A New Way of Eating:

Creating Meat Reducers, Vegetarians and Vegans

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Social Policy, Sociology and Social Research

The University of Kent

A thesis submitted for the degree of

Doctor of Social Policy

September 2019

Word count: 97,734

Abstract

The proportion of the British population reducing their consumption of animal food products has increased dramatically over the last decade, while vegetarian and vegan options are now widely available in supermarkets and restaurants across the UK. This phenomenon presents vital benefits for climate change, environmental degradation, human health and animal welfare. Yet, little research has investigated the rapidly growing trend. A broader understanding of the decision to reduce one's consumption and the cognitive, social and physical processes involved in maintaining dietary changes is essential for policy makers, campaigners and researchers working toward a sustainable future. Meat reduction and vegan campaigns by non-governmental organisations serve as a primary promoter of reduction and present a unique opportunity to research reducers when they may first be seeking a dietary transition. The theoretical framework employed within this dissertation combines the first comprehensive model of behaviour change, the Behaviour Change Wheel (Michie, Atkins and West 2014), with the fields of social consumption and sustainable and ethical consumption to analyse the reducer and the reduction process through a more comprehensive framework. A mixed-methods approach has been used to investigate the barriers, motivators and goals of participants in seven UK-based meat reduction and vegan campaigns through focus groups (n=33) and a longitudinal web-based survey (n=1,587). To the best of the researcher's knowledge, this represents the most comprehensive study of reducers and reduction campaigns to date. Interviews with campaign staff (n=13) and an examination of campaign messaging and strategies have been used to further analyse campaign participation and the reduction process. Findings reveal key trends within highly diverse approaches to reduction, including a *reduction hierarchy* that prioritises red meat and neglects fish and egg reduction through a tendency for small, gradual dietary changes. While meat reducers were likely to be successful on a short-term basis, they were unlikely to maintain reductions over a prolonged period. Those with the greatest levels of abstention were, instead, the most likely to meet their reduction goals. Animal protection also emerged as key for many reducers, potentially creating a new perspective – a *mindshift* – that re-positions the animal source within the consumption process. Findings suggest that policy makers, campaigners and advocates need to consider the psycho-social element within the reduction process, with the potential for a wide variety of consumer types and, importantly, the need to not simply address what is consumed but to address normative omnivorous consumption that is formed around a meat component and de-values meatless meals.

Acknowledgements

I would first like to give my humblest thanks to my three supervisors, whose help was instrumental in this project's formation and completion: Dr. Adam Burgess, Dr. Joy Zhang and Dr. Jack Cunliffe. Thank you for sharing your expertise, guidance and insights over the past three years. I truly cannot imagine a more competent or helpful team to have guided me through this process. I would also like to thank the University of Kent SSPSSR Department for granting me the opportunity and funding to complete this research.

Thank you to all of my friends and family who supported me throughout this journey. Particularly, thanks to my wife, Jordan Collins, for her belief in my capabilities and support, as well as to my dear friends for their support and assistance: Natasha Boyland, Emma Goddard, Leanna Jones and Laura Tapp.

My sincerest thanks to all of the UK non-governmental organisations who participated in this research project; it truly would not have been possible without your time and support: Animal Aid, Animal Equality, CreatureKind, Friends of the Earth, Viva! and Part-Time Carnivore. Thank you to the staff members for your time in interviews, providing additional information about your organisations and campaigns and providing your feedback and advice throughout the process. Thank you also to VegFest UK for your support, including providing free event tickets and space for focus groups.

Thank you also to the academics, activists and staff members of governmental and non-governmental organisations around the world who also donated their time and expertise to the formation of this project.

Finally, I am immeasurably grateful to all of the participants who provided the data that was essential to the formation of this dissertation's conclusions.

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List of Abbreviations

3DV	Viva!'s 30 Day Vegan
AA	Animal Aid
AE	Animal Equality
AFP	Animal food product
BCW	Behaviour Change Wheel
CIWF	Compassion in World Farming
CK	CreatureKind
CKC	CreatureKind Commitment
COM-B	Capability, Opportunity, Motivation and Behaviour
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FOE	Friends of the Earth
GVC	Great Vegan Challenge
GVUC	Great Vegan University Challenge
HIC	High income country
iA	iAnimal
LEB	Let's Eat Better Pledge
MFM	Meat Free May
NGO	Non-governmental organisation
PTC	Part-Time Carnivore
SCAR	The EU's Standing Committee on Agricultural Research
TPB	Theory of Planned Behaviour
TTM	Transtheoretical Model of Behaviour Change
UK	United Kingdom
US	United States
Veg*n	Vegetarian or vegan

Chapter 1 Introduction

In 2017 the UK saw a 1,500% increase in vegan food sales and a 987% increase in the demand for vegetarian take-out options (Peat 2016; Just Eat 2018), and 2019 has now been dubbed 'The Year of the Vegan', when 'veganism goes mainstream' (Parker n.d.). The transition toward more plant-based foods through the reduced consumption of animal food products (AFPs) presents essential benefits for global sustainability, climate change, environmental degradation, human health and animal welfare. In spite of this significant trend, little research has investigated the decision to reduce one's consumption and the cognitive, social and physical processes involved in maintaining dietary changes. This dissertation examines a primary source of meat and AFP reduction – participants in non-governmental organisations' meat reduction and vegan campaigns. This work presents key insights for those advocating for a sustainable future, including an in-depth analysis of the reducer and the reduction process to support the development of policy, campaigns and research.

An examination of these campaigns' participants presents an important glimpse into the reality of meat and AFP reduction (hereafter, reduction), finding that the highly individualised process can be interpreted through specific trends. The consumer may change not only what they eat but how they are eating, revealing the influence of social forces and constructed omnivorous norms on dietary practices. The act of consuming or abstaining creates meaning, such that in order to understand the struggles and successes of reducers, the social and cultural context that creates norms and connections around specific food items and meal constructs needs to be considered (Douglas 2007a). The reduction phenomenon is important for policymakers looking to create a sustainable future and in the broader understanding of an increasingly popular food trend. This knowledge is essential in creating policy to promote sustainable dietary shifts through an understanding of key inhibitors and areas of support for potential and current reducers.

Over the past fifty years the global consumption of meat has increased by more than thirty percent (Sans and Combris 2015). Planetary diets have shifted from a reliance on plant-based foods

toward more animal-based and processed foods (Vinnari and Tapio 2012). However, trends may be shifting in some parts of the world, with the purchasing of meat and meat products, milk and cream decreasing steadily since 2012 in the UK as consumers increasingly turn to meat-free and veg*n alternatives (Department for Environment Food and Rural Affairs 2017; Just Eat 2018). Research has demonstrated the strength of a variety of ethical and health-based arguments for reducing the consumption of meat and AFPs globally, particularly in high-income countries (HICs), including: climate change, environmental degradation, global equity, human health and animal protection (e.g. Henning 2011; Herrero *et al.* 2013; Weis 2013). Support for, and the continuation of, such research has also arisen from some of the world's most powerful organisations, including international governing organisations, such as the European Union and the United Nations, and national governmental and non-governmental organisations (e.g. Standing Committee on Agricultural Research 2011; European Environmental Agency 2015; Briggs 2015; Department for Environment Food and Rural Affairs 2011; Uryu *et al.* 2008; Macdiarmid *et al.* 2011).

The increasing urgency to achieve planetary sustainability has become an area of utmost import to the international community and animal agriculture is a key factor in continually worsening trends of potentially catastrophic environmental degradation and global sustainability (Weis 2013). The production and use of edible plants as feed for animals utilises, on average, ten times more resources than plant-based foods (Westhoek et al. 2014). The United Nation's Food and Agriculture Organisation most recently found animal agriculture to be responsible for nearly ninety percent of all agricultural and 14.5% of all global greenhouse gas emissions (Gerber *et al.* 2013; Food and Agriculture Organization 2014), more than those from all forms of transportation combined (Intergovernmental Panel on Climate Change 2014). The repurposing of land to raise agricultural animals and grow feed is also a primary contributor to decreasing biodiversity through rapid losses of wild and arable land – approximately 2.2 million hectares annually in the EU – including 55% of natural habitat over the past few decades (Standing Committee on Agricultural Research 2011; Food and Agriculture Organization 2010). Additionally, the European Union reports

that over ninety percent of fish stocks are now fully exploited, overexploited, depleted or recovering from depletion (Standing Committe on Agricultural Research 2015).

The rapid increase in the production and consumption of animal food products has also come at significant cost to the welfare of human and non-human animals. Despite large increases in the number of edible calories produced, food access and equity are becoming areas of growing global urgency. While more than two billion people are overweight or obese, nearly one billion are mal- or undernourished (Food and Agriculture Organization 2010). Researchers have estimated that if the feed grown for AFP production was instead fed directly to humans, an additional 1.3 to 3.6 billion (Davis and D'Odorico 2015) or over three billion (Smil 2002) people could be fed.

Animal agriculture has also been connected to the spread of obesity, non-communicable diseases, antibiotic resistance and zoonoses (animal-derived diseases that can spread to humans) (Greger 2016; Vergnaud *et al.* 2010; Dinu *et al.* 2016). *The China Study* (Campbell, Ii. and Campbell 2016), the most comprehensive study ever conducted on nutrition, found the increased consumption of animal-derived protein to be one of the primary factors in rising cancer rates in China. In addition, two-thirds of global antibiotics are used for animal agriculture, directly contributing to greater resistance in humans, an area of increasing worldwide concern (Center for Disease Dynamics Economics & Policy 2015; HM Government 2015). Meanwhile, as diets have shifted from plant-based foods, significant benefits have been identified for increasing the consumption of fruits, vegetables, whole grains and fibre (Joint Research Centre 2015; Union of Concerned Scientists 2013).

The FAO estimates that over 75 billion land animals are killed annually for food production (2016). Animal agriculture has become progressively more industrialised over the past century, leading to significant animal welfare concerns that include overcrowding, a lack of access to outdoor spaces and the inability to exhibit natural behaviours, while the physiological limits of animals' bodies are further strained when reaching slaughter weight at ever younger ages (Weis 2013; D'Silva and Webster 2010). As diets increasingly depend on poultry, the overwhelming majority of these land animals are chickens (Weis 2013). Broiler (i.e. meat) chickens have been

genetically bred to gain weight four times faster than in the 1950s (an average of fifty grams per day), enabling their slaughter at just 42 days and causing lameness, abnormal bone development and heart failure (European Food Safety Authority 2010; Compassion in World Farming Trust 2005). In egg-laying farms, male chicks are routinely killed shortly after birth by either gassing or maceration (Humane Slaughter Association 2005). The conditions of other types of food animals also present significant concerns for animal welfare (e.g. Eurogroup for Animals and Compassion in World Farming 2015; Royal Society for the Prevention of Cruelty to Animals 2009). Fishes and other aquatic animals receive very little legal protection and are explicitly excluded from animal welfare laws (e.g. Crown 2006), despite estimates that one to three trillion fishes are killed each year (Fishcount.org.uk 2018). According to research commissioned by the European Parliament: 'most kinds of animals kept in the EU are not covered by legislation, including some of the worst animal welfare problems' (Broom 2017, p.54).

Concerns regarding animal suffering can include those, as above, about the 'welfare' of animals, as well as those more specifically pertaining to 'animal rights'. An evaluation of the ethical and philosophical arguments underlying these two areas of thought is outside of the scope of this research project but is an important distinction between attitudes toward animal suffering and consumption. Animal welfare is overseen by specific laws and regulations for animals and refers to 'how an *animal* is coping with the conditions in which it lives' so that they are 'not suffering from unpleasant states such as pain, fear, and distress' (Crown 2006). This can lead to the promotion of 'less and better' AFP consumption through total reductions and a reliance on 'humane meat' and 'humane slaughter' (e.g. Dibb and Salazar de Llaguno 2018). An animal rights perspective instead incorporates a fully vegan lifestyle that 'seeks to exclude—as far as is possible and practicable—all forms of exploitation of, and cruelty to, animals for food, clothing or any other purpose' (The Vegan Society 2018). This research project focuses on the food element of animal welfare and rights and will use the umbrella term, animal protection, to include all arguments pertaining to reducing (or eliminating) the suffering of non-human animals.

Research suggests that these motivating factors – climate change, environmental degradation, human health, global equity and animal protection – are contributing to reduction trends in countries around the world with the highest rates of AFP consumption, including the UK. Recently, research commissioned by the Vegetarian Society in conjunction with the 2014 British Social Attitudes survey found that 44% of British respondents either did not eat meat or had reduced or were considering reducing their intake (Lee and Simpson 2016). 29% of all respondents also reported having reduced their consumption within the past year. A 2014 YouGov survey by the Eating Better Alliance, a non-profit organisation founded by Friends of the Earth, also found that 35% of Britons are willing to eat less meat and 20% reported having reduced over the previous year (Dibb 2013; Dibb and Fitzpatrick 2014). Research by Dagevos and Voordouw (2013) also found that 42.5% of British people do not consume meat at least three days a week.

To understand and support this growing trend, policymakers and researchers need to better understand how to promote successful reduction, including the nature of barriers that may be addressed through campaigns or policy. Historically, researchers have debated the primary reduction barriers, with some arguing that taste is the main obstacle (e.g. Lea, Crawford and Worlsey 2006), while others have emphasised psychological (e.g. Monteiro *et al.* 2017) or social (e.g. Twine 2014) elements. Those within the field of the sociology of consumption have emphasised the impact of social and cultural forces on dietary habits (Douglas 2007a; Jakka Gronow and Warde 2001; Warde 2000; Warde 2014), in that 'eating is always social; even during eating, the meal is subject to community rule, to conversation' (Douglas and Isherwood 1996, p.50). The continued consumption of AFPs could also be largely due to the abstraction of the animal source and a disconnect between one's concern for animals and their consumption (Bastian and Loughnan 2017). Some researchers also describe the need for multiple strategies and messages (e.g. Joy 2011), while others argue for the promotion of a singular, vegan goal (e.g. Taft 2016).

Changes to public policy are likely to be key in promoting dietary trends but are unlikely to occur in the current political climate. Governing organisations have been found to overestimate public backlash to policies promoting reduction, while corporate powers generally tied to the

industry remain strongly opposed to any such measures (Wellesley, Happer and Froggatt 2015; Simon 2013). Despite the disproportionate level of responsibility placed on the consumer – and the limited potential of behaviour change interventions (Akenji 2013; Shove 2010), in the absence of public policy, increased awareness may be a necessary first step to achieve widespread public support and pressure for the necessary political and social change.

Currently, non-governmental organisations serve as a primary site of awareness-raising initiatives and are likely to be a central component in increasing public knowledge about AFP reduction. These organisations sit at the forefront of promoting individual dietary change, often working directly with policymakers and the public (potential reducers) in their work to create and support reduction. Yet, little research has been conducted to investigate these campaigns. Present research has generally focused on whether or not environmental and animal protection organisations promoted meat reduction, vegetarianism or veganism (Doyle 2011; Laestadius *et al.* 2013; Bristow and Fitzgerald 2011; Freeman 2010). These campaigns represent an important window to understand not only the strategies being used to promote reduction but the nature of reduction itself.

This project provides a valuable insight into the reduction journeys of participants in UK-based meat reduction and vegan campaigns over a six-month period. By measuring reported motivators and barriers alongside dietary habits and goals, key reduction opportunities and obstacles are highlighted. The research is important for campaigners and others involved in the promotion of AFP reduction and abstention, while identifying key barriers and motivators that may be utilised in future policy development. Findings particularly highlight the importance of having multiple, targeted approaches that incorporate consumption's social element.

The research project is analysed through an inter-disciplinary approach that informs the first comprehensive model of behaviour change, the Behaviour Change Wheel (BCW) (Michie, Atkins and West 2014), with three theoretical fields – social, sustainable and ethical consumption. Instead of simply combining theories (i.e. 'a mishmash of chalk and cheese', Shove 2011, p.263), they serve to complement one another and integrate well with the BCW. The work of sustainable

and ethical consumption theories forms the research's foundation, as the ethical basis for reduction promotion. These arguments are then situated by theories of consumption within the social and cultural realm such that, for instance, the moral imperative to protect animals is constrained by the cultural acceptability of meat consumption and the societal changes that would be needed to better support widespread individual changes. Within these broader theories exists the individual reducer, who remains situated within a specific ethical and social reality and whose perceptions and habits can be analysed through the BCW. A broader consideration of practice and transition theories also serves to bridge the macro (i.e. social) and micro (i.e. individual behaviour change) components underlying this framework.

Working directly with seven UK-based campaigns promoting meat reduction and veganism, this project implements a multidisciplinary, mixed method, longitudinal study to understand the perceived opportunities and barriers to reduction for their participants. This includes an analysis of the types of interventions used, the dietary goals and habits of participants and motivators and barriers to reduction. This comprehensive approach to evaluating the reduction journey situates and examines the behaviour of the reducer within the social world. The analysis of broader and individual trends presents valuable insights for policy, industry and campaigns in how reduction can be promoted and achieved. This research's use of the BCW framework to identify key barriers and opportunities for specific groups enables policymakers and campaigns to use the framework to create targeted interventions aimed to promote lasting and successful reductions.

To the best of the researcher's knowledge, this study comprises the most comprehensive piece of research into reducers and reduction campaigns to date (n=1,587). Participants completed a series of surveys about their dietary habits, goals and reduction motivations. A set of questions also addressed perceptions about a variety of reduction barriers, such as the availability of vegetarian and vegan (hereafter, veg*n) food or the perception that AFPs are essential to a healthy diet. Surveys were repeated over a six-month period to analyse fluctuations in perceptions and to evaluate dietary changes.

The qualitative component of the project includes a review of campaign advertising, messaging and content, in addition to interviews and ongoing communications with thirteen staff members. Five focus groups were also held with campaign participants (n=33) to support data triangulation and enable a richer understanding of the reduction journey, including decisions to reduce, struggles with transitioning one's diet and engagement with particular campaigns.

This project is unique in its approach to examining an important area of behaviour change in the UK and many other HICs. The spread of meat reduction, pescatarianism and veg*nism is not only an interesting cultural phenomenon, it is also an essential area for future sustainability and is likely to be a key component for future policies promoting sustainable consumption. This project deepens our understandings of the reducer and the reduction process. As this dissertation will explore, in changing dietary habits reduction may have far-reaching implications for reducers' experience of self, as well as their social and physical environment.

1.1 Thesis structure

This dissertation is structured to address the different aspects of the reduction journey. Each chapter builds upon prior chapters to move through the setting (the campaigns) and the participants to dietary changes, which are then situated within motivating factors and barriers. Chapter 2 provides a literature review on studies about reduction campaigns and reducers – their characteristics, motivations and barrier perceptions –, while situating this project within prior research and outlining the theoretical framework. Little research has been conducted with reduction campaigns and contradicting findings emerge around who is most likely to reduce. Chapter 3 provides a rationale and overview for the particular mixed method approach used in this research project.

The first data chapter, Chapter 4, analyses how reduction is promoted by the seven campaigns. This includes an overview of their strategies, content and promotional materials. Data is derived from interviews with staff members and campaign communications and messaging.

Chapter 5 examines who is participating in these campaigns, including sociodemographic characteristics and reported dietary habits and goals. Trends by campaign type, such as the propensity of vegan campaign participants to be vegetarian and a lack of sociodemographic diversity within all campaign populations, are contextualised within group and individual variability.

Chapter 6 provides an analysis of measured dietary reductions over the six-month research period, exploring how dietary patterns changed over time. A reduction hierarchy is identified that privileges red meat reductions and de-values that of fish and eggs. Reducers are found to generally make small dietary changes through a gradual process, with those seeking greater abstentions being the most likely to meet their reduction goals.

Chapter 7 evaluates reported motivators for reduction and their connections to the successful achievement of reduction goals, participant characteristics and campaign content. Data suggests that animal protection is particularly impactful for planned reducers. Health was a less prominent motivator amongst this group of participants, in contradiction to prior research into reduction motivators, evidencing a potential engagement gap in reduction campaigns.

The final data chapter, Chapter 8, considers participants' perceived barriers to reduction at various stages of their reduction journeys in relation to their sociodemographic and dietary traits. Social elements emerge as particularly impactful for veg*ns through stigmatisation, negative reactions of friends and family and feelings of isolation. Accessibility (i.e. availability and convenience) and knowledge components (i.e. the ability to identify or prepare vegan food) may be key during the early stages of reduction. However, perceptions are found to ultimately be highly dependent upon cultural constructs, such as conceptions of AFPs as more 'valuable' than plant-based foods.

Chapter 9 reviews the key themes that emerged from the data, which include a lack of participant diversity (Chapter 5), the important but under-addressed social and cultural components of consumption (Chapter 8), a re-valuing of AFPs through the re-centring of the animal source to create a potential vegan mindshift (Chapter 7), the variety of roles campaigns may fill in

reduction journeys (Chapter 4 and Chapter 6) and the formation of a 'new way of eating' that embraces ethical consumption and questions omnivorously normative consumption (Chapter 6 and Chapter 8).

Findings suggest that the reduction process is ultimately highly personal and individual in nature. Considerations for social and cultural human and animal elements are important in supporting individual needs, promoting greater reductions and helping campaigns reach more diverse populations. To significantly change habits, interventions may need to consider the social nature of consumption, such that reduction is not simply about eating less but about eating differently. Within the data, temporary or unsuccessful reducers are most commonly those reliant on omnivorous, meat-centric norms who may not have developed new, unconscious veg*n habits. Successful reducers generally seem to create new ways of eating centred around reduction habits and a re-centring of the animal source.

The concluding chapter, Chapter 10, summarises the main findings, discusses the project's contributions to knowledge and identifies key recommendations for campaigns, policy makers and researchers. These include the engagement gap for health-motivated reducers, the overrepresentation of individuals from certain sociodemographic groups and the potential for targeted interventions to address varied social contexts.

Chapter 2 Literature Review: existing research on reducers

This chapter will examine previous findings relevant to the research project from academic, governmental and non-governmental sources. Several areas of literature and academic debate were examined in the formulation of this dissertation. The first section describes the theoretical framework implemented within this project, with an overview of the Behaviour Change Wheel and the fields of social, ethical and sustainable consumption. The second section discusses previous findings about the spread of meat reduction and vegetarianism and veganism (veg*nism) in the UK, including potential reducer characteristics, such as their propensity to be female. The third section provides an overview of previous literature on veg*n and reduction campaigns, including arguments for and against various reduction promotion tactics. The final sections discuss previous findings about reduction motivators (2.4) and barriers (2.5), before a concluding section.

2.1 Theoretical Framework

Meat and AFP reduction may be best understood as a form of dietary behaviour change. As the research focus is individual behaviour, this research project has been constructed through a consideration of a broad range of behaviour change theories. In regards to this research topic, the field of behaviour change faces three primary constraints in its applicability. First, many popular models of behaviour change, such as Prochaska *et al.* (1992)'s Transtheoretical Model of Behaviour Change (TTM), have focused exclusively on the individual as the locus for behaviour change. Prochaska *et al.* (1992) theorised change as occurring through a series of stages, such that a person would first become informed of the need to change, decide to make a change (or not), transition (or not) and then maintain or terminate this new habit.

According to Michie *et al.*'s systematic review of the use of behaviour change theories in research, the TTM model is the most prominently used, accounting for one-third of the 276 articles they reviewed (2014). The second most popular model, the Theory of Planned Behaviour (TPB), was

utilised in thirteen percent of articles (Michie *et al.* 2014). Like the TTM, the TPB focuses on the relationship between intention and behaviour change, theorising that intent is the best predictor for the occurrence of a particular type of behaviour (Ajzen 1985). Popular behaviour change theories, including the TTM and the TPB, have faced criticism as incomplete models that neglect key behavioural components (Prochaska 2006).

