of concern’ (Hagberg, 2016), and that policies should encourage plastic-free transition in supply chains to ensure greater access for consumers and lower prices. However, our research emphasises the significance of committed, reflexive consumers in practice transition, and the role of social marketing and other consumer-oriented interventions in supporting and enabling consumers to shift and shape unsustainable practices.

Credit author statement

JK – JK and FS contributed equally to the paper. Conceptualization; Investigation; Methodology; Formal analysis; Writing - Original Draft; Writing - Review & Editing; Funding acquisition; FS – JK and FS contributed equally to the paper. Conceptualization;

Methodology; Formal analysis; Writing - Original Draft; Writing - Review & Editing; SW – Conceptualization; Writing - Original Draft; Writing - Review & Editing.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Joya Kemper reports financial support was provided by The University of Auckland.

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Data availability

The authors do not have permission to share data.

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