Such behaviour change models can neglect the social and cultural contexts in which dietary decisions are made. Consumption has been an important sub-discipline of sociology and anthropology since the mid-1980s (Jukka Gronow and Warde 2001) and theoretical developments from researchers in the field are important contributions to a more complete understanding of dietary trends, providing insights into these often hidden influences. Individual dietary behaviours are therefore conceptualised as deeply entwined with social and cultural factors (Douglas 2007b). Some of the dominant social consumption theories have envisaged dietary behaviours as ultimately status-seeking (Veblen 1899), imposed through production (Galbraith 1998), pleasure-seeking (Scitovsky 1976), class-based communication (Douglas and Isherwood 1979) or derived through class structures (Bourdieu 1996). Consumption practices can also be deeply entwined with notions of masculinity and power (Adams 1990).

Anthropologist Mary Douglas envisages the individual and society as closely interconnected; 'the two bodies are the self and society: sometimes they are so near as to be almost merged; sometimes they are far apart. The tension between them allows the elaboration of meaning' (Douglas 2007a, p.91). Consumption is not simply affected by the social and cultural environment, but is an active player in creating and changing the social world it is a part of (Warde 2014). Food is not created or consumed in a vacuum, with cultural influences maintaining hierarchies of food 'value' and, in turn, each act of consumption reinforcing such norms: 'Man needs goods for communicating with others and for making sense of what is going on around him' (Douglas and Isherwood 1996, p.67). Thus, eating is always contextualised by culture, while culture is always contextualised by eating, where a 'proper meal' has a clear structure that must be followed (Douglas 1972). Such reasoning comes in a long line of sociologists describing the

individual as entwined with the outside cultural and social environment, such that a lack of understanding of societal influence inhibits a complete conception of individual behaviour (Mills and Etzioni 2000).

Throughout history and across cultures, dietary habits have changed along with the cultural role of different types of food. Sociologist Pierre Bourdieu (1996) describes the particular structures that create an understanding of what is socially tasteful as an individuals' 'habitus'. Behaviour, he argues, is modelled by the wealthy, who determine what is and should be consumed, while one's social position and education will contribute to one's broader habitus. This could include what Veblen (1899) refers to as 'conspicuous consumption', which is conducted to display wealth, income and prestige. By modelling consumption on the habits of the wealthy, class-based symbolic structures are created, whereby the habits of the elite determine what is and should be consumed (Bourdieu 1996). Cultural shifts in taste are, according to this reasoning, created and modelled by the wealthy before trickling down to the working class**.**

Class-based consumption can be found in research related to AFP consumption, with historian Ben Rogers (2004) describing how in the UK roast beef and roast dinners have been transformed over the last half-millennium from a food of the wealthy to the national dish of the common citizen and, now, a central component of British identity. The rejection of these highly-esteemed foods can therefore be viewed as the renunciation of important cultural norms (Fiddes 1991), such that the imparting of information as to why particular foods may be harmful may not be sufficient to reject embedded cultural norms or dietary links to individual identity.

While Bourdieu (1996) and Veblen (1899) have focused on the class-based social components of consumption, Douglas (2007a) instead highlights their social and communicative roles within society. She argues that dietary choices are tools for communicating not only individual preferences, but one's identity as formulated through social dietary constructs. Through place and time, consumption is enacted and subsequently imbued with symbolic codes and meaning (Coles and Crang 2011)**.** Thus, an understanding of eating practices is entirely context dependent, such

that the consumption of cow meat in the UK can be an important social occasion, a 'roast dinner', while at the same time a sacrilegious and highly controversial act throughout much of India.

Through culturally-defined symbolic constructs of what may be considered food or a meal, one source of animal flesh can be viewed as 'meat' (e.g. cow meat which may be classified as beef, hamburger or steak), while another (e.g. dog meat) can be a source of revulsion (Bekker, Tobi and Fischer 2017). Such codes are entirely dependent on cultural conceptions, with red meat products (i.e. the flesh of cows, pigs or sheep), in particular, not only being seen as the most highly esteemed, but also the most likely to be regarded as taboo (Twigg 1979; Twigg 1981). Julia Twigg (1979; 1981) describes foods as existing within a hierarchy of status and power, with red meat as preeminent through its possession of blood.

Nick Fiddes, drawing on Douglas' (2007a) work, also describes meat as a powerful cultural and social symbol, at once a source of 'prestigious and vital nutrition' and yet a 'dangerously immoral and potentially unhealthy' demonstration of humanity's 'control of the natural world' (1991, p.2). The cultural significance of meat is so powerful throughout many HICs that a 'meal' is often synonymous with 'meat', such that its absence requires a 'meat substitute' and the meal itself is reliant on and named by a central meat element (Heinz and Lee 1998; Fiddes 1991).

Fiddes' depiction of a veg*n meal or person as being defined by that which they lack (i.e. AFPs) builds on the work of Douglas and Isherwood (1996), who – in their broader theorising of social consumption – argue that an impoverished person is socially defined simultaneously by their envy of wealthier consumers and their absence of goods. As with a meatless meal, it is the absence that comes to embody the subject's identity, such that the meal is culturally understood to be lacking some core element. Meals are, after all, a regimented construct, with Twigg explaining that 'a conventional meal is highly structured and centres around a single high-status item' (1979, p.29). Red, followed by white (i.e. the flesh of chickens, turkeys or other foul) meat are deemed the most valuable centrepieces for a meal, though other AFPs (i.e. fish, eggs or cheese) can be deemed sufficient, though less valuable, central components. While omnivorously normative meals are

generally seen as highly structured, vegetarian meals are 'typically chopped up, mixed together, undifferentiated; it is destructed' (Twigg 1979, p.29).

At an individual level, a veg*n is thus described not by their consumption of plant-based foods, but by their abstention from meat or AFPs. This could even draw support for the idea that these dissident consumers are not only defined by those items absent from their palette, as AFP abstainers, but that it is assumed they define themselves by this absence and perhaps even maintain envy for those who still consume these highly-esteemed foods. In a culture such as that in the UK where meat is both highly-esteemed and linked to national identity (Rogers 2004), veg*n consumption and identities could be seen as disruptive of accepted notions of what it means to be British. As with any society, one component of British culture is its cuisine, which holds in highest esteem the Sunday roast, a leg of lamb with Easter dinner and a turkey with one's Christmas meal (Rogers 2004). To not consume these foods could, to some degree, mean that one is not a consumer (or participant) in British culture.

In addition to creating and enforcing the understanding and symbolism of specific food items, cultural and social conceptions of food products can even affect one's perception of taste. Douglas argues that the 'palate is trained, that taste and smell are subject to cultural control', such that whether food is enjoyable can, ultimately, depend upon socio-cultural factors (1978, p.59). Fiddes similarly argues that taste is developed 'whilst growing up within a culture which has its own general preferences' and as such is not largely dependent 'upon the nature of the foods themselves' (1991, p.31). Even meat substitutes can be perceived as tasting better after repeated exposure (Hoek *et al.* 2013). However, there remains an important, biological element to taste that must be considered, as exposure to high-energy, high-fat foods triggers a natural pre-disposition as consumers quickly learn to perceive them as tastier (Nestle *et al.* 1998). In addition, food preferences in later life are strongly influenced by repeated exposure to novel foods as a young child (Ventura and Woroby 2013; Nestle *et al.* 1998).

Critiques of the focus on the individual within a behaviour change framework have contributed to the formation of a newer branch of cultural theory, practice theories. While social

theories view society as the unit of measure and behaviour change theories focus on the individual, such theories instead focus on practice, 'a routinized type of behaviour which consists of several elements, interconnected to one another' (Reckwitz 2002, p.249). For instance, Twine examines the practice of snacking 'as a set of eating related practices that emerge out of the social organisation of everyday life' (2015, p.1271). Eating behaviour is therefore construed within a broader context, considering the 'bundles of other practices' that influence and are influenced by what, when and how one eats (Twine 2015, p.1273). Practice theory examines practice in terms of mental components (e.g. one's view of the world), bodily actions, things, language / discourse, structure / process and agent / individual (Reckwitz 2002).

While behaviour change generally focuses on influencing 'values and norms' to then impact behaviour, practice theory views 'a recursive relationship to practices rather than acting as external drivers to particular behaviours' (Twine 2017, pp.200–201). In the case of vegan transition, Twine (2017) describes practices as changing through the development of specific competencies (know-how, skills and knowledge), materials (novel foods, vegan nutrition guides and charts) and meanings (of a particular practice).

A second common critique of popular behaviour change theories is that such frameworks are based on a rational actor model, whereby consumers weigh all costs and benefits before making any purchasing decisions (Jackson 2006). In this type of framework, consumers are viewed as information sponges who will use all relevant knowledge to make perfectly rational decisions. However, as researchers have demonstrated, there is a large gap between behaviour and intention. For instance, consumers may place a high value on environmental protection, but continue to engage in environmentally destructive behaviours (Blake 1999). In addition, De Bakker and Dagevos (2012) demonstrate that consumers' desires to address environmental and animal welfare problems are not necessarily reflected in their dietary behaviours. It therefore cannot be assumed that those reporting intentions to change will, in fact, change, even if they may rationally want to or believe such a change would be beneficial. This 'value-action' gap (Blake 1999) is a significant

element in human behaviour and one that is unaccounted for in models exclusively examining intention and action, as with the TTM and TPB.

In the case of meat and AFP consumption, cognitive dissonance is an important force inhibiting rational decision making. Two theories have looked directly at this relationship. Firstly, the 'meat paradox' was initially theorised in 2010 by Loughnan, Haslam and Bastian. The 'paradox' refers to the reality that 'people simultaneously dislike hurting animals and like eating meat' (Loughnan, Haslam and Bastian 2010, p.156). This attachment to meat consumption, even when feeling concern for animals, can be particularly difficult to change (Dowsett *et al.* 2018). Secondly, Joy theorises that AFP consumption is defended by what she describes as 'carnism', the invisible 'belief system that underlies' the consumption of animals and animal products (2011, p.29).

The practice of eating animals and carnism itself are reinforced by three cognitive defence systems, 'The Cognitive Trio', whereby meat eating is supported as natural, normal and necessary. Belief in the Trio has been shown to accurately predict meat consumption (Monteiro *et al.* 2017). While some research has found intention to be a good indicator of red meat (Carfora, Caso and Conner 2017) and overall meat (Zur and Klöckner 2014) reduction, such models inherently assume a rational approach to decision making and do not account for the value-action gap reinforced through cognitive dissonance in the form of the meat paradox and carnism. However, it is also worth noting that both of these theories only discuss meat consumption and may therefore be less readily applicable to other types of animal foods.

While rational models of behaviour change would claim that exposure to information results in reflection and changed behaviour, this is only the first step. Behaviour change also requires an unmasking of hidden cultural and social norms, what Joy refers to as 'bear[ing] witness … to overcome [the] paradox' between belief and conduct (2011, p.144). However, one does not simply need to overcome cognitive dissonance, but to directly grapple with habituated 'ordinary consumption' that is based on routines, which, 'transformed into habituses, they are means of giving ourselves a feeling of normality' (Ilmonen 2001, p.13). The habit(us) of eating is formed in direct relation to social and cultural influences, through childhood exposure, societal pressures and

symbolic constructs. As routines are shaped in 'a long process, which progresses very smoothly and in almost unobserved way' (Ilmonen 2001, p.22) it can be particularly difficult to shift consumers from such routinized consumption toward 'reflexive consumption' (Halkier 2001).

A third critique of commonly-used behaviour change theories is that they place agency and blame entirely on the individual (e.g. Shove 2010). Akenji describes this as leading to 'consumer scapegoatism' that ignores 'the need for structural changes' (2013, p.13). Shove argues that research should focus not on individual choice but 'be explicit about the extent to which state and other actors configure the fabric and the texture of daily life' (2010, p.1281). A broader look at the food system itself, access to nutritious, sustainable food and changes to production practices are essential in addressing many of the issues within the modern unsustainable food system.

Transition theories have emerged from sustainability research and focus on the macro-level of sustainable transition by examining three levels of change: niches (sites for potential innovation), 'socio-technical regimes' and 'socio-technical landscapes' (El Bilali 2018). The most prominent transition theory in the area of agro-food sustainability is the multi-level perspective (MLP), which emphasises how these three areas influence one another, such that a successful societal transition requires their alignment (El Bilali 2018). In supporting the changes necessary for a sustainable future, it is essential to examine these multiple sites of transformation. However, this does not mean that research into the behaviour and attitudes of the individual consumer is not important or that campaigns targeting individual behaviour are irrelevant. Transition theories and the potential for consumer scapegoating, instead, reflect the need to understand the broader contexts within which individual behaviour occurs. They reflect the reality that change at an individual level is not entirely due to personal agency and is reliant on a variety of other social and technological factors.

Within a consumer reality where external factors may have a significant impact on purchasing behaviour, behaviour change interventions may be an opportunity for individual empowerment. What individuals consume is influenced not only by social and cultural norms, but also by governmental subsidies (Vinnari and Tapio 2012; Simon 2013), corporate advertising (Wymer 2010), store and menu layouts (Thornton *et al.* 2012) and a variety of other mechanisms.

As such, the supposed reality of consumer freedom of choice is, in fact, one in which choices are constrained and influenced by forces external to an individual's 'true' preferences. Campaigns, therefore, may be understood as a path to greater consumer freedom, by providing tools to change one's habits within the modern consumer society and increasing one's awareness of invisible dietary impacts and influences.

These three critiques of behaviour change theories are essential in creating a framework that understands the multiple contexts and sites of inquiry through which behaviour can be understood. Specifically, they reflect the need to understand and incorporate the social and cultural components of consumption, to move beyond a purely rational model and to not exclusively place the onus and agency for transition on the individual. The 'problem' of reduction can be understood differently through various worldviews and methodologies, including a variety of sites of inquiry, ranging from the micro to the meso to the macro.

Within this project, the focus remains firmly on the individual as the site of inquiry for understanding the process of personal transition but with a broader consideration and recognition of the context wherein such changes occur. In particular, the measure of individual behaviour within this framework is intentional and mirrors the current strategies employed by campaigners and, often, policy makers (see 2.3) (Shove 2010). While political, rather than individual, transition is likely to be a more impactful mechanism in achieving widespread dietary shifts, this is unlikely to occur in the current political climate (Wellesley, Happer and Froggatt 2015).

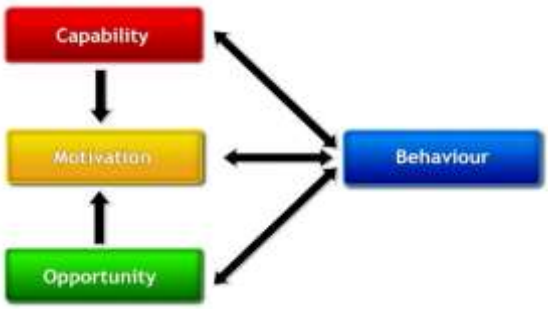
It is necessary that an inclusive and appropriately comprehensive framework is used in this research project. However, in using a multi-disciplinary approach, it is essential to ensure (a) appropriateness and (b) a consistent epidemiological underpinning (Wilson and Chatterton 2011; Shove 2011). When used appropriately, incorporating a variety of perspectives 'can offer a complementary, and potentially more complete, view of the object of study' (Whitmarsh, O'Neill and Lorenzoni 2011, p.259).

2.1.1 The Behaviour Change Wheel

Any model of behaviour change needs to consider the wide variety of factors enabling, hindering and prompting individual conduct and, in particular, where many frameworks have fallen short historically is in their failure to incorporate social and institutional influences. When examining existing behaviour change research, Michie *et al.* (2014) found that current models insufficiently addressed the complexity of behaviour change, generally focusing on only one element, either social, cultural or individual. They found that just four frameworks made up nearly two-thirds of the literature they identified and, as previously stated, 46% utilised the TTM or TPB models. Michie and her colleagues (2011; 2015; 2013) used their in-depth analysis of current research to create a categorisation of sixteen types of behaviour change techniques (BCTs) (see Appendix 5), each with multiple subcategories, and what they describe as the first comprehensive behaviour change framework, the Behaviour Change Wheel (BCW) (2014).

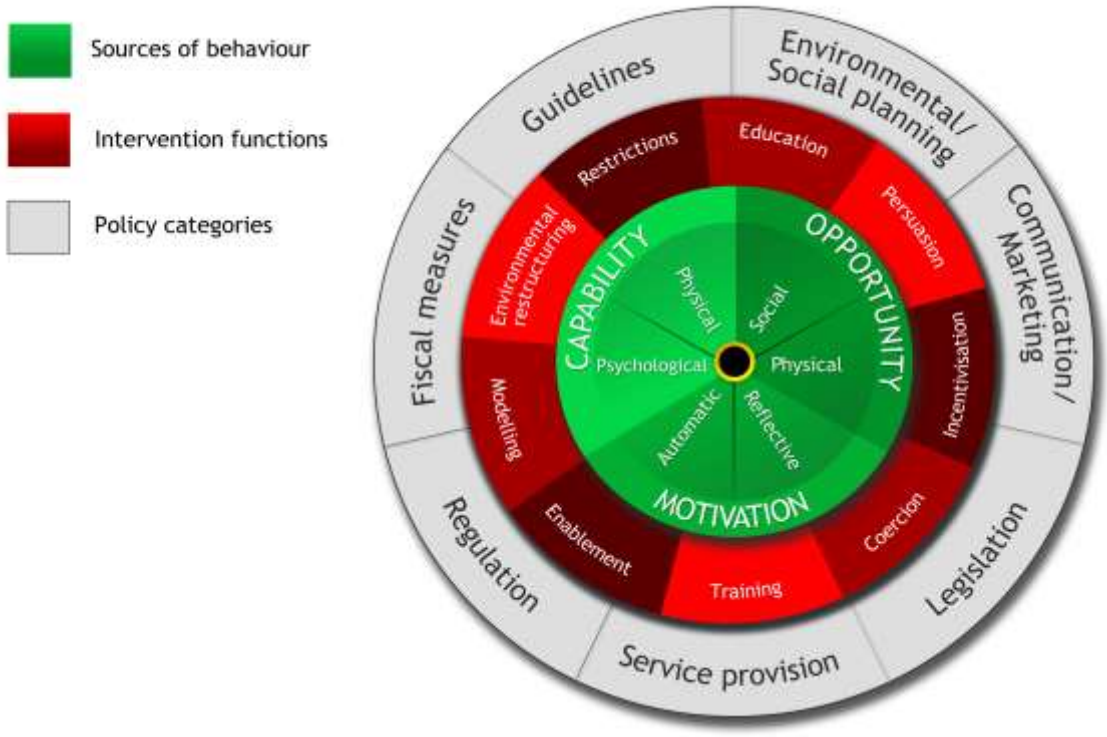
The BCW is, at its core, reliant on Lou Atkins and Susan Michie's (2014) COM-B (Capability, Opportunity, Motivation and Behaviour) system (see Figure 2.1, below). Capability pertains to an individual's ability to change their behaviour and includes both physical (i.e. physical skill, stamina or strength) and psychological (i.e. ability and skills to engage in mental processes or knowledge) elements (Michie, Atkins and West 2014, p.59). Opportunity encompasses the external environment and includes physical (i.e. what is allowed for or facilitied in the external world, such as time or resources) and social (i.e. cultural norms or social cues) components. Motivation can be both reflective (i.e. personal beliefs about what is good or bad) and automatic (e.g. wants, needs or desires). As the COM-B model shows, capability and opportunity can influence individual motivation, while all three areas can reinforce and be reinforced by one's behaviour. The model has been tested extensively in a variety of peer-reviewed articles, including research into dietary behaviour change (Atkins and Michie

Figure 2.1 COM-B Model (Atkins & Michie, 2013)



2013). As Table 2.1 shows in more detail, each of the COM-B components can be directly linked to elements related to meat reduction.

Figure 2.2 The Behaviour Change Wheel



The Behaviour Change Wheel is a comprehensive model that was designed specifically for organisations, policy makers and researchers interested in promoting any kind of behaviour change. In describing the model in their book *The Behaviour Change Wheel: A Guide to Designing Interventions* (Michie, Atkins and West 2014), its creators provide a step-by-step guide for using the model to encourage and achieve a specific type of behaviour change. Furthermore, as can be seen in Figure 2.2 (below), the BCW integrates the COM-B model with two additional components in the middle and outer sections of the wheel (Robert *et al.* 2011; Michie, Atkins and West 2014) The second layer of the Wheel – intervention functions – describes types of strategies that can be used to address each COM-B component (see Appendices 3 and 5). This is particularly useful for campaign designers, who can use it to (a) identify specific components of target behaviours and (b) match this/these to particular types of interventions. Thus, this model is useful in understanding and researching the strategies, target audiences and content of campaigns. The final, outer layer of the Wheel also addresses policy categories, enabling direct links between policy, campaigns and behavioural components (see Appendix 6).

In summation, the research approach adopted within this project is multi-disciplinary and draws on a wealth of knowledge to formulate a more holistic understanding of individual dietary changes. By utilising the BCW framework, specific components of behaviour can be easily categorised. This framework addresses common critiques of the focus on desires and attitudes as the sole source of behaviour (e.g. Shove 2010) through the integration of theoretical understandings of social consumption within the broader arguments of sustainable and ethical consumption and of social and cultural contexts.

Table 2.1 COM-B component definitions and examples

COM-B component	***Definition***	***Example***
Physical capability	Physical skill, strength or stamina	*Having the skill to chop vegetables*
Psychological capability	Knowledge or psychological skills, strength or stamina to engage in the necessary mental processes	*Knowledge of veg*n recipes or foods*
Physical opportunity	Opportunity afforded by the environment involving time, resources, locations, cues or physical 'affordance'	*Being able to find veg*n AFP alternatives in local stores*
Social opportunity	Opportunity afforded by interpersonal influences, social cues and cultural norms that influence the way that we think about things, e.g. the words and concepts that make up our own language	*Being able to tell friends and family that one identifies as veg*n*
Reflective motivation	Reflective processes involving plans (self-conscious intentions) and evaluations (beliefs about what is good and bad)	*Intending to stop eating meat to reduce animal suffering*
Automatic motivation	Automatic processes involving emotional reactions, desires (wants and needs), impulses, inhibitions, drive states and reflex responses	*Craving food with dairy cheese*

Adapted from Michie et al. (2014, p. 63)

As the goal of campaigns is to alter behaviour, it is appropriate to understand their participants through a focus on the individual and their actions and beliefs. Nonetheless, the BCW incorporates and recognises the complexity of behavioural influence, while directly connecting it to policy and interventions. This also creates a natural bridge to incorporate other theories that may more broadly explain the practices connected to dietary change (Reckwitz 2002), which can be linked to numerous BCW components. For instance, Twine (2018)'s identification of the importance

of specific competencies (e.g. cooking skills) in vegan transition reflects the BCW's behavioural source of psychological capabilities (Michie, Atkins and West 2014). However, such work also pushes the framework by emphasising the practices underlying individual transition.

Transition theories also serve to integrate the social and behavioural through an understanding of the broader systems underlying societal change (e.g. material and technical components of industry) (El Bilali 2018), recognising how individual behaviour is only one component in broader transition. For instance, the growth in veg*n food substitutes and governmental barriers, such as the disproportionate support of AFP production through subsidies (Simon 2013; Peat 2016), can impact individual perceptions around availability and access.

For the purposes of this research project, the inner (COM-B) component has been used to categorise potential barriers to reduction (see Chapter 3). For instance, as seen in Table 2.1 psychological capabilities can refer to the ability to find veg*n alternatives in local stores, such as 'mock' meats or non-dairy cheese. They can also refer to the ability to find veg*n recipes or to prepare meat-free meals. Reflective motivation refers to those factors which may influence individuals to start and continue reducing, such as animal protection, health or the environment. Each of these elements is further understood through the incorporation of relevant theories. For instance, practice theories can help inform an understanding of the adoption of vegan cooking habits, while an understanding of social consumption can contextualise this within cultural meal-time norms. In this way, the framework is both comprehensive and strategic in its ability to evaluate specific components of dietary change within broader social contexts.

2.2 Meat reducers and veg*n transitioners

Reduction is not a universal phenomenon; it is important to identify reducer trends to recognise potential and current reducers and better support the reduction process. This knowledge can enable policymakers and reduction promoters to create targeted interventions and predict future consumer trends. Certain segments of the population seem to be more likely to reduce,

though a lack of research is likely to be a contributing factor in uncertainties about reducer and reduction tendencies.

Reduction appears to be on the rise in the UK and other high-income countries (HICs). A 2014 survey conducted by the Vegetarian Society (n=2,878) found that 44% of Britons were either reducing or intending to reduce their consumption of meat (Lee and Simpson 2016). Research with a Finnish sample in 2010 (n=1,623) also found that 39% were in the process of reducing their meat consumption, while a further 13% already had (Latvala *et al.* 2012). A report by the Carbon Trust and the meat alternative company Quorn was, however, less optimistic, estimating that 75% of the UK population consumes meat on a daily basis (Cumberledge, Kazer and Plotnek 2015). The majority of identified reducers are not abstainers (those who fully eliminate certain animal food products from their diets). Cumberledge *et al*. (2015) found that two percent of Britons were vegetarian or vegan, while Lee and Simpson (2016) found the figure to be closer to three percent (in addition to another two percent who are pescatarian). A survey by researchers at Ipsos MORI that included over 10,000 respondents estimated that 2% of the UK population were vegetarian and a further 1% were vegan (The Vegan Society 2016).

As consumers have become more interested in purchasing veg*n foods over the past decade, the number of available veg*n food options in the UK has risen drastically, with vegan food sales rising by 1,500% in 2016 and vegetarian take-out by 987% (Just Eat 2018; Peat 2016). Research commissioned by the Vegan Society (2017) found that 51% of those surveyed (n=2,000) welcomed this increase and 56% had 'adopted vegan buying behaviours'. Meat alternative sales are also projected to increase in the UK by a further 25% between 2016 and 2030, with milk alternatives expected to rise by 43% (Cuthbert 2017).

The rapid growth of these reduction habits within the UK has largely been contained within certain sociodemographic groups. In particular, women and those with high educational attainment seem to be the most likely to plan to reduce their consumption (Lee and Simpson 2016; Lea, Crawford and Worlsey 2006) and be aware of issues regarding sustainability (Mohr and Schlich

2016). Though outside of the scope of this project, researchers have explored, in particular, links between masculinity and meat consumption, with cultural associations linking veg*n diets to femininity and meat to strength and maleness (Adams 1990; Ruby and Heine 2011; Calvert 2014; Schösler *et al.* 2015; Sobal 2005). Adams (1990) describes how meat consumption has historically been seen as the most esteemed food source and, as such, primarily reserved for men and the wealthy, while drawing parallels between the exploitation of animals used for human consumption and that of women. Research by Thomas (2016) found that the act of choosing to become vegan, in particular, was related to men being viewed as less masculine.

Age also appears to be an important factor relating to animal food product (AFP) consumption, though not all researchers agree on the nature of the relationship. For instance, while Lee and Simpson (2016) and a meta-review by Corrin and Papadopoulos (2017) found that older individuals are more likely to reduce, a meta-review by Stoll-Kleemann and Schmidt (2016) argued that research generally finds young people to be most open to reduction. Ipsos MORI's UK-based survey also found that 42% of all vegans were 15 to 34-years-old, while just 14% were over 65 (The Vegan Society 2016).

Researchers disagree not only about who may be most likely to reduce but also about the nature of reduction, with some arguing for promoting any level of reduction and others a singular goal (i.e. veganism). In a series of interviews with British vegetarians (n=76) in the late 1980s Beardsworth and Keil identified two types of veg*n transitions, the first of which occurs gradually, whereby 'the individual's ideas evolve, and vague dislikes and misgivings' form, often drawing on feelings formed in childhood (1992, p.266). The second type of transition is 'much more abrupt' and 'triggered by a "conversion experience"' (Beardsworth and Keil 1992, p.267). After interviewing nineteen self-identified vegetarians in the US, Jabs, Devine and Sobal (1998) described the former, gradual approach as more common. They depicted abrupt transitions as rarer and occurring 'upon making an animal connection with meat when they were children or young adults' (Jabs, Sobal and Devine 1999, p.199).

Many self-defined veg*ns engaging in a more gradual approach to dietary change may imperfectly embrace the abstention of AFPs during their initial (or ongoing) dietary transitions. For instance, vegetarians may continue to consume some amount of meat (Pfeiler and Egloff 2018), while fish consumption may commonly be considered a component of a vegetarian diet (Mulle *et al.* 2017; Beardsworth and Keil 1992). Beardsworth and Keil (1992) identified six types of vegetarians, ranging from the least to most restrictive: meat consumed, fish (but not meat) consumed, eggs (but not meat or fish) consumed, dairy (but not meat, fish or eggs) consumed, rennet-free cheese[1] (but not other AFPs) consumed and a fully vegan diet. This ordering suggests a hierarchy of AFP food elimination, beginning with meat and ending with rennet-free cheese.

Those discussing meat reduction have generally focused on eating less red meat (e.g. Klöckner and Ofstad 2017; Santos and Booth 1996; Bogueva, Marinova and Raphaely 2017). Meanwhile, fish and seafood have commonly been neglected from discussions of sustainable diets (Farmery *et al.* 2016). Some researchers (e.g. Laestadius *et al.* 2014a) have expressed concerns that this particular emphasis could lead to the use of white meat or fish as red meat replacements.

A gradual approach to dietary change has been supported by researchers finding that people may be more likely to reduce their meat consumption than to become abstainers (Corrin and Papadopoulos 2017). However, such findings do not necessarily mean that the promotion of a meat reduction goal is more effective, with Taft arguing for the use of 'specific and difficult goals' (2016, p.41) (i.e. veganism) to achieve greater behavioural changes. This could mean that, for instance, meat reducers may reduce more if engaging in a campaign with a vegan message, even if they are not currently pursuing a vegan goal. Though research has not yet been conducted into this area, it could also be the case that perceptions can gradually change once an individual begins engaging with reduction, such that they then become more open to becoming veg*n. For instance, Chuck *et*

[1] Rennet is a product used for some cheese production and is commonly derived from the stomachs of newly-born calves. Some vegetarians may continue to consume cheese but be unwilling to consume rennet.

al. (2016) found that the adoption of political dietary identities – including veganism and vegetarianism – generally occurred gradually through a series of encounters.

Much is still not known about the nature of reducers and reduction, with consensus generally only achieved in the findings that reduction is becoming increasingly prominent in the UK and that the majority of these reducers are women. Debates focus on the types of messages to promote (e.g. reduction or veganism) to achieve maximum reductions but research has yet to measure the impacts of such messages.

2.3 Reduction and veg*n campaigns

Reduction and veg*n campaigns are a key component in the creation of reducers and the promotion of reduction. Yet, little is known about the nature of these campaigns and, in particular, about their impact on dietary habits. Research has, however, identified conflicts within the animal protection movement around its relationship with and treatment of human oppression. Meanwhile, environmental organisations may be unlikely to address and promote reduction.

To date, little research has been done looking specifically at campaigns promoting meat and/or AFP reduction. Research from the US, Canada and Sweden found few campaigns aimed at reducing meat consumption and, in particular, the need for an increase in environmental NGOs promoting the issue (Laestadius *et al.* 2014b; Laestadius *et al.* 2013). In addition, researchers have found that environmental organisations tend to promote less drastic AFP reductions than do animal protection (animal welfare and/or rights) groups (Bristow and Fitzgerald 2011), with many organisations stating that promoting meat reduction was not a core component of their work (Laestadius *et al.* 2014a). Freeman (2010) concluded her investigation into US environmental organisations' attention to AFP reduction with the recommendation that relevant non-profit organisations should more explicitly critique the animal agriculture industry and promote dietary changes toward primarily plant-based, organic foods.

Ongoing debates between researchers also question the use of a singular or varied approach in changing dietary habits. Schösler, de Boer and Boersema (2012) argue for the use of a variety of targetting strategies in order for campaigns to reach specific populations. Joy describes campaigns as needing to '[c]ompel people to witness the issue' of animal suffering and exploitation by 'try[ing] to understand their *personal paradigm*', which is 'formed by the synthesis of one's values, assumptions and life experiences' (2008, pp.68, 114 and 115). Taft (2016) discusses the need to understand behaviour change as occurring through stages, using the Transtheoretical Model (Prochaska, Diclemente and Norcross 1992) as an example. Focusing on psychological and behaviour change research, Taft is critical of campaigns that do not include a clearly-defined goal – such as those promoting one meatless day a week – and argues that organisations wanting to support animals should endorse a long-term goal of veganism. Conversely, Joy suggests: 'Don't present all-or-nothing options. For instance, people shouldn't feel they have to go vegan or even vegetarian to make a difference' (2008, p.63).

In her research into successful non-profit organisations and campaigns, Han (2012; 2014; 2016) identified the social component and, in particular, support for the formation of 'value-based' relationships, as critical in creating and maintaining motivation. She explains that campaigns are most successful at fostering support when they: (1) demonstrate that campaigns will address an individual's own goals, (2) refer to an individual's own actions and (3) give participants the space for their voices to be heard and to reflect on their experiences (Han 2012). Thus, participation is not simply based on one's values but is an expression of one's social identities and needs to be seen as providing 'relational value' by 'creat[ing] a larger context within which people feel like the social relationships they desire (with each other and with the organisation) are more likely to emerge' (Han 2016, p.298).

The need for social value and feelings of inclusion and being heard may be at odds with the way human oppression has been addressed by some organisations within the animal protection movement. Researchers have found that individuals from minority groups may feel ostracised from campaigns due to messaging and the perpetuation of normative conceptions of veg*nism and

veg*n individuals (Wrenn 2016; Harper 2010; Ko and Ko 2017; Singer 2016; Broad 2013). For instance, in her evaluation of the Meatless Mondays campaign, Singer found that it promoted stereotypical gendered roles while attempting to address men's potential 'crisis of masculinity' that may be triggered through discussions of meat reduction (2016, p.13).

While these two threads exist within the literature – discussions of potential messaging styles and critiques of non-inclusive messaging – little research has been conducted on reduction campaigns and answers to questions about the type of strategy, goals and campaigns that may be most effective are still not known. In addition, only two studies have been conducted into the effectiveness of these campaigns. The first study, carried out on behalf of the US-based non-governmental organisation (NGO) Mercy for Animals, used a control group to evaluate the effect of watching a film about cruelty toward farm animals on the dietary habits of women aged 13 to 24 (n=1,433) (Edge Research and Mercy for Animals 2015). In a follow up survey carried out two to four months after watching the video, the experimental group was somewhat more likely to report a desire to want to reduce their meat consumption and identify as vegetarian, but no significant variations were found in reported consumption habits. The researchers reported that a larger sample may have been necessary to identify variations in the small effect sizes measured. The varied follow-up time or the specific video used (which may not in itself have been particularly effective) may have also contributed to the lack of statistically significant findings.

The second study evaluating the effectiveness of reduction interventions, conducted by the non-profit research organisation Faunalytics, analysed the impact watching an animal welfare video had on pork consumption and found statistically significant increases in those interested in reducing their consumption one month later and in reported pork reductions (2017). However, no follow-up was carried out after this point to determine if initial reductions persisted. The discrepancies between the findings of these two studies and the lack of additional or peer-reviewed research for further comparison suggests the significant need for additional research into the impact of reduction campaigns.

2.4 Motivators

An increasing volume of research has been conducted in recent years exploring sources of reflective motivation for the increase in flexitarians, vegetarians and vegans in HICs. An early model of motivating factors for veg*ns investigated only two possible sources, with more recent research including a wider variety of components. Specifically, in their interviews with US vegetarians (n=19), Jabs *et al.* (1998) bifurcated the group into 'health vegetarians' and 'ethical vegetarians'. According to them, those motivated by animal protection (i.e. ethical vegetarians) did not view health as an important motivator, while health vegetarians were likely to become further motivated by animal protection over time.

More recent research continues to support the primary roles of animal and health-related motivators, even when including a wide variety of additional factors, as seen in four of the largest studies of meat reducers and veg*ns conducted to date (see Table 2.2, p. 39). Saving money also emerged as a primary motivator in the two studies focused specifically on meat reduction, with de Boer, Schösler and Aiking (2017) also finding this to be a larger motivator for those who consume meat than for those who do not. Animal-related motivators appear to be somewhat more significant than health-related for veg*ns, with Janssen *et al.* (2016)'s study finding nearly ninety percent of vegans reported animal motivations and just under seventy percent health motives. Stoll-Kleemann and Schmidt (2016), who conducted the largest meta-review of research on meat reduction, also found that animal-related motivators were more prominent for veg*ns than semi-vegetarians.

Additional research has also linked meat consumption to animal protection motivators. A Dutch study that used a small convenience sample (n=299) found that animal motivators were more prominent amongst veg*ns than meat reducers (De Backer *et al.* 2014). Tobler *et al.* (2011)'s Swiss study had a much larger sample (n=6,189) and also found that those motivated by animal suffering were more likely to be willing to reduce their meat consumption but that this did not necessarily relate to actual dietary habits.

Table 2.2 Reported motivations for AFP reduction in previous research

Goal:	Meat Reduction	Meat Reduction	Vegan	Reduction	Meat Reduction
1.	Animal welfare (39%)	Health (58%)	Animals (89.7%)	Ethical reasons (59.3%)	Health (58%)
2.	Saving money (35%)	Saving money (21%)	Health (69.3%)	Health (19.6%)	Saving money (21%)
3.	Food quality and safety (34%)	Animal welfare (20%)	Environment (46.8%)	Environment (10.6%)	Animal welfare (20%)
4.	Health (33%)	Food safety (19%)	Social justice (9.8%)	Weight control (4.3%)	Food safety (19%)
5.	Reduce carbon footprint (31%)	Environment (11%) & Other (11%)	Capitalism, food industry (5.4%)	Religion (3.5%)	
6.	Other environment (25%)	Religious or spiritual (4%)	Other (3.0%)	Other (3.0%)	
7.	Global food security (17%)				
Location	UK	UK	Germany	US	UK
Year	2013	2014	2014	Not reported	2014
n	618	1,271	329	199	1,320
Source	(Eating Better 2013)	(Park, Bryson and Curtice 2014)	(Janssen *et al.* 2016)	(Timko, Hormes and Chubski 2012)	(Lee and Simpson 2016)

Not only are animal motivators likely to be more prominent for veg*ns, it appears that health motivators are more popular among meat eaters, including meat reducers. Studies looking at reduction in general or exclusively at meat reduction tend to be more likely to find health to be the primary motivator (e.g. Latvala *et al.* 2012; Izmirli and Phillips 2011; Macdiarmid, Douglas and Campbell 2016; Lee and Simpson 2016). An international analysis across twelve countries (n=3,433) also found students were more likely to be veg*n if they were concerned about animal rights and that veg*ns were less motivated by health or personal factors than were meat reducers (Izmirli and Phillips 2011). A Flemish study (n=1,556) found that each unit increase in health-related motivators on a seven-point Likert scale decreased the probability of following a veg*n diet by 39%, while a greater commitment to animal rights concerns increased propensity to be veg*n by 105.3% (De Backer *et al.* 2014). Health motivators have also been found to be somewhat more popular amongst men (who are more likely to be meat eaters— Lea, Crawford and Worlsey 2006), while women may be more likely to be motivated by animal welfare (Lee and Simpson 2016).

Similarly, Timko *et al*. (2012)'s German study found 65.7% of vegans (n=35) and 67.5% of vegetarians (n=111) surveyed to indicate ethical motivators, while 14.3% and 17.3%, respectively, included health-related motives. While semi-vegetarians (n=54) were also most likely to report ethical motivators (38.9%), they were nearly fifty percent less likely than veg*ns to do so and nearly 100% more likely to indicate health-related motivators. When looking at reasons for continuing their reduction, semi-vegetarians were more likely to indicate health (42.6%) than ethical (31.5%) motives, while veg*ns were even more likely to indicate ethical motives (69.7%) and less likely to indicate health (15.2%).

Such findings could indicate that those motivated by what Verain *et al.* (2016) dub 'pro-self factors' (e.g. price, taste or health) are more likely to follow or be willing to follow a semi-vegetarian diet, while 'pro-social' consumers who are motivated by external factors (e.g. sustainability or animal protection) may be more likely to follow a veg*n diet. Additional research has also made important connections between meat and AFP consumption and perceptions of animal cognition and suffering. For instance, semi-vegetarians have been found to see humans as less similar to other animals than do veg*ns (Rothgerber 2014).

Level of motivation can also be affected by overall awareness and one's propensity to engage with such information. Dagevos and Voordouw (2013) categorise individuals' level of and relationship with motivating factors to distinguish between three types of flexitarians. Unconscious flexitarians have lower levels of motivation but have positive views of veg*n meals and do not associate meat eating with being higher status. Conscious flexitarians are those who are highest in motivation and are making a conscious effort to reduce their consumption due to specific motivating factors, while also having positive associations with veg*n meals and not seeing meat eating as higher status. Meanwhile, extravert flexitarians reduce their meat consumption despite believing that meat eating elevates social status. A fourth group, 'disengaged meat-eaters' may also reduce their consumption through substituting meat with other alternatives but are only moderately motivated to do so and are generally detached, unmotivated consumers.

Also significant are findings that the environment does not appear to be a key motivator, which may be partially due to a general lack of awareness. This could, at least in part, be due to the invisibility of environmental impacts, an argument that has been made about their weakness in motivating dietary decisions (Thaler and Sunstein 2009). However, as awareness appears to be increasing (Siegrist, Visschers and Hartmann 2015) and awareness across all areas of AFP impacts may be linked to increased reduction (Lee and Simpson 2016), this could become a more prominent motivating factor in the future.

One particular problem with existing literature is that many of the studies into flexitarian, vegetarian and vegan motivations have extremely small samples. For instance, Timko *et al.* described their study of 486 individuals as 'the largest number of vegans and true vegetarians studied to date' (2012, p.985), while less than one-half (n=199) were included in discussions of initial motivation. Another problem is a lack of consistency in metrics. For instance, while some studies allow the selection of one or a certain number of motivators, other studies measure motivator impact using a Likert scale. In addition, not all potential motivators are included in every study, such that the absence of a certain motivator in a data set (e.g. saving money) may be simply due to its non-inclusion within provided response options. Furthermore, some reported secondary motivators may have not affected an individual's ultimate decision to reduce or may have played a very minor role when compared to a primary motivator. Resultantly, even though the motivators are ranked by prevalence, the results may be deceiving and direct comparisons between surveys may not be accurate.

Inconsistencies in approach and findings of previous research suggests the need for larger samples and consistent language (e.g. ethics, animal welfare or animal protection). Nonetheless, as most people in the world's highest-consuming regions appear to be unaware of AFP's impacts (Dibb 2013; de Boer, de Witt and Aiking 2016; Dibb and Fitzpatrick 2014; Tobler, Visschers and Siegrist 2011; Lee and Simpson 2016) and policy continues to support their consumption through high subsidies and unaddressed externalities, increasing public consciousness around the variety of

potential reduction motivators is likely to be an essential component of achieving a more sustainable future.

2.5 Barriers

Dietary patterns are complex and often rooted in habits formed over many years (Warde 2014; Verplanken and Wood 2006), such that motivating factors may, in themselves, be insufficient to promote widespread dietary change, as a rational behaviour change model would suggest (Tobler, Visschers and Siegrist 2011). Subconscious influences, such as those encompassed by an individual's 'habitus' (Bourdieu 1996), can be particularly influential on individual dietary behaviours due to their unconscious, invisible nature, contributing to the 'value-action' gap (Blake 1999).

A wide variety of barriers to AFP reduction and sustainable diets in general have been identified (see Table 2.3, below). These barriers have been grouped and discussed using a variety of terminologies, such as classifying them as internal (individual) or external (societal) (Dibb 2013). For the purposes of this research project they have been classified using the COM-B categories of the Behaviour Change Wheel (see 2.1).

The first barrier to be overcome is what has been deemed the 'awareness gap', with research finding that many consumers do not know the impacts of AFP consumption on the environment, climate change and global poverty (Bailey, Froggatt and Wellesley 2014). Research has shown that consumers throughout HICs usually significantly underestimate the impacts of meat consumption on the environment, in general (Lea, Worsley and Crawford 2005; Tobler, Visschers and Siegrist 2011) and on climate change, in particular (Bostrom *et al.* 2012; Skamp, Boyes and Stanisstreet 2013; Truelove *et al.* 2014; Vanhonacker *et al.* 2013). In Scotland, consumers were found to have very little prior knowledge about the relationship between eating meat and climate change and most did not believe their dietary habits had any impact on the climate (Macdiarmid, Douglas and Campbell 2016). When consumers in the Netherlands and the US compared a variety

of energy- and food-related strategies for mitigating climate change, very few identified reduced meat consumption as particularly effective (though it was at least seven times more effective than the other identified strategies) (de Boer, de Witt and Aiking 2016). Similar results have also been found in Finland (Pohjolainen *et al.* 2016).

Environmental motivators may be hindered by what Gardiner describes as 'the perfect moral storm', whereby the 'dispersion of causes and effects' and the 'fragmentation of agency' enable an abstraction of dietary consequences and a lack of personal accountability (2011, p.24). Specifically, people do not generally witness the impacts of their behaviour on the environment, with such effects occurring over generations and across wide areas, often far from those living in HICs who have the largest environmental footprints. Consumers may be aware, for instance, that meat consumption has negative impacts on the environment and climate change but not fully understand what this means and, in particular, the high levels of abstraction and physical and social distancing can inhibit feelings of responsibility or immediacy. While smog created by car pollution may enable greater visibility and, thus, awareness and understanding of the environmental impacts of transportation, the impacts of AFP consumption, which produce more greenhouse gas emissions and likely cause much greater environmental destruction than are less easily visible transportation (Gerber *et al.* 2013; International Panel on Climate Change 2014).

In addition, as discussed in 2.1, forces creating cognitive dissonance can impede consumers' abilities to connect the meat as flesh to the meat as animal (Bastian and Loughnan 2017). Foods are further abstracted from their animal origins through their attributes and the invisibility of the consequences of their consumption (Baker, Thompson and Palmer-Barnes 2002). The connection of meat with its animal origins has been found to be related to the adoption of a veg*n diet (Kenyon and Barker 1998). Such disconnects can, however, be heightened as one moves further down the food power hierarchy and away from more animal-like components (i.e. blood and tendons) through white meat, fish, dairy and eggs (Twigg 1979; Twigg 1981). People also tend to care more about animals that are more biologically similar to humans or are seen as cute or 'likeable' (Zickfeld, Kunst and Hohle 2018; Batt 2009).

Table 2.3 Overview of potential reduction barriers, organised by the Behaviour Change Wheel

BCW Category	Barrier	Description
Reflective Motivation	Awareness	° Lack of knowledge about impacts of AFP production ° Lack of knowledge about potential benefits of reduction
Automatic Motivation	Taste	° Thinking of oneself as a 'meat lover' (Warde 2000) ° Conceptions of vegetarian foods as boring ° Food texture preferences ° Taste of specific AFPs as 'without parallel' (Wellesley, Happer and Froggatt 2015)
	Habits	° Eating behaviours ingrained, acquired over many years (Warde 2014; Verplanken and Wood 2006) ° 'Status quo bias' (i.e. inertia) (Thaler and Sunstein 2009) ° 'Routinised' habits taking precedence over 'rationalised' choices (Ilmonen 2001)
	Identity	° Negative associations with vegetarian or vegan identities ° Eating habits as a fundamental component of one's identity ° Identity of self as a meat eater
Psychological Capabilities	Health perceptions	° Concerns about health risks (e.g. protein or iron deficiencies) ° Beliefs that AFP consumption is necessary
	Knowledge	° Lack of awareness of low-meat, vegetarian or vegan recipes ° Lack of awareness of what are and where to find low-meat, vegetarian or vegan foods
Physical Opportunities	Availability & Convenience	° Availability of veg*n options in restaurants or stores ° Cost of veg*n alternatives and options ° Modern culture prioritising dietary convenience
	Time	° Time spent finding, purchasing and preparing food
	Cost	° Financial factors influencing the overall cost of food ° Perceptions of 'value' of particular food items
Social Opportunities	Social	° Norms, pressure and perceptions of friends and family ° Exposure to other reducers
	Culture and Tradition	° Framing of what is or is not acceptable to eat ° Symbolism of foods (i.e. meat as highly-esteemed, high-status or masculine) ° Desire to be 'normal' ° A meal as 'meat and two veg' (Warde 2000)

Not all consumers are aware of motivating factors and some may even actively avoid such information. In their study, Onwezen and van der Weele (2016) identified consumers who are 'strategically indifferent' and may be actively avoiding information related to the impacts of AFP consumption. They explain: 'these consumers ignore the issue because they do not care. They do not feel responsible, do not aim to learn about the issue, and do not experience high levels of cognitive dissonance' (Onwezen and van der Weele 2016, p.95). While some consumers may be

'coping' (i.e. those who have changed their behaviours to address negative emotions and cognitive dissonance) others may be 'indifferent' (i.e. experience low negative emotions and believe others are responsible) or 'struggling' (i.e. feel responsible and be unwilling to ignore information, but have yet to change their behaviour to alleviate cognitive dissonance).

Graça, Calheiros and Oliveira (2016; 2014) also found consumers to morally disengage from information related to animal suffering and AFP consumption in order to avoid feelings of guilt or shame, while justifying their continued meat consumption. They explain:

> The process of moral self-regulation can be selectively deactivated in order to reduce dissonance, in light of the consideration of the damage associated with one's conduct. This allows engaging in self-serving detrimental behaviors without incurring self-evaluative emotional reactions, such as guilt (Graça, Calheiros and Oliveira 2016, p.353).

As such, they describe meat eating as 'a harmful but cherished behavior (Graça, Calheiros and Oliveira 2016, p.355).

While reflective motivation is generally the focus of awareness-raising behaviour change campaigns (Ockwell, Whitmarsh and O'Neill 2009), motivation also contains an unconscious element – automatic motivation, which includes those subliminal processes that can be influential in dietary decision making. Components of automatic motivation include taste, habits and identity. Taste, in particular, is often described as the primary factor in dietary choices and one of the main barriers in people's ability to reduce their AFP consumption (Nestle *et al.* 1998; Wellesley, Happer and Froggatt 2015; Lea, Crawford and Worlsey 2006). This emerges as an important theme throughout the literature, including a 2013 UK-based survey conducted by the non-profit organisation Eating Better that asked participants if they would be willing to pay more for food based on a variety of attributes (Dibb and Fitzpatrick 2014). Of all the categories, including food that is better for the environment, healthier or produced to higher welfare standards, participants were most willing (nearly two-thirds of respondents) to pay more for tastier food.

Taste may be a more prominent factor for semi- than full vegetarians (Rothgerber 2014), with veg*ns more likely to report meat aversions or that taste is a motivating factor for not consuming meat or AFPs . A study of young British women (n=15, age $\bar{x}$=17.2) found that within this

group most vegetarians did not like the taste of meat, describing it as 'blood' and 'flesh' (Kenyon and Barker 1998). Some veg*ns may therefore have an aversion toward meat from a young age, particularly for red meat that can be experienced as more 'bloody'. Those with such an aversion have been found to remain vegetarian longer than those who do not (de Bakker and Dagevos 2012).

The formation of taste preferences is closely linked to habits formed during childhood and reinforced throughout one's life. Attempts to promote healthy eating can be hindered by children learning to associate pleasure with food and meals through social, sensory and psychological processes (Marty *et al.* 2018). In addition, exposure to particular food textures can increase children's willingness to consume foods with similar attributes (Nederkoorn *et al.* 2018). Thus, what is edible, enjoyable and desired as an adult can derive from experiences with food as a child. Habits are reinforced over a person's entire lifetime, creating automatic processes that, in the case of consumption, are reinforced in each eating experience, often three times a day (or more) (Zur and Klöckner 2014; Nestle *et al.* 1998).

The formation of new habits (a component of automatic motivation) is key in promoting APF reduction (and dietary change in general) (Dibb 2013; Nestle *et al.* 1998; Zur and Klöckner 2014; Schösler, de Boer and Boersema 2014). Southerton (2013)'s work into conceptualising the term 'habit' is particularly important in understanding established dietary routines, particularly his critique of the imprecise use of the term. Habits, he explains, need to be understood as having specified temporalities – expected durations, locations in the daily schedule and positions in relation to other activities. Thus, the formation of 'new' habits may require a temporal readjustment if they require more time (e.g. for food preparation) and may deviate from accustomed or expected 'sequences of action' (Southerton 2013).

Habits create and in turn are created by taste preferences. What is deemed an acceptable, adequate or pleasurable meal is formed from an early age and reinforced through daily dietary habits. Southerton (2013) refers to this component as a disposition – culturally and socially shared understandings of the enacting of a particular practice. In the UK, a meal is commonly considered to consist of 'meat and two veg' (Warde 2000). While consuming and preparing a meal that follows

'omnivorously normative practices' (Twine 2014, p.624) may be habitual, consuming a veg*n meal may require conscious thought and planning and, thus, exist outside of one's pre-existing habits. The familiarity of food items has been found to be important in the promotion of sustainable eating and the acceptance of meat substitutes (Hoek *et al.* 2017; Hoek *et al.* 2011). The 'procedures' embodied in habits need to be learned and absorbed into one's daily routines and understandings of acceptable dietary practice, becoming 'non-reflexive actions' through 'taken-for-granted forms of tacit knowledge and embodied skills' (Southerton 2013)

Habits, by their unconscious nature, may prevent conscious dietary reflection, such that 'highly routinized actions (as is the case of meat consumption) hinder perceptions of moral relevance' (Graça, Calheiros and Oliveira 2016, p.362). Thus, the topic of this and other research into reduction and sustainable diets looks not at nonnormative, exceptional consumption, but at 'ordinary consumption', which encompasses 'those items and practices which are neither highly visible nor in any way special and which often stand in a subsidiary relation to some other primary or more conscious activity' (Jukka Gronow and Warde 2001, p.4).

On a more conscious level, if consumers are not able to identify or prepare enjoyable veg*n foods, they will be unmotivated to eat them. These skills are essential for meat and AFP reduction (Stoll-Kleemann and Schmidt 2016). A review of literature on attitudes and perceptions toward veg*n and plant-based diets found that consumers are generally deficient in knowledge of how to construct and prepare a veg*n meal (Corrin and Papadopoulos 2017). Consumers may be particularly lacking in practical skills required for cooking veg*n foods and be unaware of what to replace meat with in a meal (Macdiarmid, Douglas and Campbell 2016; Stoll-Kleemann and Schmidt 2016). The very notion that meat needs to be replaced reflects its central importance in meal-time norms.

One's dietary habits and knowledge can also reinforce one's sense of self, with 'meat consumption as a social marker in the construction of social identities and lifestyles' (Stoll-Kleemann and Schmidt 2016, p.1272). Thus, while conscious elements are involved in the adoption of a particular dietary identity, these identities will be conceptualised through unconscious

associations, contributing to automatic motivation. For instance, associations of meat eating with masculinity may reinforce meat-eating behaviour and inhibit the consumption of veg*n meals or the adoption of veg*n identities (Adams 1990). Veg*ns may be seen as 'picky eaters' (Joy 2017), 'privileged' (Greenebaum 2017), 'awkward' (Twine 2014), 'hippies' (Greenebaum 2017) or 'extreme' (Twine 2014), with veg*nism potentially considered by some to be 'a white thing' (*The Invisible Vegan* 2018). Furthermore, the regular daily consumption of meat may lead to one's sense of self as a meat eater.

Consumers may also be concerned about the healthfulness and adequacy of veg*n foods, feeling that they may be lacking in essential nutrients, such as iron or protein (Corrin and Papadopoulos 2017). Meat is commonly construed as an essential component of a healthy diet (Macdiarmid, Douglas and Campbell 2016). Furthermore, contradictory information and misinformation around the healthfulness of plant-based foods and diets can hinder a consumer's ability and willingness to pursue a fully veg*n diet. For instance, Davis (2015) describes a modern 'obsession' with protein intake, in spite of researchers finding that low-fibre diets and low consumption of fruits and vegetables are exponentially more prevalent and harmful for those in HICs (Greger 2016; Union of Concerned Scientists 2013). The high incidence of contaminants, mercury and other harmful substances in fish is also not commonly known, while consumers incorrectly believe that fish is necessary for Omega-3 vitamins, despite their not naturally producing these nutrients (Clement 2012).

These internal mechanisms (taste, habits, identity, knowledge and perceptions of health) are triggered and reinforced by environmental factors in the external world (Verplanken and Wood 2006). The physical environment has a direct impact on habits, with consumers most likely to consume the foods that are readily and prominently available. Nestle *et al.* (1998)n argue that one of the most powerful strategies to promote dietary change may be through the increased availability of healthy foods, while other researchers have emphasised the need for replacements that mimic the taste and texture of meat (de Boer, Schösler and Aiking 2014).

Though veg*n foods may be readily available in the form of fruits, vegetables, grains and other unprocessed foods, consumers lacking the skills to prepare these foods may turn to more processed convenient food options. Thus, a lack of readily available veg*n options outside of the home can make it difficult for consumers trying to reduce or eliminate their consumption of AFPs (Wellesley, Happer and Froggatt 2015; Corrin and Papadopoulos 2017). For instance, an evaluation of sandwiches available at eight major retailers and four High Street sandwich chains in the UK found that 82% of options contained meat or fish, with fewer than three percent being plant-based (Eating Better 2015). Concerns about availability are exacerbated by modern food culture, where '[t]he trend towards "convenience" has been a major influence on food purchasing habits, encouraged by lack of time, skills or interest to cook' (Dibb and Fitzpatrick 2014, p.19).

The consumer does not see the invisible forces maintaining and shaping the food system and instead encounters 'cheap and abundant meat' (Fuchs *et al.* 2016, p.303). Governmental subsidies and marketing have disproportionately supported animal food products, contributing to the maintenance of artificially low prices (Gill *et al.* 2015; Garnett *et al.* 2015; Johnston, Fanzo and Cogill 2014; Vinnari and Tapio 2012). Those in low income communities may have greater difficulties accessing AFP alternatives and affordable plant-based foods (Food Empowerment Project 2018). They may also have less flexibility in purchasing decisions and be more likely to consume lower quality diets with higher quantities of fatty meats (Darmon and Drewnowski 2008). Some have described how ethical consumption may therefore be used 'as middle-class sneering-*at-others*' and a 'mark of social or cultural distinction: as a form of consumption used to discriminate against the less culturally or financially well endowed' (Littler 2011, pp.35, 34). Reductions to the cost of veg*n options and alternatives could therefore be an important tool in supporting universal access to these diets (Hoek *et al.* 2017).

Consumers can become concerned about making the wrong choice with such a wide variety of options to choose from and may therefore rely on 'brand loyalty' and the repetition of pre-formulated routines (Ilmonen 2001). They may perceive veg*n foods as needing to be prepared at home such that, within a convenience-focused food culture, they may struggle in their attempts at

dietary transition without the knowledge and experience of cooking without meat or other AFPs (Chemnitz and Becheva 2014; Dibb and Fitzpatrick 2014). Veg*n diets may therefore be seen as more difficult or time consuming – elements that are largely unaddressed in the literature, but discussed by Parkins and Craig (2011) as essential to sustainable diets, including the need to embraces 'slowness'.

Ultimately, every component of one's dietary behaviour is linked to and influenced by cultural norms, from what is defined as edible food to the formation of a meal, such that 'culture is the pervasive foundation that underlies all food choices' (Nestle 2002, p.S51). Bourdieu (1996) theorises that consumption is formed through one's habitus, directly linking what one eats and purchases to what is viewed as socially distinguished or vulgar. Macdiarmid *et al.* (2016) argue that shifting dietary habits may be difficult if social norms are not addressed, with cultural influences described as equally (or even more) influential than individual choice (Carlisle and Hanlon 2014). For instance, as discussed in 2.1, beef, in particular, may be seen as a key component of British identity, connected to ideas of 'liberty' and commonly viewed as the national dish (Rogers 2004).

In consuming food, people consume culture. Consumption is reflective of meaning and status (Warde 2000), such that 'we feed not only our appetite but also our desire to belong' (Fiddes 1991, p.44). Meals create shared meaning (Fiddes 1991), with Douglas (2007a) describing all consumption as symbols-based communication. The terminology used in constructing and defining meals and food supports their symbolic constructs, such as the use of 'beef' to describe cow flesh and 'dog meat' to describe that of canines. Dietary habits are thus formed within and through such constructs, while being reinforced through the social nature of consumption, whereby meals are generally consumed amongst others.

Social and cultural elements have generally been less addressed by research into reduction barriers, which have predominantly focused on psychological elements (e.g. Monteiro *et al.* 2017; Kunst and Hohle 2016) and taste (e.g. Lea and Worsley 2001). However, after conducting interviews with vegans in the UK (n=40), Richard Twine (2014) described the potentially powerful influence of these factors. Meat-eaters, who may still be experiencing cognitive dissonance (i.e. struggling

consumers - Onwezen and van der Weele 2016), may subsequently react negatively to the presence of a vegan. Twine identifies two possible negative reactions – the 'omnivore's defensiveness' or perceptions of the vegan as 'awkward' or difficult (2014, p.627). Most of his participants described negative social encounters, with friends and/or family being unsupportive, unwilling to cook vegan food, no longer inviting individuals to events or seeming annoyed or inconvenienced by their veganness. Thus, vegans may feel that they need to preserve the happiness created in a social situation and 'perform' veganism for others.

Conversely, proximity to veg*ns may result in reduction promotion for meat eaters, with Twine identifying the potential for 'non-practicing practitioners' who begin 'to adopt some vegan practices' (2014, p.627). Where this does not happen, there is instead the potential for social distancing, either through negative feelings on the part of the non-vegan or through vegans struggling to be around those consuming AFPs after their own perceptions of these foods has changed. Through these forces, Twine describes the 'vegan killjoy' who, by their presence and 'critical deconstructive work … does what all politically wilful killjoys attempt to do: create new meanings and practices that underline the shared joy in living outside and beyond social norms once thought fixed' (2014, p.637).

2.6 Conclusion

Reduction campaigns are likely to be a key component in shifting dietary patterns in the UK and abroad. However, such campaigns are inevitably limited in their influence and are, on their own, insufficient in addressing the severity of the current climate crisis, the increasingly unsustainable global food system and the billions of land and trillions of sea animals killed each year for human consumption. While change may best be advocated on a broader, cultural level through national and international policy that addresses issues of food production, waste and access (de Boer, de Witt and Aiking 2016; Smith *et al.* 2013), current governmental bodies have yet to demonstrate a willingness to enact such measures.

In the current political, social and cultural environments the (over)consumption of AFPs continues to be normalised and rooted in 'deep core' fundamental social norms (Sabatier 1988). Reduction campaigns are likely to be playing a key role in shifting dietary dynamic norms around AFP consumption, which can then influence the behaviours of non-participants (Sparkman and Walton 2017). Evidence of this may be exhibited in the exponential increases in vegan food availability and purchasing in the UK, which is likely to be partially if not primarily due to the increasing popularity of vegan campaigns. 2019 has been referred to as 'The Year of the Vegan', 'the year veganism goes mainstream', as many popular fast food franchises, supermarkets and restaurants continue to expand their vegan options and new AFP alternatives become increasingly similar to the texture and taste of animal-derived products (Parker n.d.).

Campaigns promoting reduction must not only promote awareness and increase individuals' motivation but identify the barriers that may be most significant and, at the same time, able to be addressed through specific intervention techniques, a process which can be supported through the use of the Behaviour Change Wheel. Researchers have yet to reach a consensus on the most obtrusive barriers and, perhaps even more importantly, those that, when addressed, could have the greatest impact on one's propensity to reduce. The Behaviour Change Wheel presents a framework that may be used to create a common categorisation of barriers and to link them to specific interventions and policy measures, as this dissertation will demonstrate.

Within the literature a clear gap remains in knowledge about reduction campaigns and reducers. In particular, little is known about the influence campaigns have, with only two studies examining the dietary impacts of campaigns and one finding the intervention to have no statistically significant effect on consumption practices. In addition, the primary motivators for participants of campaigns and their relationship with motivators and dietary goals and changes is unknown. Finally, research has yet to be conducted exploring the relationship between these factors and barrier perceptions. Specific barriers may be particularly prohibitive, while certain motivating factors could present important reduction opportunities. This research project serves to address each of these components.

Chapter 3 Methodology

3.1 Research overview

As discussed in Chapter 2, research is lacking in understanding who potential reducers are and what may be helping or hindering their reduction plans. Little is known about the motivators and barriers experienced by reducers and their relationship to achieving successful dietary change. It may be that certain factors are particularly obtrusive, while others can be enablers in starting and maintaining reduced animal food product (AFP) consumption. A primary mechanism for promoting reduction is non-profit campaigns and, yet, the few studies into this area have generally focused on their goals (e.g. meat reduction or veganism), while little is known about their participants. This research project offers a deeper insight into the planning and running of these campaigns, in addition to being the first project to study their participants.

The main research question:

1. How do factors enable and hinder sustainable dietary change in the consumption of animal food products?

The secondary research questions, which will inform the primary question, are:

1. What types of interventions are used to promote meat reduction and veg*nism in the UK? – Chapter 4
2. Who are the primary participants of reduction interventions? – Chapter 5
3. How do campaign goals and content relate to the dietary goals and changes of their participants? – Chapter 5 and Chapter 6
4. How do dietary patterns change for reducers? – Chapter 6
5. What relationship do reduction goals have to dietary changes? – Chapter 6
6. What relationship do specific motivators have to reduction goals and success? – Chapter 7
7. What barriers are perceived as most significant for reducers? – Chapter 8

8. How can the Behaviour Change Wheel be utilised to evaluate components of the reduction process? – Chapter 2 through Chapter 9

The Behaviour Change Wheel introduced in the previous chapter has been used to categorise and interpret motivators and barriers in the reduction process, all of which are further informed by the additional components of the theoretical framework – sustainable, ethical and social consumption theories (2.1). The use of three research methods – interviews with staff members and focus groups and a longitudinal survey with campaign participants – has enabled a comprehensive approach to analysing and interpreting these factors and their relationship with dietary habits. All three components are integrated throughout each chapter, though the former is the focus of Chapter 4 and the latter two methods are the focus of Chapter 5 through Chapter 8.

3.2 Research Timeline

March 2016 to February 2017	Campaign selection
June 2016	Survey piloting
July 2016 – June 2017	Survey recruitment and completion of initial survey
July 2016 – June 2017	PTC & LEB recruitment
August 2016 – February 2017	iAnimal recruitment
August 2016 – June 2017	3DV recruitment
September– November 2016	GVC recruitment
January – February 2017	GVUC recruitment
March – June 2017	CKC recruitment
November 2016	Focus group pilot
November 2016 – May 2017	Focus groups held
June 2017 to June 2018	Staff interviews and follow-ups

3.3 Campaign Selection

Campaigns serve as an important site of reduction promotion, in addition to being a valuable resource in accessing potential and current reducers. Not only does researching reduction campaigns further knowledge of how campaigns are crafted and maintained but it increases an understanding of which barriers and motivators are being (un)addressed.

A total of 48 organisations that represent 53 different campaigns were contacted to participate in the research project. Organisations were identified through both purposive and snowball sampling, including on-line searches for 'vegan', 'vegetarian', 'meat reduction', 'flexitarian' and other relevant terms. Conversations with organisations, researchers and other interested parties also led to the identification of additional organisations. Selection criteria included that organisations had a specific campaign promoting either meat reduction, vegetarianism or veganism and that campaigns had a clear mechanism by which the survey could be disseminated, such as an on-line pledge or a video. Some had campaigns but these campaigns were not currently being promoted, such as The Vegan Society's 30 Day Vegan Pledge.

Table 3.1 Content* and goals of campaigns contacted

	Reduction	Vegetarianism	Veganism	**Total****
Animal protection	4	3	9	**21**
Environment	7	1	1	**9**
Global poverty	0	0	1	**1**
Health	0	0	1	**1**
Multiple	8	4	10	**22**
Religion	2	0	0	**2**
Food	0	0	1	**1**
Total**	**21**	**8**	**18**	**53**

**Content refers to the primary area addressed through the campaign, as many also incorporate other areas.*
*** Some campaigns include two primary areas of focus (e.g. global poverty and animal protection). As such, totals reflect the actual number of campaigns. Some organisations did not have any campaigns and are thus counted by their content only.*

Campaigns also promoted reduction through a variety of different content areas: animal protection (including animal welfare or rights), environmental degradation, climate change, global poverty and equity, human health and religion. Over fifty percent of campaigns used a mixed approach, often incorporating elements of health, the environment and animal protection without one particular focus. While 41% of animal protection organisations promoted veganism, only one environmental campaign did so, with the majority promoting meat reduction. This is likely to be reflective of reduction campaigns in general. Specifically, Laestadius *et al.* (2014b; 2014a; 2013) found that animal protection organisations were more likely to promote reduction and, when doing so, to support more significant reduction levels (e.g. vegetarianism or veganism) than environmental organisations.

Organisations were twice as likely to promote veganism or reduction than a vegetarian diet and five organisations stated that they did not work to promote reduction. The final organisation selection was determined by feasibility for the campaign and researcher and to ensure diversity across four key characteristics: mechanism, longevity, goal and content (see Table 3.2, below). This was established through multiple discussions with potential campaigns and several campaigns were mutually deemed unfeasible for various reasons, including where there was no mechanism to distribute the survey, such as if the focus was on the food environment or business sector. Other campaigns included a large number or majority of participants outside of the UK. Some campaigns also had other surveys they were distributing to participants and did not want to increase their burden (e.g. the month-long vegan campaign, Veganuary, which was already engaged in another research project), while one had a subversive campaign that could have been undermined by the inclusion of a survey explicitly discussing reduction.

Table 3.2 Campaign characteristics

Characteristic	Description	Examples
Mechanism	Approach for disseminating information	Virtual reality videos, on-line pledges, changes to the food environment or e-mail messages
Longevity	Length of time for which dietary change is sought	Ranges from short-term change (e.g. one day, week or month) to long-term or permanent change (e.g. ongoing reduction or elimination of particular AFPs)
Goal	The level of change sought	Varies from smaller changes (e.g. a single meatless day or unspecified overall reduction in AFP consumption) to larger changes (e.g. adopting a vegetarian or vegan diet)
Content	The type of information included in the campaign	Environmental degradation, climate change, religion, food, animal protection or global inequalities

The final sample includes six organisations with a total of seven campaigns (see Table 3.3, below). Campaigns represent a variety of methods, though six of the seven campaigns are primarily on-line based, which reflects the methods used by the majority of contacted campaigns. The organisations include both small and large campaigns with reduction and vegan goals, though no vegetarian campaigns were identified where successful collaboration could be achieved. The majority of reduction-based campaigns derive from environmental organisations, while the

majority of vegan campaigns focus on animal protection. The exception to the latter, the 30 Day Vegan campaign, is focused on food elements (see 4.7 for more on this campaign).[2] Again, these elements reflect trends identified within contacted campaigns.

Table 3.3 Participating organisations

Organisation	Campaign	Mechanism	Longevity	Goal	Content
Animal Aid	Great Vegan Challenge	On-line sign up & Mailed packet	One month	Vegan	Mainly animal protection, but mixed
Animal Aid	Great Vegan University Challenge	On-line sign up & Mailed packet	One month	Vegan	Mainly animal protection, but mixed
Animal Equality	iAnimal	Virtual Reality	Long term	Reduction[3]	Animal protection
CreatureKind	CreatureKind Commitment	On-line pledge	Long term	Reduction	Religion
Friends of the Earth	Let's Eat Better Pledge	On-line pledge	Long term	Reduction	Environment
Part-Time Carnivore	Part-Time Carnivore	On-line sign up	Long term	Reduction	Mainly environment, some health
Viva!	30 Day Vegan	On-line sign up & Daily e-mails	One month	Vegan	Food-focused

Participating campaigns broadly represent the variation seen in contacted campaigns regarding target audiences, content, messaging, mechanism and longevity. These categories are particularly useful in grouping campaigns, with a particular focus on messaging and content. In particular, campaigns were most likely to include information about animal protection or the environment, while those focusing on the latter were less likely to promote vegetarianism or veganism (veg*nism). Areas of similarity (e.g. the use of a month-long vegan campaign by the Great Vegan Challenge, Great Vegan University Challenge and 30 Day Vegan) enabled further analysis of areas of differentiation (e.g. content).

[2] While the 30 Day Vegan is a food-focused campaign, for analysis it has generally been included with the two animal protection campaigns, as this is the primary focus of Viva!.

[3] Reduction refers to both meat and AFP reduction, as there are nuances between the way reduction is approached by different campaigns. CreatureKind discusses dairy, eggs, meat and fish and encourages reflection and reduction on the consumption of all of these foods. iAnimal's films end with a request to not consume meat, but their subsequent materials encourage reduction leading toward a fully plant-based diet. The LEB and PTC focus specifically on meat reduction, though both include options for consuming no meat.

The three vegan campaigns – 30 Day Vegan (3DV) by Viva! and The Great Vegan Challenge (GVC) and Great Vegan University Challenge (GVUC) by Animal Aid – were all on-line commitments to follow a vegan diet for a month, while the reduction campaigns were primarily on-line pledges to reduce one's meat consumption in general. This included CreatureKind (CK)'s CreatureKind Commitment (CKC), Part Time Carnivore (PTC) and Friends of the Earth (FOE)'s Let's Eat Better Pledge (LEB). Animal Equality's iAnimal campaign was presented in an entirely different format, through the use of an in-person virtual reality video. The GVC and GVUC were primarily focused on animal-related motivators, while the LEB and PTC were primarily focused on the environment. However, all four of these campaigns also included other motivators. iAnimal's content was exclusively related to animals, while the CKC's was exclusively about religion (specifically Christianity). The 3DV, on the other hand, was a food-focused campaign aimed at demonstrating that a vegan diet 'is really quite tasty' (Viva1).

The variety of mechanisms, goals and content areas addressed by campaigns also supports access to different types of reducers, particularly those aiming to reduce for environmental or animal-based reasons – again reflecting the population of campaigns contacted. In addition, messaging pertaining to reduction levels and longevity supports access to participants with different reduction goals, including those who may have not had long-term goals or viewed the campaign as a temporary change. Overall, though there are not a large number of campaigns promoting reduction, this research project has benefited form the opportunity to collaborate with several well-established organisations, including large, international organisations and smaller, more locally-based groups.

3.4 Survey

3.4.1 Survey overview

The use of an on-line survey was the most appropriate mechanism to reach a large, dispersed population across several campaigns and at multiple time points (Wright 2005; Synodinos

2003; Hillygus and Snell 2015). A longitudinal design was selected to enable comparison over a period of time. The research design aimed to address the current gap in literature, while maximising the potential value to policy makers, researchers and NGOs. Two studies have been conducted to date on the impact of reduction campaigns (Edge Research and Mercy for Animals 2015; Faunalytics 2016), both with the use of a control group and with inconsistent results (2.3). The study was designed to, instead, examine those participating in campaigns without the use of a control group. Not only does this method enable within group comparisons, but it allows a shift in focus from whether or not campaigns are effective to the changes in diet and perspective undergone by participants. In particular, this research design enables further descriptive analysis and data triangulation with two additional qualitative components (see 3.4 and 3.5).

The timing for follow up surveys was selected to enable numerous comparison points over a six-month period. As multiple campaigns had a one-month duration (GVC, GVUC and 3DV), an initial follow up at one month was most appropriate, with a second at three months to measure medium-term change and a final survey at six months to see if initial changes were maintained, new goals formed or new dietary changes were made. As research suggests that habit formation takes an average of 66 days (Lally *et al.* 2010), the timeframe is ideal for measuring whether or not behaviour change occurred, in addition to allowing for comparisons in reported barriers and motivators during this period.

Consultation with each organisation was undertaken during the campaign selection process and maintained throughout the research period. Successful, transparent collaboration helped to ensure the appropriateness of methodology and to maintain a high ethical standard. Staff members were given opportunities to voice their own research priorities prior to survey design and the opportunity to review and assist in editing and sharing a pilot survey before initial distribution. Relevant researchers, non-profit workers and laypersons interested in reduction were also given the opportunity to pilot the study at two separate points (n=49 and 23).

The longitudinal survey was hosted by Qualtrics and disseminated in conjunction with participating campaigns. A longitudinal design was selected to measure potential campaign impact

on dietary habits and perceptions over time through repeated measurements, while fostering familiarity with the text and layout for participants. There are ample opportunities to evaluate whether dietary changes continue during this time frame and, specifically, how these changes take shape in relation to initial (and changing) goals, motivators and perceived barriers.

Metrics have been designed to maximise accuracy and minimise reporting bias. For instance, food diary responses during a continuous reporting period can create increasing underreporting errors over time (Hu *et al.* 2017). Instead, staggering responses over a longer period aims to reduce the bias of repeatedly reporting information during a short period. Dietary recall methods can also result in underreporting compared to individual interviews (Straßburg *et al.* 2017). Where underreporting occurs, comparisons between data points for a particular individual would still hold relevance and potentially be more meaningful than observations from a single time point where such biases may exist. In addition, as nonresponse rates in longitudinal research can pose additional biases (Friedman *et al.* 2017), connections are only made between those who responded at each point, rather than comparing all respondents from each wave. For instance, changes from zero to three months are measured within those who responded to both surveys (n=520).

A single lottery prize was selected to encourage participants to complete all surveys and improve retention rate. Participants who completed all four surveys were entered into a raffle draw to win £200, derived from a PhD scholarship fund provided by the University of Kent (the Quant Scholarship). Researchers have found a large lottery prize to be the most cost-effective strategy for promoting increased participation of web-based surveys, as opposed to small payments or several smaller lottery prizes (Gajic, Cameron and Hurley 2012; Ziegenfuss *et al.* 2013). It has also been found that mentioning the incentive prize in an e-mail subject line, as has been done in this project, increases survey response without negatively affecting the validity of results (Janke 2014). During survey piloting, the majority of respondents also supported the use of a single prize. The anonymisation of responses and random awarding of the prize also helped to ensure

participants did not form false beliefs that providing certain answers would increase their likelihood of receiving the prize.

The initial survey was disseminated through four means, with campaigns using one or two strategies: on a thank you page after signing up for a campaign; in the e-mail received immediately after signing up; within a personal challenge component of the website (for the Part-Time Carnivore campaign); and/or in person (for the iAnimal campaign). Follow up surveys were then disseminated after one, three and six months via e-mail, using the subject line *Is meat on your menu? Survey: Win £200!* Initial responses were collected from 21 July, 2016 through 9 June, 2017. Due to the nature of different campaigns, the survey was not always available to participants during the entire time frame. For instance, it was not appropriate to have participants complete an initial survey for month long campaigns more than a month before the campaign started, as this could have distorted the data (e.g. a participant eats meat three months before a campaign begins but then becomes a vegetarian by the campaign's start). CreatureKind consented to participation later in the data collection phase and thus new participants only received initial surveys beginning in late March, 2017.

After completing the first wave, contact triggers and embedded data were used to organise participants and allow for the sending of follow up surveys. Two types of embedded data pertaining to wave number and participating campaign were used to organise results. Using this information, those engaging with ongoing campaigns that do not have a specific time frame were grouped according to the week of initial survey completion. Each Monday at 9:00a.m. BST during the collection period the contact trigger was manually switched to the following week. The embedded field for wave number was also tracked using a spreadsheet updated weekly and manually increased over time, a minimum of two weeks after sending the final reminder for a particular survey. As day of the week and time of receipt have been found to be factors in individual responses and response rate (Mindell *et al.* 2012), each survey invitation and reminder was sent at 8:30 a.m., with the initial invitation sent on a Friday and reminders sent the following Monday (three days later) and Friday (one week later). Invitations and reminders were manually scheduled in advance

using Qualtrics. Dates were determined to be as close to the specified allotted time from initial contact with the survey at one, three and six months, while maintaining consistency of weekday for distribution.

3.4.2 Survey Design

The survey has been designed to maximise accuracy and minimise respondent burden. As evidence suggests that survey length can inversely affect respondent rate (Rolstad, Adler and Rydén 2011; Wenemark *et al.* 2010) while increasing participant burden, average completion time was minimised (five to ten minutes) and assessed through piloting, while still ensuring the necessary information was obtained for the study. Surveys from previous relevant studies were used to assist in survey question design, including Lea, Crawford and Worsley (2006), De Backer and Hudders (2015; 2014), Tobler, Visschers and Siegrist (2011), de Boer, de Witt and Aiking (2016), Edge Research and Mercy for Animals (2015), Faunalytics (2017) and Latvala *et al*. (2012). Wording was also selected for simplicity and easy comprehension (including avoiding the use of jargon or technical terms), as well as to ensure that all questions were relevant to the study and to participants, without respondents having to provide the same information twice (Wenemark *et al.* 2010; Moser and Kalton 1972). These areas were also confirmed through extensive piloting, as discussed in 3.4.1. Questions were generally close-ended to support the use of a quantitative methodology in creating easy comparisons, using Likert scales where possible for ease of answering and analysis. The use of leading or ambiguous questions was avoided, including not using terms that may be unclear or interpreted differently, such as 'often', or asking two things in one question (Moser and Kalton 1972).

The survey began with a series of factual questions that were designed to be easily answered and begin the process of thinking about one's food choices (see Appendix 1 for full survey). The first question in the survey asked participants for their age, with those under eighteen automatically exited from the survey. This was followed by a series of dietary questions using three metrics: the self-reporting of consumption over the past two days, how dietary habits have changed

over the previous six months and plans for future changes over the upcoming six months. This design enabled reflection on one topic (individual consumption) from multiple perspectives, such that inconsistencies could be easily identified by participants and the researcher. In addition, this allowed for a more complete set of data on each individual's dietary habits, ranging from the previous six to the upcoming six months. It also allowed for checks between surveys. For instance, if a participant reported reducing their meat consumption over the past six months in the final survey, this could be compared to reported consumption rates from the initial and six month surveys.

Participants were first asked about their dietary habits over the past two days for: red meat (beef, pork, lamb); white meat (chicken or turkey); eggs (omelette, in salad, etc.); dairy (milk, yogurt, cheese, etc.); and fish and shellfish (tuna, crab, etc.) A simple explanation was provided about each category, along with information and examples about serving sizes for different foods. Additional clarification was also provided: *The past two days refers to the two previous days of the week and so does not necessarily mean the past 48 hours*. The consumption question was based upon the work of Faunalytics (2017), a US-based non-profit organisation, but was adjusted to account for the more common consumption of lamb in the UK.

Self-reported dietary categories (e.g. vegetarian) were deemed an inferior strategy, as there is the potential that, for instance, self-defined vegetarians consume fish or some amount of meat (Pfeiler and Egloff 2018; Mulle *et al.* 2017). In addition, by including two (rather than one) days there are more opportunities to view if certain AFPs have been consumed and for greater variability between and within participants' responses. Further than two days could have decreased reliability due to difficulties with recall. Asking about consumption generally (e.g. asking how often a month participants consume a particular food) was also deemed an inferior strategy, as this is likely to be difficult to determine and does not account for variability over time (Moser and Kalton 1972).

The following questions asked the individual to report how their consumption of each food group had changed over the previous six months and how they think it will change in the upcoming

six months, thus creating three separate measurements for each AFP category. This allowed for comparisons between reported and actual decreases, as well as enabling respondent categorisation by current and planned dietary group (e.g. meat reducer or pescatarian). If for any category the respondent replied that they do/will eat less or do/will not eat it, a question was triggered asking their motivations for this change, with specific reference to the food groups the individual identified: *How important were each of the following reasons in deciding to stop or reduce the amount of ____ you are eating?* Motivation categories included: concerns about food safety, for health reasons, because of religious or spiritual beliefs, to save money, environmental concerns, concerns over animal welfare and other, with a space to specify. A five-point Likert scale was used, ranging from very important to not at all important. These motivation questions were based on those used in the British Social Attitudes Survey (2014).

The majority of the survey was comprised of twenty statements about potential barriers and opportunities when trying to reduce one's consumption of meat or other AFPs. Barrier questions used a Likert scale and were placed at the end of the survey. The ordering of these questions was designed to avoid a conditioning effect (Moser and Kalton 1972). For instance, questions about motivating factors (i.e. reflective motivation) were placed near the end of the survey to avoid their biasing later responses. In addition, more personal questions (e.g. about the effect of reducing one's meat consumption on one's social life or relationships with family) were placed near the end, as recommended by Moser and Kalton (1972), such that if a participant then stopped responding to questions due to their more personal nature minimal data would be lost.

Barrier questions were designed with the aid of previous research and to include the specific barriers that have been identified in the literature (e.g. Nestle *et al.* 1998; Thaler and Sunstein 2009; Food and Agriculture Organization 2010; de Bakker and Dagevos 2012; de Boer, Schösler and Aiking 2014; de Boer, de Witt and Aiking 2016; Hunter and Röös 2016). Questions were formulated around specific barrier topics (e.g. habits or social elements) that were categorised using BCW components (e.g. psychological capabilities) (see Appendix 2). Connections between specific barrier questions and BCW categories were validated through communication

with Lou Atkins, one of the theory's founders (see Appendix 2). Question wording was designed to be as clear and concise as possible, while ensuring there were a mix of reverse coded questions and that wording varied sufficiently in terms of addressing meat and other AFPs, including some questions with no direct reference to AFPs or meat reduction (e.g. *I like trying new foods*). Barrier questions were also structured to ease participants into the topic through less personal questions.

The final survey questions pertained to sociodemographic information and were selected based on areas that have been previously identified as potentially significant to the reduction process (de Boer, de Witt and Aiking 2016; Freeman 2010; Dibb and Fitzpatrick 2014; Cordts, Nitzko and Spiller 2014; Rothgerber 2014): age, income, ethnicity, gender and highest level of educational attainment. These were designed to maximise comprehension (including across different nationalities), while maintaining comparability. Though the majority of respondents were from the UK, as campaigns may include international participants a question was also asked about country of residence, which adjusted how questions about ethnicity, income and education were worded for individual respondents. As it would not be feasible to construct such questions for every country, major English-speaking countries where many of these organisations have a presence (i.e. the US, Canada, Australia and New Zealand) were included, as well as an additional set for non-UK EU residents and a generic set for those residing outside of these countries.

Income ranges were determined by the latest government data per country and organised by decile for ease of comparability. Ethnicity and education categories were also determined by government census categories. Finally, participants were asked to provide an e-mail address where follow-up surveys could be sent. Subsequent surveys did not include questions about sociodemographic data, but did ask if participants' e-mail address, income, educational level or country of residence had changed and, if so, they were given the opportunity to update this information.

3.4.3 Survey Data Analysis

After initial survey data gathering through Qualtrics, data cleaning and analysis were conducted using SPSS 24 and STATA 15. A total of 1,915 responses were recorded, including 36 who did not meet the age requirements (eighteen and over) and were therefore exited from the survey. Responses were removed from the data set if they did not answer at least two of the three groups of consumption questions (i.e. reported current consumption, changes from previous dietary patterns and planned future dietary changes) or if they did not respond to the majority of questions. As the progress measure used by Qualtrics was not accurate, which may have partially been due to the conditional nature of some survey questions (i.e. motivation for current reduction or questions about sociodemographic characteristics), a review of the data set showed that all responses with a progress measure under 49 could be removed (n=277) and additional review identified further insufficiently complete responses that were removed (n=15). In total, 328 responses were removed during the data cleaning phase, leaving 1,587 valid responses from the initial wave. The same process was repeated for additional survey waves.

Table 3.4 Response rate by survey wave

0 month	1 month	3 months	6 months
1,587 / 1,538 (96.9%)*	739 (48.9%)	520 (33.8%)	531 (34.5%)

** All 1,587 responses are used in discussions of the survey population (Chapter 5). 49 zero month respondents who did not provide their e-mail addresses have, however, been excluded from longitudinal analysis.*

For longitudinal analysis 49 respondents who did not provide an e-mail address in wave zero (thus prohibiting identifying the respondent in subsequent waves) were removed from the first wave, leaving n=1,538 (see Table 3.4, above). Nearly fifty percent of these participants then completed the one-month survey and just over one-third completed the three and six-month surveys. Over fifty percent of respondents participated in at least one of the follow up surveys, with over one-fifth completing all four surveys (see Table 3.5, below). 15.4% completed three surveys and 17.3% completed two surveys (usually the zero and one month surveys).

Table 3.5 Number of surveys completed by participants

1 survey	2 surveys	3 surveys	4 surveys
44.7%	17.3%	15.4%	22.7%

Responses were used to create a variety of additional variables for analysis. The three types of dietary questions – consumption over the previous two days, changes from six months prior and anticipated changes in the next six months – were used to group participants into dietary groups. For instance, a participant who reported eating no red or white meat over the two-day period and who selected 'Do not eat' for current consumption would be categorised as currently eating neither food type. Similarly, someone who responded 'Eating less' in a particular category would be classified as reducing that type of food. Groups were determined as follows: non-reducers (those who reported eating red and white meat and not reducing either), meat reducers (those who reported eating red and/or white meat but eliminating or reducing consumption of one or both), pescatarians (those who ate fish but not red or white meat), vegetarians (those who ate dairy or eggs but did not eat fish or red or white meat) and vegans (those who reported eating no AFPs). After the first survey, a meat reducer was classified as someone who was eating less total meat than in the first wave.

To evaluate reduction achievements, a decrease in consumption (or no consumption) between waves for each AFP category was categorised as being successful, whereas for those seeking to not consume foods, success was only attained for those who reported consuming zero servings. Successful meat reduction was achieved when reduction or elimination goals were met for red and white meat, in addition to overall total reductions in meat consumption or none being consumed.

Where discrepancies emerged or participants were not able to be categorised using the constructed syntax in STATA 15, individual analysis was conducted to determine appropriate categorisation, where possible. Current dietary category (e.g. vegetarian or meat reducer) was determined for 1,574 participants (missing=13). Future dietary group was determined in a similar manner, using questions about anticipated dietary changes over the next six months. 1,576 respondents (missing=11) were able to be categorised by future dietary group. Current and future dietary categories were then combined into a single variable comprised of 22 possible categories

(e.g. current non-reducer, future vegetarian or current vegetarian, future vegan) for 1,565 initial respondents (missing=22).

Individual motivators were categorised as primary ('very important' or 'important'), secondary ('moderately important' or 'somewhat important') or a non-motivator ('not at all important'). Over 95 percent of participants had multiple motivators and more than three-quarters included three or more. With over 5,000 possible motivator combinations, for comparability participants were grouped into eight categories by responses to the three primary motivators (health, the environment and animal welfare), as identified in this survey and in other research (e.g. Dibb and Fitzpatrick 2014; Lee and Simpson 2016).

3.4.4 Weights

Due to a lack of available data from contributing campaigns regarding population demographics, weighting was unable to be utilised. However, where available, population data has been used to make comparisons to the sample and to determine response rate. For the 30 Day Vegan (3DV), new participants were recruited through a link on the web page after signing up during the period of August 2016 to June 2017. During that period 161 people participated in the campaign, 48 of whom are included in the survey sample (response rate: 29.8%).

Four people participated in the CreatureKind Commitment (response rate: 80%) during the research period, from March to June 2017. The sample was still included as it represents the only campaign to be focused primarily on religion, though due to the low sample size participants are only included in general analysis and not individually analysed.

Part-Time Carnivore (PTC) recruited participants between July 2016 and June 2017 through two mechanisms – a personal challenge component of the website and an invitation displayed immediately after signing up. During that period 160 individuals signed up to the PTC and 56 completed the survey (response rate: 35.0%). PTC staff used the names of participants who signed

up during the collection period to estimate that 77.6% were female and 22.4% male, which reflects a slightly higher female percentage than in the sample (75.9%).

In 2016, 2,504 people participated in the Great Vegan Challenge (GVC). Those who signed up after mid-September (numbers not available) were given a link to the survey in the 'thank you for signing up' e-mail. 470 survey responses were included from GVC participants, with a response rate of 18.8% (or greater). At the point of sign up, Animal Aid asked GVC participants about their current dietary habits, with responses indicating that the survey sample was very similar to the broader GVC population in this regard, though slightly more likely to be vegetarian (41.9% in the sample and 40.0% in the population) and less likely to eat meat (35.0% vs. 36.2%) than the population. Breakdown by gender was similar (88.9% female for the population and 89.8% in the sample). The Great Vegan University Challenge (GVUC) had 422 participants in February of 2017, but Animal Aid was only able to add the survey link to the e-mails after mid-January. Twenty GVUC participants are included (response rate: 4.7% or higher).

Let's Eat Better Pledge (LEB) participants received the survey link when signing up between July 2016 and June 2017. 1,845 people signed up for the campaign during this time and the campaign had the highest response rate, at 51.9%. A survey of LEB participants conducted by Friends of the Earth staff in 2017 (n=380) found that 96% were white, 75% female, 3% were 18 to 24-years-old, 9% were 25 to 34, 15% were 35 to 44, 20% were 45 to 54, 27% were 55 to 64 and 27% were 65 or over (Friends of the Earth 2017). These findings are very similar to the survey results, though with a greater proportion of participants over 64 (19.5%).

iAnimal was unable to be offered to the vast majority of participants during the research period, due to the nature of the campaign. As is discussed in 4.3, each viewer is engaged in a one-on-one conversation after viewing the film and has the option to sign up for their LoveVeg pledge. Thus, staff and volunteers were usually too busy engaging with participants to offer the survey to respondents, in addition to not wanting to ask too much of participants by adding a five to ten minute survey to an encounter that may have already lasted upwards of ten minutes. The survey was therefore offered to a small minority of iAnimal participants by Animal Equality staff and

volunteers at a selection of their screenings from August 2016 to February 2017, during which 14,334 people viewed one of the iAnimal films. 32 iAnimal respondents are included in the data set.

3.5 Focus Groups

3.5.1 Focus groups overview

Focus groups were selected as a secondary methodology to enrich and triangulate survey data through the emergence of specific experiences and areas of conflicting opinion. They enabled the establishment of group norms within a social setting where participants could (dis)agree with one another and build off of each other's comments (Stewart 2015). The design of the focus group encourages the creation and sharing of group norms, the elaboration of ideas that might otherwise be only partially formed within individual interviews, inter-group clarification and the sharing of individual attitudes (Kitzinger 1994). While the survey component focused on tracking individuals from the start of their reduction journeys, focus groups were a chance to gain insight from those who had been already been actively engaging with reduction and may have been further along in meeting their reduction goals. This presented opportunities for reflection and the recounting of emotional responses and specific experiences leading up to and during one's attempts at reduction.

As dietary changes and individuals themselves 'do not operate in a social vacuum', even where censoring may occur due to the social nature of a focus group setting, 'knowing what is (and is not) expressed in a group context may be as important as knowing what is expressed in a confidential, one-to-one interview' (Kitzinger 1994, p.112). As eating is an inherently social act, with food choices often made and eaten in the company of others, the communal setting of the discussion that began with a shared meal over informal conversation could help facilitate a connection with recognised social norms of consumption. The establishment of a social setting could support individuals' abilities to reflect and recount through and alongside their fellow reducers, revealing normative constructs established within this type of behaviour change (i.e. 'synergism'- Stewart 2015, p.46). In addition, the focus group setting allows for and can promote

snowballing of responses, with the potential for memories to be triggered by the statements of others, while encouraging spontaneity and engagement through heightened stimulation (Stewart 2015).

A total of five focus groups (n=33) were held with campaign participants from November 2016 through May 2017 and multiple strategies were utilised to recruit participants. First, those who had completed the survey were invited to register their interest in participating in a group discussion via e-mail. The brief survey to register one's interest in joining a group discussion was also shared via social media on pages devoted to vegetarianism and veganism.[4] Participating organisations also shared this with their campaign participants, in their newsletters, on social media and via e-mail. The locations of those interested in participating were mapped and used to determine focus group settings. Polls were then used to assess individuals' availability for various proposed times during weekday evenings and weekends at convenient locations. When enough participants were available for a specific time, a final confirmation was sent and further recruitment was done through social media and with participating organisations. Participants received e-mail reminders five to seven days before the event and a call the day before as a final confirmation.

A pilot focus group was held in November of 2016 with members of the University of Kent's Vegetarian and Vegan Society (n=10). This was a valuable experience in testing the interpretation of question wording, potential group dynamics, timing and additional emergent technicalities within the focus group setting. This was also an opportunity for the note taker (see 3.5.2) to become more familiar with the running of the focus groups and practice tracking the speaker order. A review meeting between the researcher and note taker after the focus group served to establish areas of improvement, including having a pre-determined amount of time (twenty minutes) for eating and informal conversation before the focus group formally commenced and to pre-assign seats through

[4] Groups could not be identified that focused on meat reduction or meat reducers and the majority were dedicated to veganism. This may reflect findings about the social impacts and community formation around a vegan diet, as discussed in 8.6 and 9.3. However, as the aim of focus groups was to facilitate discussion between those further along their reduction journeys, and meat reducers were still well represented within the focus group samples, this was not prohibitive.

the use of name tags to separate those of different dietary groups and avoid 'clique' behaviour or grouping.

Focus groups were held on different dates at locations convenient to participants (Manchester, London, Brighton and two in Bristol) and each included a free meal, provided using Quant's scholarship funding (see 3.4.1). In addition, where possible they were held at relevant events, with three at popular vegan festivals — one at a Viva! Vegan Festival and two at VegFest UK Festivals —, at which participants received free early entry. Due to the potential for cancellations, up to twelve participants were booked per focus group with aims of having five to eight in attendance. After the second focus group, focus group attendees also pre-ordered their meals to further incentivise their attendance. Actual participation per focus group was: four, five, eight, nine and seven.

The first focus group, held at Viva! Vegan Festival, was exclusively for 3DV participants (n=4), with a second single campaign group attempted for GVC participants that was unable to be held due to low turnout. The use of pre-existing associations in focus groups has been supported by researchers in the area as promoting a more natural, open environment (Kitzinger 1994). The 3DV focus group therefore served as a group where vegan-only norms were established, while other groups had a mixture of reduction, vegetarian and vegan norms, as is discussed in Chapter 6 through Chapter 9. It also allowed for more opportunities for commonality in goals and experience, while the other focus groups created more opportunities for comparison and disagreement around dietary goals, ethics and priorities. Focus group participants are identified based on the discussion they participated in, followed by a number from one to nine: Viva!'s Vegan Festival (VI1-4), Manchester (MA1-5), London (LO1-8), Brighton (BN1-9) and Bristol (BL1-7).

3.5.2 Focus group structure and questions

In order to promote an egalitarian environment and a 'power shift' from the researcher to the participants (Aléx and Hammarström 2008), chairs were arranged in a circular or, where not

possible, a rectangular shape. In addition, as the researcher is male a female note taker was included to promote comfort among female participants. The note taker was trained by the researcher and was fully aware of research ethics and focus group structure.

The provision of a pre-ordered meal and beverages was also aimed to provide a form of power balancing and payment (Head 2009). The opening twenty minutes were set aside for informal conversation and eating, in order to support the creation of a good rapport between the group (Roulston, Demarrais and Lewis 2003). This was extremely successful in building group bonds around the topic of discussion (i.e. reduction), with participants chatting, laughing and exchanging stories.

At the start of each focus group participants were presented with an information sheet, consent form, schedule and a short questionnaire asking for their name, age, gender, level of education, ethnicity, income and about their decision (when and why) to participate in the campaign. These responses helped in categorising and grouping participants and in providing comparisons with the survey sample.

The focus group discussions used a semi-structured style, enabling the co-construction of knowledge and data (Roulston, Demarrais and Lewis 2003). Probes were used for elaboration, clarification and completion to ensure data validity and the gathering of pertinent information (King 2011). After informal conversation, there was a brief introduction by the facilitator with an overview of the nature of the discussion, why individuals had been invited to participate, group norms (e.g. that there were no correct answers and that participants should respect each other) and additional pertinent information. A simple question – asking participants what food they would have brought to share had the discussion been a pot luck – was then used to initiate the conversation. This aimed to help participants feel more at ease and to introduce them to the topic by discussing food in a social context. It also provided insights into participants dietary habits, including taste preferences, reliance on convenience food and perceived cooking abilities.

The overall schedule encouraged the discussion of potentially difficult and/or sensitive information during the later phases (Cassell and Symon 2004), beginning with information that was likely to be more positive. Participants were thus given the opportunity to present themselves and their chosen diet in a positive light before being asked about barriers. The questions also became increasingly specific and used Krueger and Casey (2000)'s ordering to build comfort throughout the process and ensure participants were 'primed' for the key questions. Questions were designed to be simple sentences that are easily understood and treat participants as the 'experts' (Jenkins *et al.* 2010; Cassell and Symon 2004).

After introductions, a set of questions were asked with flexibility of wording, ordering and the use of additional prompts (as necessary). Ordering was aimed to feel natural and allow for an easy transition between questions. At times, specific questions did not need to be asked if participants had already discussed the topic. The use of open-ended questions and a low amount of conversational structure supported the emergence of individual perspectives and specific experiences and opinions (Cassell and Symon 2004). Following introductions, participants were asked an introductory question: *How did you end up participating in the campaign?*, whereby discussion was focused on the motivators and events leading up to participation and experiences while participating in the campaigns. Two transition questions were then asked, focusing on the experience of reducing AFP consumption: *What was it like trying to eat less meat or go veggie or vegan?* and specific sources of support: *Were there any particular resources, people or anything else that really helped you?* Then, three key questions, beginning with a discussion of present dietary habits: *Since you first decided to reduce or eat vegetarian or vegan, how has your diet changed?* and the identification of particular challenges: *What did you find most difficult about eating less meat or going vegetarian or vegan?* Provided barriers were written on flash cards by the facilitator and confirmed with the group during the discussion.

The final key question took the form of a group activity, to support the creation of group cohesion and norms. Building on Kitzinger (1994)'s use of a card-sorting activity to elicit responses (see Figure 3.1, below), after creating a list of various obstacles to reduction, participants were

instructed to establish, as a group, an order from non-barriers (i.e. opportunities) to those that were the most obtrusive. A set of standardised terms (see 'Topics', Appendix 2) was used to facilitate comparison between focus groups and with survey responses, with necessary adaptations to reflect the particular discussions and experiences shared in each group. After the pilot focus group, it was determined that key concepts not identified in the group discussion (e.g. taste, cost or awareness) should be incorporated to ensure each group had the opportunity to reflect on these elements.

Figure 3.1 Sample ordering of barriers determined by focus group participants



In this example, Health (far left) was categorised as a non-barrier, with Identity neutral and, increasing in severity of barrier perception from left to right: Social (Family); Awareness (own, of how awful everything is); Social (other's misconceptions, reactions, etc.), Habits, New Foods / Novelty, Taste; Social (having a community, knowing others going veg / vegan / reducing); and Awareness (of reasons to go veg/vegan/reduce), Own motivation, Knowledge (what/how to cook, etc.), Convenience / Time

The ordering of barrier categories was done collaboratively with prompts, as necessary, by the facilitator. As such, members were encouraged to reflect on their own experiences, while also imagining the experiences of others. Individual stories naturally emerged and were contrasted during the ordering process. The treatment of participants as 'experts' was furthered in this scenario, as they were providing the categories for the researcher to note and creating a finished product that the researcher recorded (via photograph). Focus groups concluded with the opportunity to share additional insights, stories or information with the group, which some used to share specific resources (e.g. a particular vlogger) or to give feedback to the research process or campaign.

3.5.3 Focus group data analysis

Qualitative data analysis was conducted using Nvivo 11. As mentioned in 3.5.2, a note taker recorded the ordering of speakers during focus groups, which was used to assist in the transcription process. Thematic analysis was then used to identify key concepts. A draft set of themes was established through initial analysis, which were then reviewed and collated into specific categories and concepts. For instance, themes included references to conceptions that veg*ns are 'awkward' or 'fussy' or that veg*nism is 'difficult', 'easy' or a 'fad'. Themes also reflected elements of timing (e.g. post-transition or pre-transition), 'sacrifice' / 'priorities' or discussions of veg*n ethics. The finalised list of themes was created after revisiting each transcript and ensuring common coding and the identification of all pertinent themes trough an iterative process (Bryman 2004). Themes deemed unrelated to the research questions, unnecessary or unclear were removed, such as 'reduction' – a theme that was determined to be too general.

Additional methods were used to avoid an over-reliance on quotations that can mask important elements within any qualitative research (Back 2007). Notes were taken immediately following each focus group, which were reviewed and added to during transcription and data analysis. These included descriptions of each participant, which were used to create a data matrix to provide an overview of participants and position them in relation to relevant themes, such as whether their reduction had occurred or was occurring gradually or suddenly. This mechanism served to support visibility throughout the data analysis process (Nadin and Cassell 2004).

Findings within focus groups were then used for data triangulation with the two other sources of data (see 3.4 and 3.6). This allowed these areas to be used for comparison and to build off one another, with the qualitative components adding additional insights and depth to the quantitative data. For instance, discussions about the cost of a veg*n diet supported the inconsistency in reporting on this potential barrier within the survey, providing possible sources of mixed opinions (see 8.5).

3.6 Staff Interviews

The final stage of data collection (from June of 2017 to July of 2018) was the conducting of semi-structed interviews and follow-up conversations with staff members from each campaign (n=13). Interviews were an opportunity to gain further insights into campaign design, planning and techniques. This assisted in analysing reducers' journeys by understanding what specific information they received from campaigns and why. It also allowed for data validation and cross-checking between focus group and staff participants. Staff interviews were conducted informally at the individual's place of work, wherever possible, or over Skype. They also present opportunities to increase understanding of campaign goals, target audiences and other specific components. Interviews lasted for up to one hour. Two interviews (Viva3 and AA2) were conducted through a series of e-mails, per the staff members' requests. After completing a consent form and information sheet, interviewees were asked about the organisation through which the campaign was run, the design of the campaign, campaign participants and their motivations, running the campaign, support for participants, campaign effectiveness and the campaign's future.

Additional questions were used to compare staff responses to those of participants, including asking about opportunities and barriers for reducing AFP consumption, as well as about how they envision the reduction process. Where necessary, follow up questions were asked via e-mail for further clarification. Interviews were not formally analysed but were used to inform the understanding of the campaign's design and techniques and for additional areas of triangulation with the two other data sets (e.g. potential participant motivators). Follow up e-mails and calls were also carried out throughout the research process to ensure accuracy of data, including opportunities to review, edit and add to campaign descriptions (Chapter 4). Staff are identified by the organisation from which they originate, followed by a number: Animal Aid (AA1-2), Animal Equality (AE1-4), CreatureKind (CK1), Friends of the Earth (FOE1-2), Part Time Carnivore (PTC1) and Viva! (Viva1-3).

Additional information about participating organisations and campaigns was gathered through the review of pertinent materials and data. This included analysing the sign-up process,

communications sent by the campaigsn, their websites and other relevant published materials. For the iAnimal campaign, a five-hour participant-observation in December of 2016 at a UK university was also included (see 4.3). While the material of other campaigns was available in print and on-line, the central component of the in-person element necessitated an observation for a more complete understanding of the campaign process. Campaign data was used to better understand and evaluate participants' relationships with the campaign and the type of information they were receiving over time. An overview of this information is included in Chapter 4.

3.7 Research Ethics

Research design, analysis and final write-up have all been carried out to the highest ethical standards, including full compliance with the Data Protection Act (Great Britain 1998). All components of the research process have upheld the main ethical principles of research first set forth by Diener and Crandal (1978) and data has been obtained fairly and lawfully through the distribution, review and signing of detailed consent and information forms to all research participants. Each survey began with a detailed information sheet explaining why the person was invited, the purpose of the project, what exactly was being asked of them, how the data would be used and how their confidentiality would be preserved. These were also distributed to focus group participants and staff member interviewees prior to commencing data collection. Participants had the opportunity to ask questions and were given the researcher's contact details for additional questions or to retroactively withdraw consent.

As stated, minimal sociodemographic information has been collected and was selected based on areas of importance identified in previous research. As the data 'controller', the researcher has ensured that all data is stored safely and securely in a password-protected folder within a password-protected computer for which only the researcher has access. All names have been anonymised, with a record of pseudonyms and names stored separately in a locked filing cabinet. All data will be destroyed once it is no longer needed.

During focus groups, the use of a separate note taker (trained by the researcher in data protection laws and research ethics) helped to ensure accuracy of data and that the note taker was not working in a dual capacity as facilitator. 'Respondent validation' and 'member checking' (Torrance 2012) were also utilised during focus groups and interviews to provide clarification on any potential points of confusion. Focus groups and interviews were held at locations that aimed to maximise privacy, ease, familiarity and comfort. Meals and, where necessary, free event entry, were also provided as partial compensation and to help participants feel comfortable and relaxed.

The initial project design, surveys and focus group questions have all been constructed with consultation from participating organisations, who have had the opportunity to consult on campaign-related research goals, information that may be of particular use to them and how collaboration would work best for their organisation. In recognition of the time contributed by campaign staff, each participating organisation received a complimentary presentation and report at the end of the research project, which outlines key findings and recommendations. These components have also served to ensure research findings are available to 'the widest possible public audience' (Torrance 2012, p.112). Staff have also had the ongoing opportunity to consult the researcher for specific data or recommendations.

3.8 Limitations

Responses and analysis should be understood and interpreted through the lens of this particular sample and population. Participants are from campaigns with two different goals – reduction and veganism – where the majority of reduction participants (97%) were in an environmentally-based campaign, while vegan campaign participants all engaged in animal protection (91.1%) or food-related (8.9%) campaigns.

Another potential bias that must be considered due to the longitudinal nature of the study is nonresponse bias (Friedman *et al.* 2017). To minimise retention bias impacting response rates, individual reduction was used as a basis, instead of comparing average consumption levels at each

point, as discussed in 3.4.3. Thus, reduction levels from zero to six months were calculated for only those who completed both surveys. This method minimises retention bias and increases the validity of inter-point comparisons.

As mentioned previously, the use of a single lottery prize and the particular distribution methods (i.e. repeated invitations on different days to each survey with the mention of the raffle in the subject line) were utilised to assist in minimising nonresponse bias. The potential influence of nonresponse bias was evaluated by comparing dietary categories and means for all initial respondents used in longitudinal analysis (n=1,538) to initial responses from only those who completed each wave (see Table 3.6, below). As expected, there is a minimal amount of bias, with participants completing the second (three month) and third waves more likely to consume or plan to consume a vegetarian diet and less likely to plan to be a meat reducer. Respondents to later waves also tended to be consuming lower average amounts of AFPs, by category.

Table 3.6 Comparison of wave 0 responses by survey month participation

	All	1 month	3 month	6 month
Current consumption				
Vegan	5.18%	5.93%	7.59%	5.36%
Vegetarian	21.90%	22.62%	25.29%	26.05%
Pescatarian	11.67%	13.10%	11.48%	13.22%
Meat reducer	43.28%	41.79%	39.30%	40.04%
Non-reducer	17.97%	16.55%	16.34%	15.33%
Planned consumption				
Vegan	13.66%	14.05%	16.80%	13.66%
Vegetarian	19.67%	20.33%	22.39%	22.58%
Pescatarian	11.18%	12.14%	11.00%	13.09%
Meat reducer	47.12%	43.79%	42.08%	41.75%
Non-reducer	8.37%	9.69%	7.72%	8.92%
Reported consumption				
Red meat	0.53	0.47	0.43	0.41
White meat	0.49	0.38	0.37	0.34
Dairy	2.75	2.77	2.72	2.80
Eggs	1.01	0.96	0.94	0.96
Fish[5]	0.61	0.55	0.52	0.53
Meat	0.92	0.76	0.71	0.68
Meat & Fish	1.42	1.23	1.13	1.12

[5] When reporting fish consumption, this dissertation refers to the consumption of fish and seafood.

An additional important factor to consider is the potential impact that participating in the research project could have on one's dietary habits. The act of planning and committing to not consume or consume less meat may increase the likelihood of such a change occurring (Carfora, Caso and Conner 2017; Zur and Klöckner 2014). Through survey participation, the act of reporting one's current, previous and planned habits could provide an opportunity for planning and reflection. This could ultimately lead to a greater likelihood to then achieve such plans. This is an important consideration when using findings to consider or discuss reduction trends and success.

However, this is unlikely to be a substantial influencer, particularly when the nature of these campaigns is likely to include elements of dietary reflection through the act of changing one's habits. In addition, some campaigns ask for specific goals (i.e. PTC and LEB) and all three vegan challenges included a final e-mail encouraging the continuation of a vegan lifestyle. For instance, an e-mail at the end of the GVC month told participants: 'I'm sure many of you will be starting to think about whether you'd like to carry on being vegan when the Challenge is over. Of course, we really hope that you will and if you want to extend your vegan lifestyle … we'd be more than happy to advise you on how to do that'.

In any research project social desirability bias is an important consideration, whereby participants may engage in 'satisficing', attempting to provide the answers that they believe are viewed as socially desirable (Kaminska and Foulsham 2013). Participants may feel that there is a desire for them to report lowered dietary rates and may therefore do so. Staff members may also feel the need to present their organisation in a positive light. All of these elements were considered during the analysis process and questions were designed to be simple, straightforward and conversational in nature to minimise bias, in addition to creating a sense of comfort through engaging in casual conversation and maintaining an informal setting. The use of an on-line survey to collect dietary data and degree of motivators and barrier perceptions may be one mechanism to reduce bias, as has been demonstrated by Gittelman *et al.* (2015). In addition, the inter-person nature of comparison has been designed to minimise the potential influence of such biases.

Within the focus group setting, as discussed in 3.5.1, the act of censoring or attempting to uphold perceived norms may, at least in part, be a positive component of the project, as it presents an opportunity to reveal and discuss otherwise hidden norms that may exist within a reduction mindset. In addition, the use of triangulation through the mixed-methods approach allows for further cross-checking. For instance, two focus group participants who self-identified as vegetarians were revealed to be practicing pescatarians by previously provided survey data.

Chapter 4 What: strategies employed by meat reduction and vegan campaigns in the UK

4.1 Introduction

This chapter discusses the structure and content of participating campaigns in order to better understand the manner in which reduction is promoted, as well as how campaign content, goals and structure may influence perceptions and dietary changes. This establishes the campaign context in which the reduction process occurs, including the initial decision to reduce and to participate in a campaign. Campaigns generally do not have specific target audiences aside from those aiming to reach university students. They also primarily focused on psychological capabilities, physical opportunities and reflexive motivation, with few mechanisms to address automatic motivation or social opportunities.

Table 4.1 Overview of campaigns

Campaign	Mechanism	Longevity	Message	Content	Audience
CreatureKind Commitment	On-line pledge	Long term	Reduction	Religion	Christians, church congregations
Great Vegan Challenge	On-line sign up	One month	Vegan	Animal Protection (mainly)	General, mainly those already interested
Great Vegan University Challenge	On-line sign up	One month	Vegan	Animal Protection (mainly)	University students
iAnimal	Virtual Reality	Long term	Reduction	Animal Protection	Mainly university students
Let's Eat Better Pledge	On-line pledge	Long term	Reduction	Environment	General, mainly those already interested
Part Time Carnivore	On-line pledge	Long term	Reduction	Environment (mainly)	Heavy meat eaters, especially university students
30 Day Vegan	On-line sign up	One month	Vegan	Food	Current supporters, others who might be interested

4.2 Animal Aid's Great Vegan and Great Vegan University Challenges

Animal Aid (AA) was founded in the UK in 1977 with a mission to expose and 'prevent exploitation of animals' and 'promote, generally, a lifestyle which does not involve the abuse of animals' (Animal Aid n.d.). In addition to promoting veganism, the group also works on a variety of other animal-related issues, including horse racing, hunting and the use of animals in research. AA1, a campaigner who has run The Great Vegan Challenge (GVC) and Great Vegan University Challenge (GVUC) since they first began, described their history. He explained that the GVC has run every November since 2012 to promote a vegan lifestyle, with the challenge's timing aiming to coincide with World Vegan Month. Participation has grown each year, from roughly 800 participants in 2012 to over 2,500 in 2016. Promotion occurs through social media, leaflets and Animal Aid's own communications (including a physical quarterly newsletter, regular e-mails and social media). A 2016 poll of GVC participants conducted by AA indicated that nearly one-half had found out about the campaign through Facebook.

Figure 4.1 The Great Vegan Challenge logo



In 2015, the GVUC, which occurs in February, was added as an additional campaign to specifically target university students, AA1 explained. He described the decision to create a specific campaign for this particular group:

Figure 4.2 The Great Vegan University Challenge



> Students are a kind of a good group to … work with on vegan issues. … They're often away from home for the first time; they're suddenly in charge of their own dietary choices and they … have a lot more control over their lives than they've ever had before. They're also often open to new ideas and open to experimenting … and often people … form life-long habits when they're students. I mean, that's when I went vegan, when I was a student. Most of the guys who work here went vegan when they were students … and [GUVC] also tackled some of the particular problems that students have, so in terms of limited cooking facilities, short-low budgets … [we] tailor our materials a bit more.

However, while the GVUC started with 1,600 participants in its first year, only 412 people signed up in 2017, which AA1 believed may be due to the recent popularity of the Veganuary campaign (Veganuary 2017), which occurs the month before. In late 2017, Animal Aid decided that it would not be continuing the GVUC campaign.

Aside from the focus on university students by the GVUC, the campaigns do not have specific target audiences and instead cast 'a fairly broad net' through their Facebook advertisements and promotional videos (AA1). Through a brief initial survey on dietary habits, those already following a vegan diet are excluded from the campaign. Though the organisation is ultimately focused on preventing animal suffering, as AA1 stated, 'I don't really care why people go vegan, so long as they do'. Thus, promotional material referred to multiple motivators for transitioning to a vegan diet: (a) affordability; (b) environmental impact; (c) healthfulness, including references to vegan athletes; (d) animal suffering; and (e) taste, as a 'great way to expand your culinary horizons'. Thus, the campaigns try to reach as many people as possible through a variety of different types of messages. Rather than using a 'one size fits all approach' they recognise that 'different things inspire different people' (AA1). Most promotion is, however, focused 'on animal-related issues' (AA1).

AA1 reported that the campaign seemed to draw 'a real mix' of participants, ranging from those who are 'almost vegan' to 'absolute full on carnivores. … They eat meat and little else'. AA1 estimated that about eighty percent of participants were women. Though they have not investigated participants' motives for signing up, AA1 stated that some are likely to view the GVC as 'a challenge', simply wanting 'to see if they can' complete the month, while others may have already been considering a vegan lifestyle, with the concept 'playing on their mind for a while'.

All participants were able to join a Facebook group, where the occasion for former and current participants to ask questions, share information and recount individual experiences provided 'peer-to-peer support' (AA1). According to AA1, this was one of 'the most positive' elements that came out of the campaign and had the potential to build 'that sense of community and doing something together with people, even if you never meet them', including for those who

participated in the challenge previously to provide help and support for current participants. Each campaign also has its own website that includes an area entitled 'Why Vegan', a selection of recipes, an 'Agony Aunt' frequently asked questions section and an area to order free resources, including posters, leaflets and booklets.

Provided material generally pertained to psychological capabilities and physical opportunities. The main component of the websites are daily blog posts shared during the challenges and occasional posts outside of the month. Blog posts primarily focused on physical opportunities (sixteen GVC posts, 51.6%) and psychological capabilities (58.1%) by providing recipes and information about vegan products and where they could be purchased. Of the 31 GVC posts, eleven (35.5%) addressed reflective motivation, particularly through posts in the second half of the month, such as: 'Fishing for the truth' (day 10), 'Why don't vegans eat honey?' (day 17), 'More than just food' (day 23), 'What about the environment?' (day 24), 'Leather, silk and wool' (day 25), 'Ethical meat, milk and eggs' (day 28) and 'Animals and Emotions' (day 29). Of the sixteen GVUC posts, four (25%) were about reflective motivation, including the GVC posts from days 17, 23, 24 and 28.

There were also some additional components addressing social opportunities, including 16.1% of GVC posts: 'Being the vegan host (and guest)' (day 4), 'Vegan fairs and festivals' (day 16), 'Meeting vegans' (day 19), 'The Save Movement, a new kind of activism' (day 26) and a follow-up about a trip for GVC participants (day 14). The trip was to an animal sanctuary for rescued farm animals, providing the chance to 'meet other participants' (social opportunities), connect with rescued animals (reflective motivation) and 'try some delicious vegan food' (psychological capabilities). The GVUC included one post addressing social opportunities — 'Social vegans'.

The initial blog post for the GVC, 'A vegan gold age', included multiple elements: social opportunities (demonstrating the growth and normalisation of veganism), physical opportunities (links to newly-available vegan alternatives) and psychological capabilities (links to recipes). Subsequent posts were generally more focused on a specific topic, such as vegan cheese options or tips for hosting a vegan dinner party. A post on day six shared information about where to find key

nutrients (calcium, vitamin B12, omega-3 and vitamin D). Day seven, 'Budget Veganism', provided tips and links to websites about finding and preparing inexpensive vegan food.

AA1 reported that communications aimed at starting with practical information before moving into 'more philosophical aspects' (i.e. reflective motivation). Participants in both the GVC and GVUC also received a weekly e-mail with recipes, upcoming vegan events (an opportunity to increase their social opportunities) and a summary of recent blog posts. For those without access to the internet a printed copy and additional recipes were mailed out each week. A final e-mail encouraged participants to continue with a vegan lifestyle and provided additional links to events, news and blog posts. Before the start of the GVC and GVUC, participants also received a welcome pack in the mail that included a list of upcoming vegan-related events over the next few months, ten tips to get started and 'Your Guide to Going Vegan'. A welcoming letter also included Animal Aid contact information and encouraged participants to call for additional 'one-to-one help' and support if needed. The Guide provided support for participants' physical opportunities and psychological capabilities through recipes, nutritional information and resources about vegan products and where to find them, as well as some reflective motivation (e.g. 'What's wrong with milk?'). It also provided information about specific ingredients to avoid (e.g. whey and gelatine), 'Tasty alternatives' for different AFPs and information about vegan alcohol.

Based on feedback from GVC participants, the campaign was rebranded as the 'Summer Vegan Pledge' in 2018 and now takes place in June. AA2 described the change as occurring for three reasons. First, 'many [participants] were concerned that [the GVC] was so close to Christmas and the holiday season that it would be too much of an adjustment to make when they would be surrounded by family and friends eating animals, especially when they had previously joined in'. Secondly, he described the 'amazing success' of Veganuary, which may be attributable to low turnout for the GVUC in its final year. Finally, AA2 described the benefits of the summer as a time for a dietary transition: 'The summer seemed to be the perfect time to switch to in order to engage students and young people; students are home from university and thus generally have less money

worries, and young people are off school so there is less restriction in terms of money and food'. In its first year (2018), the new Summer Vegan Pledge had 3,642 sign ups, a new Animal Aid record.

4.3 Animal Equality's iAnimal

Animal Equality is an international animal protection organisation that was founded in 2006 in Spain, before expanding to seven other countries and launching in the UK in 2009. AE2 described Animal Equality as:

> A very pragmatic vegan organisation, so although we never endorse eating of animal products, … we embrace reducetarianism. … You might have a better chance of getting eighty people to reduce than eight to go vegan. So, we really are non-judgmental and welcome every step that people take on the road to a vegan diet.

The organisation has focused exclusively on farmed animals since 2015 and in 2016 began the iAnimal campaign, which is a virtual reality (VR) film, described as 'a unique immersive experience in the lives of farmed animals' (Animal Equality). In March of 2016 the iAnimal campaign was first launched with a VR film from the inside of an industrial pig farm, documenting the production process from birth to slaughter. The footage is taken from farms and slaughterhouses and aimed at showing best practices within industrialised animal agriculture (AE1). A second film was added in December that depicts broiler (i.e. meat) chickens, such that participants are given the opportunity to choose between the two videos. Following the recruitment period Animal Equality also launched a dairy cow film.

The creators of the films attempt to recount the experiences of the animals and, in so doing, other animals raised for animal-based foods in factory farms (see Figure 4.5, p. 93). In this way, the films may be viewed as a type of visual ethnography, a form of 'socially active technology' or, as Kien (2008) has dubbed the genre, 'technography'. The iAnimal experience is a strategic attempt not simply to get into the mindsets of the non-human animals featured, but to get into the mind-sets of those observing the film. This physical disruption is also a mental disruption, one that may directly engage with a person's carnistic experience of the world.

The video itself is completely immersive, as participants are unable to look away without removing their headset and are wearing sound-cancelling headphones (see Figure 4.3, below). After watching the film, participants are able to engage in a one-on-one conversation with a staff member or volunteer, where they can ask questions and receive additional information about farm animal conditions, meat reduction and veg*nism. AE1 explained that the film can serve as an ice breaker, such that 'it gives you an extra layer of credibility' during conversations

Figure 4.3 Participants viewing iAnimal film



According to AE1, iAnimal is primarily shown at universities, but also on high streets, at political conferences, in office buildings and at vegetarian, vegan and green festivals. Events are always pre-arranged with institutional approval. As AE2 explained, the focus is primarily on millennials, especially university students. At events the Animal Equality stall will feature two large billboards, stating 'Do you dare try virtual reality…' '…And discover what the meat industry hides from you?' (see Figure 4.4, below). On the billboards and in their social media advertisements, Animal Equality features 'reaction shots' (AE2) of people viewing the VR film. The videos are narrated by celebrities, who then appear in advertisements and on their website, where the film can also be viewed and downloaded.

The human element is central to the iAnimal experience through the prolonged conversations that regularly occur after individuals view the VR film. When engaging with participants, AE1 explained that staff and volunteers aim to 'get into their mindset', while not pushing them or forcing any particular views or lifestyle changes on them. During observation, this dynamic was evident, including the language used when offering leaflets, stating, 'Don't know if

you're interested'. Conversations during the observation period appeared friendly, with volunteers and staff maintaining open body language, prolonged eye contact and using calm tones of voice.

Figure 4.4 iAnimal stall with student volunteer and staff member.



The campaign itself is specifically targeting reflective motivation, though also potentially addressing social opportunities by featuring a celebrity narrator and providing an opportunity to talk one-on-one with someone following a plant-based diet (i.e. Animal Equality staff or a volunteer). Participants 'aren't coerced' to watch the VR film and are able to approach the stand of their own accord, where they are given a disclaimer and 'can choose to go in to the farm … or not' (AE1). Participants are also given the opportunity to sign a 'Love Veg' pledge and commit to reducing their consumption of AFPs.

A 'Make a Difference' leaflet is also on the stall and offered to most participants, featuring information about reflective motivation (animal protection, health and the environment), vegan celebrities, plant-based cooking, vegan products and a 'step by step' guide to stop eating AFPs over a three-week period (psychological capabilities). A 'food plate' provides information about 'a balanced plant-based diet', including protein, iron and calcium sources. A 'fitter and healthier' section also features vegan athletes and provides information about the benefits of a plant-based diet for a variety of medical conditions. The 'step by step' guide has participants substitute plant-

based alternatives for poultry in the first week, followed by fish, meat and sausage, and finally, in week three, milk and eggs. The leaflet concludes with information about shopping, eating out and the impacts of animal agriculture on animals and the environment.

Figure 4.5 Description of '42 days in the life of chickens', iAnimal's video on chicken production

A female celebrity, Kat Von D, introduces the video, stating the viewer will see 'what the meat industry doesn't want you to see … through the eyes of the animal'. The narrator starts: 'Your first day of life'. The camera is level with the chicks, with the viewer looking directly into their eyes before looking up to workers tipping over carts of chicks and dumping them on the ground like debris.

New scene: The chicks are bigger now, but there is still some space to move. Cut to a new scene: The chicks look nearly full grown. The narrator explains they are only a few weeks old, but they look old and decrepit. They cannot walk and are missing feathers. As the viewer turns around, they can see additional animals in states of distress, including a chicken lying on her back, unable to get up, with her legs splayed out behind her. Her eyes blink, but her body is still. The next scene is still in the same location and the narrator explains that the birds will experience respiratory problems from the ammonia in their faeces. Two more scenes show increasing over-crowding as the chickens continue to grow rapidly and lose the ability to move.

The following scene is in the dark, with men carrying handfuls of chickens upside-down by their legs. The camera itself is picked up by one of the workers, as the viewer hears loud squawks from the birds.

The final scenes open with a man in a red cap turning around and grabbing full-grown chickens from yellow crates, hanging their legs by metal hooks. The chickens continue to make distressed sounds and flap their wings. The man has headphones around his neck and blood on his apron. The chickens seem to have stopped moving as the hooks sway.

Cut away to the same location, where the hooks are now moving along a conveyer belt. The chickens, in turn, glide across a pool of electrocuted water, where they are made unconscious, and the man is now holding a bloody knife. He is wearing the headphones as he takes each chicken by the head and slits her throat. Blood squirts on him and he winces, steps back and wipes it away. One chicken has flapped her wings to avoid the water and is fully conscious when he slits her throat. The video ends with the narrator's request: 'Keep meat off your plate'. The screen goes black.

The video is four minutes and 32 seconds long.

Those who sign up to the pledge also receive regular e-mails over four weeks that primarily focus on psychological capabilities. E-mails are sent every day for the first five days and then decrease in frequency, with a total of thirteen e-mails. Nearly all e-mails (77%) addressed psychological capabilities by providing recipes and information about plant-based alternatives and tips for eating out (i.e. where to go and what to order). The second e-mail addressed automatic motivation, specifically habits: 'by gradually making small changes and recreating your favourite flavours and textures, you'll miss meat less and less'. Two also addressed social opportunities by describing veganism as 'a growing trend', including quotes from vegan celebrities on day eight and providing tips for 'spreading the message' and meeting 'other like-minded people' on day 25.

4.4 CreatureKind's CreatureKind Commitment

CreatureKind was founded in 2015 and focuses specifically on connecting the reduced consumption of AFPs with Christian belief and theology. CK1 explained that their focus was on providing resources and opportunities for Christians to 'take animals seriously as a topic of Christian interest', by reflecting on modern relationships with animals (including the treatment of farm animals) and representations of human-animal relationships within Christian theology.

Figure 4.6 CreatureKind logo



CreatureKind includes an on-line CreatureKind Commitment (CKC), which this group of participants (n=4) completed, and includes three dietary changes: the reduced consumption of AFPs, sourcing high welfare AFPs when consuming them and 'continu[ing] to consider how our Christian faith should be put into practice in relation to other ways we treat our fellow animal creatures' (CreatureKind n.d.) CK1 explained that those who sign the pledge receive monthly e-mails, which highlight CreatureKind blog posts (reflective motivation) and provide some social opportunities (i.e. upcoming events) and psychological capabilities (i.e. recipes).

According to CK1, CreatureKind works at three levels: institutional (with Christian organisations and churches), educational and in the wider community (i.e. the on-line pledge). Educational materials, comprised of a free six-week downloadable course to be held in small church communities, have been available since mid-2017 (CreatureKind n.d.). Each weekly session is one hour long and begins with a thirty-minute shared vegan meal, before engaging with the topic through videos, short readings and discussions. The course does not have a clear message for participants, such as a commitment to eat less meat. As CK1 explained:

> It is fairly open-ended. … It's not trying to strongly steer people to a particular position. It's basically the question of: Hey, if we did take animals seriously as topic of Christian interest, what would that mean in terms of how we understand their place in Christian belief and what that means in terms of our practice toward them in relation to the consumption of farmed animals?

CK1 clarified that by asking these questions and thinking about the topic of animals and Christianity in a social context for six weeks and having participants 'respond to that juxtaposition' between the treatment of animals and Christian doctrine, they would be likely to 'change their minds'. Participants from the CreatureKind Commitment may have also engaged in the course, though this was unable to be verified.

4.5 Friends of the Earth's Let's Eat Better Pledge

Friends of the Earth (FOE) is an environmental organisation and charity that was originally founded in 1969 and has branches in 75 countries, including starting in England, Wales and Northern Ireland in 1971.[6] FOE2 explained that FOE was originally reluctant to address meat reduction but that, in recent years, 'the issue is much less kind of toxic than it used to be'. In 2013, FOE set up Eating Better, a collaboration between numerous non-profits 'working together to help people move towards eating less meat and dairy foods and more food that's better for us and the planet' (Eating Better n.d.). During the same year, FOE launched a national competition in collaboration with People and Planet and the National Union of Students for students to create a campaign promoting meat reduction to their peers. The winner designed and ran Meat Free May (MFM) in 2014. FOE continued the campaign for another two years, during which time FOE2 described it as having 'taken on a life of its own, with #MeatFreeMay being used without us pushing it'.

Figure 4.7 Let's Eat Better Pledge logo



The Let's Eat Better Pledge (LEB) was initially designed to provide support and resources for MFM participants to continue reducing their consumption of AFPs once the month was over. FOE1 explained, 'What do people do after Meat Free May? You don't want [them] just to go back

[6] FOE Scotland is a separate organisation.

to their normal ways', describing instead 'trying to create this journey for people'. LEB includes a commitment to three components: eating less junk, eating more plants and consuming less meat. There are four choices for the less meat option: eating 'a bit less' but 'better quality', eating 50% less but better quality, eating 'a lot less' but better quality or 'going/staying meat-free' (Friends of the Earth n.d.)

The LEB pledge is promoted through social media, including Facebook ads and Twitter, and on the FOE website. However, FOE1 states that FOE noticed a 'self-perpetuating loop', with the same participants re-making identical commitments each year to participate in MFM, then LEB, rather than 'getting support and moving on to the next level'. FOE held the last MFM in 2016 and are currently designing a new meat reduction campaign specifically targeting university students. After the research period, the pledge was somewhat altered, focusing less on environmental reflective motivation and more on overcoming 'perceptions of it being boring' to eat meat-free meals and supporting the development of 'skills to cook different things' (FOE1).

FOE1 described a disconnect between AFP consumption and its environmental impacts experienced by some staff members and others within the environmental movement as a significant barrier for FOE:

> If we can't persuade people within the movement that it's worth taking action— … I still eat some fish … and today I ate some mozzarella for lunch. … The fact that we have vegans here who are really persuaded that veganism is the way forward, but we have a whole range of other dietary beliefs and we have people who have no dietary beliefs and will complain at me quite a lot if I talk about vegetarian food, does make you kind of think, "If there are people here who are generally intelligent human beings and completely understand all the environmental and climate and animal welfare arguments for this and can generally cook … [and they] are not those people that have children, that are in their seventies, they don't change. So, what is it?"

Specifically, while meat reduction or veg*nism were clearly linked to the goals and mission statements of many other organisations, FOE's staff and supporters may have been less united on the importance and relevance of the issue.

During May, FOE also featured a meat-free recipe each day on Twitter and blog posts with additional information and recipes. After MFM and for those signing up to LEB, participants

received monthly e-mails that could include a recipe, an action to take (e.g. encouraging a local restaurant to have a meat-free option) and a news item. Thus, the primary focus was on psychological capabilities, but with some reflective motivation. From its first year, MFM advertising and communications have focused more on 'exploring' new foods, moving away from its original conception of a 'challenge' (FOE1) where participants could receive sponsors.

4.6 Part-Time Carnivore

Part-Time Carnivore (PTC) was first launched in March of 2010 and, according to PTC1, it aimed to address the 'gap' in dietary perception that can exist between veg*ns and meat eaters, creating 'a way for meat eaters to talk to other meat eaters about eating less meat'. The organisation is primarily run through a website, where participants can pledge to have zero to six 'meaty days' per week (see Figure 4.9, right) (Part-Time Carnivore 2017). Thus, rather than striving for a drastic change, 'the point is just to get people to change their habits a little bit' (PTC1) and, instead of focusing on the number of meat-free days, the emphasis is on the number of days participants will consume meat. Though PTC is based in the UK, it is international in reach and, as of September 2017, had participants from 34 other countries. Individuals can join teams, which are primarily university or location-based, and the public pledge allows participants to be searched for by name. This could create occasions to strengthen participants' social opportunities.

Figure 4.8 Part-Time Carnivore logo, featuring 'Chompy', the face of the campaign



Figure 4.9 Part-Time Carnivore pledge, where participants can select 0 to 6 'meaty days'.



PTC's primary focus is on environmental motivators, with information on the site emphasising the relationship between meat consumption and the environment. Some additional provided information addresses health motivators. As PTC does not employ any staff, the campaign has ebbed and flowed in its promotion and the amount of information provided to participants. At times, participants will receive monthly e-mails to further their reflective motivation, such as information about antibiotic resistance or the impact of beef consumption on a particular part of the world. PTC has also been promoted through social media and at environmental and university events.

4.7 Viva!'s 30 Day Vegan

Viva! was founded as a charity in 1994 and is focused on promoting a vegan lifestyle through hosting events and festivals, providing guides and its on-line 30 Day Vegan campaign (Viva! 2016). The charity also conducts undercover investigations and though its focus is on exposing and reducing the suffering of animals, the organisation and 30 Day Vegan (3DV) also promote a vegan diet for environmental and health reasons. The provision of vegan recipes is a focus of Viva! and 3DV, including running a Vegan Recipe Club through their website and on Facebook. 3DV first began in 2014, with Viva2 explaining that initial aims were to target those 'who wanted to try vegan', who may have already been vegetarian or even a meat reducer. Viva2 was surprised by the number of meat eaters and reducers, as well as the large proportion of those already following a vegan diet who had participated in the campaign. The launch of 3DV occurred immediately after the first occurrence of Veganuary (see 4.2), aiming to provide a source of additional support for their participants.

Figure 4.10 30 Day Vegan logo



According to Viva3, 3DV is promoted through social media, including through: Facebook, Twitter, Instagram, vegan and food-related printed magazines, Viva!'s vegan festivals around the UK, promotional business cards, their website and Viva!'s in-house print magazine. Promotional materials were 'all about the food', using 'food imagery which looks delicious' (Viva3). This is in line with the goal of the campaign, which Viva1 described as: 'at least some minds have been opened to the fact that vegan food is … not bland, not boring. It's really quite tasty'.

Viva1 explained that the campaign's promotional strategies aim to attract current supporters and 'reach a new audience', including both those who are already veg*n and those who still consume meat, trying to 'squash any myths about veganism being unhealthy'. While the campaign does, generally, cast a broad net, Viva3 described two specific groups that Viva! targets for the campaign. Firstly, 'education facilities, including higher education and universities'. Secondly, a new section was to be created for their 2017 re-launch after the research period, 'a "Can't Cook, Won't Cook" version [of 3DV] which uses store-bought, pre-made ingredients. Perfect for those who aren't interested in cooking' (Viva2).

3DV does not have a set month, so participants' vegan month started the day after signing up. Each day participants received an e-mail featuring a vegan celebrity, information about a specific nutrition topic (e.g. cholesterol or the health benefits of consuming tomatoes), recipes for all three daily meals (including two options for dinner) and a ready-made snack item. Thus, participants' physical opportunities and psychological capabilities were addressed. The campaign was re-formulated after the research period, with a new website and set of e-mails launched in late 2017, which are focused on being, according to Viva2, 'more visually oriented', including more short recipe videos and images.

4.8 Conclusions

Most material provided by campaigns appear to emphasise psychological capabilities, physical opportunities and reflective motivation (see Table 4.2, below) by raising awareness and

providing information about the 'how' of identifying and creating veg*n foods through recipes, instructions about reading labels, new vegan products and tips for eating out. They also present opportunities to increase awareness of motivating factors, potentially addressing the 'awareness gap' (Bailey, Froggatt and Wellesley 2014) and creating opportunities to overcome cognitive dissonance through addressing the 'meat paradox' (Loughnan, Haslam and Bastian 2010). Elements of psychological capabilities addressed by campaigns – including concerns about the health implications of transitioning toward a more plant-based diet and information about finding and preparing veg*n foods – are likely to be important barriers for reducers (Corrin and Papadopoulos 2017).

As most information is based on one-way communication via e-mails and blog posts – with the exception of the iAnimal campaign – there may be minimal occasions to address social opportunities within campaigns. However, social elements were still incorporated in most campaigns, to varying degrees, through: iAnimal's one-on-one conversations, the CreatureKind course, GVC and GVUC's Facebook groups, the GVC trip to an animal sanctuary and the sharing of relevant upcoming events and the use of veg*n celebrities and role models by multiple campaigns. Presenting information in a social context (e.g. using a celebrity quote) that may contradict previously — or currently — held omnivorous norms could help to create or reinforce new norms of consuming. As cultural and social elements are likely to be key to achieving dietary change (Macdiarmid, Douglas and Campbell 2016; Carlisle and Hanlon 2014), these elements may be particularly important for campaigns to incorporate.

Messaging was generally not tailored to a particular audience. Though the GVUC, PTC and iAnimal campaigns target university students, only the GVUC is designed and marketed exclusively for this population. This group, in particular, was generally seen as likely to transition, as AE2 explained: 'University is ideal because they're on their own for the first time, cooking their own meals. So, they're at that stage when they're in control, … where they can make a decision to stop eating meat'. However, the absence of other target audiences may hinder campaigns' abilities to reach additional populations (Schösler, de Boer and Boersema 2012), potentially leading to a

reliance on ‘low hanging fruit’ (i.e. those most likely to participate in reduction campaigns and to change their diets).

Table 4.2 Campaign content by BCW category

Campaign	Content
GVC & GVUC	Primarily psychological capabilities & physical opportunities, but also with social opportunities and reflective motivation
3DV	Physical opportunities and psychological capabilities
CKC	Reflective motivation, also some social opportunities and psychological capabilities
PTC	Reflective motivation, also potentially social opportunities
iAnimal	Reflective motivation, also some psychological capabilities and minimal automatic motivation and social opportunities
LEB	Psychological capabilities and minimal reflective motivation

Chapter 5 Who: overlapping but distinct groups of reducers

5.1 Introduction

Campaigns may use a variety of techniques to encourage participation and dietary change. The campaigns discussed in Chapter 4 represent many of the largest reduction campaigns in the UK and incorporate a variety of different recruitment strategies (e.g. Facebook advertisements, stalls and/or in-person recruitment) and intervention techniques (e.g. virtual reality, pledges or challenges). Their participants represent an important population for understanding who is recruited through such mechanisms. This chapter draws on data from the initial survey (n=1,587) to analyse the sociodemographic (5.2) and dietary characteristics of participants, including current (5.3) and planned (5.4) consumption and variations within campaign samples (5.5). Findings indicate a disproportionate percentage of white, affluent, university educated and female individuals. While vegan campaign participants (see Table 5.2, p. 104) tended to include more young adults and vegetarians, reduction campaigns (see Table 5.3, p. 105) drew a greater proportion of male participants and those who had yet to reduce. Additional variations further indicate that campaigns may be reaching distinct but overlapping populations.

5.2 Sociodemographic characteristics

The sociodemographic trends exhibited within campaign populations are a key component of who campaigns are reaching. In addition, variations within campaigns can suggest that certain tactics or types of messages may be more effective in reaching specific groups. Within this sample, sociodemographic characteristics suggest significant overlaps within campaign populations, which predominantly included white women with Bachelor's or postgraduate degrees who were in the top 40% of UK earners.

As seen in Table 5.1 (below), the majority (89.9%) of the initial survey respondents had participated in either the Great Vegan Challenge (n=470, 29.6% of sample) or the Let's Eat Better

Pledge (n=957, 60.3% of sample), with the remainder in: the Great Vegan University Challenge (n=20), iAnimal (n=32), Part-Time Carnivore (n=56), 30 Day Vegan (n=48) or the CreatureKind Commitment[7] (n=4). Almost one-half of focus group participants (n=33) were from the LEB (n=15), while nearly one-third had participated in the 3DV (n=10), which included the four individuals at the 3DV-only focus group. The remaining participants had participated in the GVC (n=3), iAnimal (n=4) or PTC (n=1).

Table 5.1 Sociodemographic characteristics of survey sample

	n	%
Gender		
Male	309	19.8%
Female	1,243	79.6%
Other	10	0.6%
Highest level of educational attainment		
No formal	38	2.5%
GCSE, O-Level, CSE, A-Levels or High School	476	30.6%
Vocational	150	9.7%
Bachelor's	545	35.1%
Postgraduate	340	21.9%
Other	5	0.3%
Ethnicity		
White	1,457	96.3%
Black or Minority Ethnic (BMe)	56	3.7%
Income		
1st – 3rd income decile	306	24.2%
4th–7th income decile	387	30.6%
8th–10th income decile	570	45.1%
Age		
18-24	237	14.9%
25-34	226	14.2%
35-44	255	16.1%
45-54	345	21.7%
55-64	314	19.8%
65+	210	13.2%
Total*	**1,587**	

** Total includes the 4 CKC participants.*

[7] As mentioned in 3.4.4, due to the low sample size for the CreatureKind Commitment, participants have been included in general analysis but will not be individually analysed.

Table 5.2 Sociodemographic characteristics of vegan campaign participants

	Great Vegan Challenge	Great Vegan University Challenge	30 Day Vegan	Total
Gender				
Male	9.6%	0.0%	8.3%	9.1%
Female	89.8%	100.0%	89.6%	90.1%
Other	0.7%	0.0%	2.1%	0.8%
Education				
None	2.2%	5.3%	0.0%	2.1%
Secondary	41.5%	68.4%	34.0%	41.8%
Vocational	9.5%	0.0%	8.5%	9.0%
Bachelor's	29.9%	21.1%	38.3%	30.3%
Postgraduate	16.7%	5.3%	19.2%	16.5%
Other	0.2%	0.0%	0.0%	0.2%
Ethnicity				
White	97.5%	88.2%	93.3%	96.8%
BMe	2.5%	11.8%	6.7%	3.2%
Income				
1st – 3rd	22.8%	58.3%	23.1%	23.8%
4th–7th	31.7%	33.3%	38.5%	32.4%
8th–10th	45.5%	8.3%	38.5%	43.8%
Age				
18-24	16.2%	100.0%	22.9%	19.9%
25-34	18.1%	0.0%	8.3%	16.5%
35-44	19.4%	0.0%	12.5%	18.0%
45-54	26.0%	0.0%	25.0%	24.9%
55-64	15.7%	0.0%	29.2%	16.4%
65+	4.7%	0.0%	2.1%	4.3%
Total	**470**	**20**	**48**	**538**

Table 5.3 Sociodemographic characteristics of reduction campaign participants

	iAnimal	Let's Eat Better	Part-Time Carnivore	Total
Gender				
Male	28.1%	25.3%	22.2%	25.2%
Female	71.9%	74.2%	75.9%	74.2%
Other	0.0%	0.5%	1.9%	0.6%
Education				
None	0.0%	2.9%	0.0%	2.6%
Secondary	25.0%	25.2%	20.4%	25.0%
Vocational	0.0%	10.6%	5.6%	10.0%
Bachelor's	40.6%	36.3%	57.4%	37.5%
Postgraduate	34.4%	24.6%	16.7%	24.6%
Other	0.0%	0.4%	0.0%	0.4%
Ethnicity				
White	92.9%	96.2%	94.3%	96.0%
BMe	7.1%	3.8%	5.7%	4.0%
Income				
1st – 3rd	44.0%	22.7%	40.9%	24.4%
4th–7th	28.0%	30.0%	25.0%	29.8%
8th–10th	28.0%	47.3%	34.1%	45.8%
Age				
18-24	65.6%	8.6%	48.2%	12.4%
25-34	21.9%	11.6%	33.9%	13.1%
35-44	6.3%	15.7%	7.1%	15.1%
45-54	3.1%	21.4%	7.1%	20.1%
55-64	3.1%	23.2%	3.6%	21.6%
65+	0.0%	19.5%	0.0%	17.8%
Total	**32**	**957**	**56**	**1,049***

** Total includes the 4 CKC participants.*

5.2.1 Country of residence

Over 95 percent of participants were from the UK, with the second largest group coming from the United States (n=16). Other respondents covered all six populated continents, but with no more than seven participants per country. By campaign, 2.8% of GVC participants, 5.3% of GVUC participants, 3.1% of iAnimal participants, 4.4% of LEB participants, 1.9% of PTC participants and 16.7% of 3DV participants were from outside of the UK. Within focus groups all participants were UK residents, though 12.1% were originally from outside of Britain.

5.2.2 Gender

79.6% of participants identified as female, 19.9% as male and 0.6% as other. Reduction campaigns had a higher proportion (just over one-quarter) of male participants. iAnimal had the highest proportion of men, at 28.1%, while 25.3% and 22.2% of LEB and PTC participants, respectively, were male. Vegan campaigns included just under one in ten male participants, with 9.6% of 3DV, 9.5% of GVC and none of the GVUC participants identifying as male. FOE's survey of LEB participants in 2017 found 25% of participants to be male, while GVC and PTC staff estimated that 11.1% and 22.4% of participants during the data collection period, respectively, were male (see 3.4.4). 6.1% of focus group participants identified as male (one 3DV and one LEB participant) and one as other.

5.2.3 Age

Participants included those from every age group, ranging from eighteen to 92 ($\bar{x}$=45.4), with key distinctions between different campaign populations. The GVUC, iAnimal and PTC, all of which specifically target university students, had the lowest average participant ages: $\bar{x}$=19.9, 25.3 and 27.5, respectively. All of the GVUC participants were 18 to 24-years-old, along with 65.6% of iAnimal participants. 48.2% of PTC participants were 18 to 24-years-old and 17.9% were over 34. 3DV ($\bar{x}$=43.4) participants were slightly older than those in the GVC ($\bar{x}$=41.6). Just over one-quarter of GVC participants were in the 45 to 54-year-old group and fewer than five percent were over 64, while 3DV included a mix of primarily those who were 45 to 64 (54.2%) or 18 to 24 (22.9%).

The LEB population was, on average, the oldest ($\bar{x}$=49.6) and included the largest proportion of participants over 64 (19.5%), who comprised less than 5% of other campaigns' samples. FOE's own survey found that 27% of participants were over 65 (see 3.4.4) (Friends of the Earth 2017). In the broader UK population, this group comprises 18% of all individuals (Office for National Statistics 2017a). In the LEB, fewer than ten percent were under 25 and the majority were 45 and over (64.2%). Compared to those in the survey, participants in focus group were slightly

younger, on average ($\bar{x}$=36.3), with most belonging to the 25 to 34 (34.4%), 45 to 54 (25.0%) and 18 to 24-year-old (21.9%) age groups.

5.2.4 Ethnicity

Participants were more than four times less likely to be of colour (3.7%, including 3.3% of UK respondents) than the wider UK population (15.2%) (Office for National Statistics 2017b). Due to the small numbers of participants of colour, ethnic groups have been divided into white individuals and people of colour (POC). Of the fifteen US respondents, one-third were POC. Ethnic breakdown was similar for vegan (96.8% white) and reduction (96.0% white) campaigns. Specifically, 97.5% of GVC, 88.2% of GVUC, 93.3% of 3DV, 96.2% of LEB, 92.9% of iAnimal and 94.3% of PTC participants identified as white. FOE's 2017 survey also found 96% to be white (see 3.4.4). POC tended to be somewhat younger ($\bar{x}$=39.2) than white ($\bar{x}$=46.0) participants, with 18 to 34-year-old participants more than twice as likely (5.8%) than those 55 and over (2.6%) to be of colour. 90.9% focus groups participants also identified as white.

5.2.5 Income

Participants were, on average, higher earners than the general UK population, with the median income between the sixth and seventh decile ($\bar{x}$=6.4). By campaign, the GVC ($\bar{x}$=6.5), LEB ($\bar{x}$=6.6) and 3DV ($\bar{x}$=6.3) had the populations with the highest average income, as well as the highest proportion of participants in the highest three deciles, while those targeting university students had lower average incomes: $\bar{x}$=3.7 for GVUC, 4.8 for iAnimal and 5.5 for PTC. 28.7% of GVC participants were in the highest income decile and 45.5% in the highest three deciles. Within the LEB, 25.3% were in the highest income decile and 47.3% in the highest three deciles. Focus group participants earned slightly higher incomes, on average ($\bar{x}$=7.4), with 59% in the top three income deciles.

5.2.6 Education

More than one-half of participants had a Bachelor's (35.1%) or postgraduate (21.9%) degree, making them almost twice as likely to have attended university than the wider British population (Office for National Statistics 2012). Only 2.5% did not have any formal qualifications, compared to 23% of the broader population. Of the vegan campaigns, 3DV participants were the most likely to have a degree (57.5%). GVUC participants were unlikely to hold degrees (26.3%), likely due to the campaign's target population being those currently in university. All of the 3DV participants had some form of formal qualification. For the GVC, 46.6% held degrees (29.9% had Bachelor's and 16.7% postgraduate degrees), while only 2.2% had no formal qualifications.

Reduction campaign and focus group participants tended to be somewhat more highly educated than vegan campaign survey respondents. Within the survey sample, those in reduction campaigns were almost one-third more likely to hold a degree, with 46.8% of those in vegan campaigns and 62.1% of those in reduction campaigns having a Bachelor's or postgraduate degree. In particular, 75.0% of iAnimal participants, 60.9% of LEB respondents and 74.1% of PTC participants held a degree. Within focus groups most participants held a Bachelor's (33.3%) or postgraduate (33.3%) degree. Only one focus group participant did not have any formal qualifications.

5.2.7 Summary

Overall, there was an overrepresentation of white, female, university educated and high-earning participants. Reduction campaigns had a somewhat larger proportion of male participants and those with university degrees, while vegan campaigns had a higher percentage of participants under 35. Variations also emerged between campaigns specifically targeting university students (PTC, iAnimal and GVUC), which included more participants under 25 and who were not high-earning. This suggests that campaigns are not attracting a high proportion of men, POC, those earning low incomes or people without university degrees. The lack of a specific target audience and the broad approach to promotion used by campaigns may contribute to the high proportion of

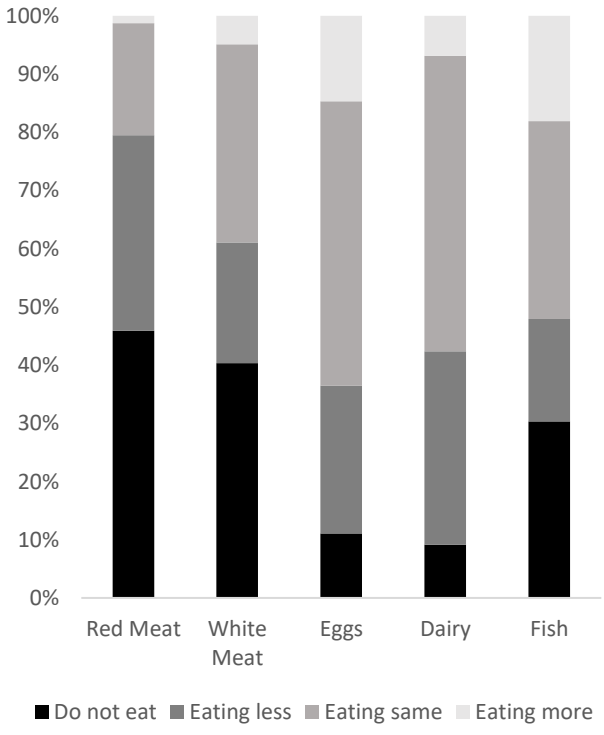
those who may already be most likely to consider participating in a reduction campaign and, perhaps, feel that those of similar demographic characteristics will be well-represented within the campaign population.

5.3 A majority already reducing: current consumption

In addition to common sociodemographic trends within the campaign samples, current dietary habits presented general trends within the sample population and across campaigns. Most participants reported already reducing their consumption of meat and/or other AFPs and they were most likely to report red meat reductions and least likely to report eating less fish or eggs.

Reduction appeared to follow a particular ordering, as seen in Figure 5.1 (below). Most participants reported having reduced their red meat consumption over the previous six months (46.1% not consuming and 33.3% reducing), with white meat reduction somewhat less popular (40.6% not eating and 20.7% reducing), followed by dairy (9.2% and 33.2%, respectively), fish (30.6% and 17.9%) and eggs (11.2% and 25.5%). In the initial survey, reported average consumption over the previous two full days was the same for red and white meat ($\bar{x}$=0.5 servings for each) and slightly higher for fish ($\bar{x}$=0.6). Participants also reported consuming, on average, 2.8 servings of dairy and 1.0 servings of eggs. In total, the average participant consumed 0.9 servings of red and white meat (hereafter, meat) and a total of 1.4 servings of meat and fish. Participants were most likely to report having increased their consumption of fish (18.0%) or eggs (14.4%) over the previous

Figure 5.1 Dietary changes over the previous six months at zero months



six months, though a further 5.0% reported the same for white meat and 6.7% for dairy. Only 1.3% stated that they had increased their consumption of red meat.

There were also noticeable dietary trends based on sociodemographic categories, particularly for the consumption of red meat and fish. Those in the highest income groups (eighth through tenth deciles) reported consuming, on average, slightly more red meat ($\bar{x}$=0.61) and fish ($\bar{x}$=0.60) over the two days prior than those in the middle (fourth through seventh deciles, $\bar{x}$=0.43 and 0.56, respectively) and lowest (first through third deciles, $\bar{x}$=0.46 and 0.53) income groups. Those with higher educational attainment generally ate more red meat, with those with no formal education averaging 0.32 servings and those with a Bachelor's or postgraduate degree averaging 0.56 and 0.55 servings, respectively. Vocational degree holders also reported high levels of red ($\bar{x}$=0.65) and white ($\bar{x}$=0.56) meat consumption, as well as the most total servings of meat ($\bar{x}$=1.1). Those without any formal education or vocational training had the highest white meat consumption ($\bar{x}$=0.57 and 0.56, respectively), while those with graduate degrees had the lowest ($\bar{x}$=0.42).

On average, younger and male participants reported eating more red meat. Male participants in particular reported higher rates in every AFP category, with the greatest difference between male and female participants occurring for red meat ($\bar{x}$=0.67 and 0.49, respectively). 25 to 34-year olds also ate the most red meat ($\bar{x}$=0.65 servings), followed by 35 to 44-year-olds ($\bar{x}$=0.57) and 45 to 54-year-olds ($\bar{x}$=0.56). The 55 to 64-year-old group ate the least red meat ($\bar{x}$=0.40). Older groups also ate more fish, with the 65 and over group having the highest consumption rates ($\bar{x}$=0.74). 18 to 24 and 25 to 34-year-olds averaged 0.48 servings. 18 to 24-year-olds reported the lowest egg ($\bar{x}$=0.78) and dairy ($\bar{x}$=2.27) consumption, while other groups averaged 0.86 to 1.24 and 2.70 to 2.92 servings, respectively.

5.3.1 Current dietary group

Most participants reported already reducing their consumption of AFPs, though over sixty percent of participants consumed meat and almost one-fifth (18.0%) were non-reducers. The

largest group of consumers was meat reducers (43.0%), whose main distinction from non-reducers was their red meat consumption (see Table 5.4, below). It was exclusively due to lowered red meat consumption ($\bar{x}$=1.28 for non-reducers and 0.72 for meat reducers) that average total meat ($\bar{x}$=2.04 and 1.46, respectively) and total meat and fish ($\bar{x}$=2.69 and 2.16) consumption were lower for current meat reducers than non-reducers.

Table 5.4 Average reported consumption over a two-day period (in servings) within current dietary groups

	Red meat	White meat	Fish	Dairy	Eggs	Meat	Meat + Fish	n
Non-reducers	1.28	0.89	0.76	3.13	1.12	2.04	2.69	284
Meat Reducers	0.72	0.84	0.82	2.92	1.10	1.46	2.16	676
Pescatarians	0	0	1.05	2.84	1.11	0	1.11	185
Vegetarians	0	0	0	2.71	0.88	0	0	348
Vegans	0	0	0	0	0	0	0	81
All	**0.52**	**0.50**	**0.60**	**2.75**	**1.00**	**0.93**	**1.43**	**1,574**

Meat reducers seemed to be more likely to be consuming meatless meals than non-reducers. They were more likely to report having eaten no meat (27.8%) or meat and fish (14.2%) over the two-day period than non-reducers (15.2% and 8.8%, respectively). While most non-reducers consumed two or more servings of meat (61.7%), meat reducers were most likely to have consumed one or fewer servings (61.0%). This could indicate that meat reducers are more likely to consume meals that do not contain a meat element (including fish), rather than simply consuming lower quantities of meat per meal. It also suggests the potential formation of new dietary norms, as will be explored further in Chapter 6.

Though participants may have been most likely to reduce their meat (particularly red meat) consumption, doing so also increased their propensity to eat less of other types of AFPs. For instance, meat reducers were approximately four times as likely as non-reducers to report having reduced or eliminated dairy (53.7% of meat reducers and 13.2% of non-reducers), eggs (49.8% and 13.8%, respectively) or fish (63.9% and 17.0%) from their diets over the previous six months. Current vegetarians consumed slightly less dairy than meat eaters or pescatarians, suggesting that

they are not using these foods as replacements for meat or fish. Pescatarians, however, ate the most fish and may be likely to use this as a meat replacement.

In support of Ipsos MORI's survey (The Vegan Society 2016), within this sample vegetarians and vegans were slightly younger on average ($\bar{x}$=42.8 and 40.6, respectively) than pescatarians ($\bar{x}$=46.1), meat reducers ($\bar{x}$=47.1) and non-reducers ($\bar{x}$=45.2). Women were more likely to be vegan (5.9% of women and 5.0% of men) or vegetarian (23.3% and 17.1%) than men, with men more likely to be meat eaters (59.4% of women and 67.2% of men). POC were nearly twice as likely to already be vegan (8.9% of POC and 4.9% of white participants).

5.3.2 Summary

Participants were generally reducing their consumption of AFPs prior to engaging in campaigns, with 18.0% being non-reducers and just over 40% being categorised as meat reducers. Meat reducers and non-reducers exhibited similar average rates of consumption in all areas but red meat. Overall, red meat was the most likely for participants to report having already reduced, followed by white meat and dairy, while fish and eggs were the most likely to have had their consumption increased. Meat reducers were also more likely than non-reducers to consume zero or one serving of meat, suggesting that they may be adopting some veg*n dietary norms (i.e. eating meatless meals). Additional distinctions emerged around sociodemographic categories, such as men eating the most red meat and being the most likely to be meat eaters.

5.4 Gradual changes and an emphasis on red meat: planned dietary changes

As with previous reductions, red meat was the most common area for planned reductions. Participants also generally pursued gradual (e.g. non-reducer to meat reducer) changes, rather than planning to newly abstain (e.g. meat reducer to vegan). The primary planned dietary shifts were non-reducers planning to become meat reducers and vegetarians planning to become vegan.

Nearly all participants planned to either not eat (52.4%) or to reduce (37.6%) their red meat consumption, while nearly three-fourths reported the same for white meat (45.7% to not consume and 28.7% to reduce). Planned dairy reduction (20.5% and 37.6%, respectively) was the next most popular, followed by fish (36.4% and 16.0%) and eggs (20.4% and 24.8%). Participants were most likely to plan to increase their consumption of fish (17.6%) or eggs (7.2%). 32.6% of planned meat reducers, 19.7% of planned non-reducers and 5.9% of pescatarians planned to eat more fish. 7.5% of non-reducers also planned to increase their consumption of white meat, compared to just 2.9% of meat reducers. Planned meat reducers were more likely to plan to decrease their dairy (35.3%) or egg (18.0%) consumption than non-reducers (19.6% and 5.7%, respectively).

Most participants did not plan to shift dietary category (see Table 5.5, below), with those who were planning to do so generally making gradual (e.g. non-reducer to meat reducer) changes that did not incorporate eliminating new types of AFPs (e.g. meat reducer to vegan). Fewer than ten percent of meat eaters planned to become veg*n or pescatarian, though meat reducers were more than three times as likely to plan to become vegan (4.5%), vegetarian (3.0%) or pescatarian (4.9%) than were non-reducers (1.1%, 0.7% and 1.8%, respectively). 77.0% of planned vegetarians and 71.9% of planned pescatarians were already following such a diet, while 77.5% of planned meat reducers reported already reducing their meat consumption.

Table 5.5 Planned consumption within current dietary groups

		Planned consumption					
		Vegan	Vegetarian	Pescatarian	Meat Reducer*	Non-reducer	**Total**
Current consumption	Vegan	4.9%	0.1%	0.1%	0.1%		**5.1%**
	Vegetarian	4.9%	17.1%	0.1%	0.2%		**22.2%**
	Pescatarian	1.8%	1.5%	8.5%	0.1%		**11.8%**
	Meat reducer	1.9%	1.3%	2.1%	33.3%	4.3%	**42.9%**
	Non-reducer	0.2%	0.1%	0.3%	13.3%	4.1%	**18.0%**
	Total	**13.6%**	**20.0%**	**11.1%**	**46.9%**	**8.5%**	**100.0%**

** For current pescatarians and veg*ns, meat reducer refers to those who plan to start eating meat*

n=1,566 Missing: 21

The main planned shifts in dietary category were vegetarians planning to become vegan (21.9% of current vegetarians) and non-reducers planning to become meat reducers (73.8% of

current non-reducers). Current non-reducers were the only group where the majority aimed to shift dietary category, including 3.6% who planned to become pescatarian or veg*n. Planned vegans were the only group where the majority (64.3%) were not already following such a diet, with 35.7% being current vegetarians, 13.2% pescatarians, 14.1% meat reducers and 1.4% non-reducers. Overall, four percent of the sample reported not reducing their meat consumption and not planning to do so in the next six months, including 0.4% of GVC participants, 6.3% of iAnimal participants, 7.1% of those in the PTC and 5.9% in the LEB.

Within focus groups, where sampling strategies targeted individuals who were more likely to already be following a veg*n diet (3.5.1), participants were able to express more general and long-term goals than may have emerged within the survey. Of this group, most expressed agreement with veganism as an end goal. One meat reducer explained: 'I'd like to move toward a vegan lifestyle' (MA1). Just over one-half of focus group participants were already attempting to or already following a vegan diet, while 9.0% were vegetarian, 6.1% were pescatarian (though identified as vegetarian) and the remaining 30.3% were meat reducers. Of those who were not already attempting to consume a vegan diet, over one-third discussed a desire to move toward such a lifestyle. Thus, over two-thirds of focus group participants were already or were interested in moving toward a vegan diet.

For some focus group participants, however, veganism or vegetarianism were not the end goal, either for ethical or personal reasons. For instance, one meat reducer stated: 'I don't think total vegetarianism is the right direction' (BL1), describing the social value in high welfare meat:

> I'd rather buy good – a good market for well-produced, Compassion in World Farming's standards, locally produced meat, and producing a healthy meat like that than not buying it at all, … well-produced meat. I like to see animals roam. I have no problem if they're well looked-after and local slaughter house, all that kind of thing. Like I've got no objection with eating meat, but I just eat less of it.

Another participant, who had been vegetarian when he was younger but had since returned to eating meat, stated: 'I'm never gonna say I'm not going to eat meat again. It's there and I don't wanna put pressure on myself. … Maybe next year it could be, I'd be a total vegetarian' (BL3).

Reduction goals may shift over time, as with BL3, or individuals may possess a more substantial reduction goal but not have a clear timeline by which to meet it.

Average reported consumption for planned meat reducers was generally higher than for planned non-reducers, including for total meat ($\bar{x}$=1.75 and 1.14, respectively), total meat and fish ($\bar{x}$=2.48 and 1.79), red meat ($\bar{x}$=0.97 and 0.66), white meat ($\bar{x}$=0.90 and 0.63) and eggs ($\bar{x}$=1.15 and 0.91) (see Table 5.6, below). More than fifty percent of planned non-reducers reported having reduced their meat consumption over the past six months. As is explored further in 6.3.1, this suggests that, for many, meat reduction may be temporary or precede and/or follow a period of not reducing.

Table 5.6 Average reported consumption over a two-day period (in servings) within planned dietary groups

	Red meat	White meat	Fish	Dairy	Eggs	Meat	Meat + Fish	n
Non-reducers	0.66	0.63	0.81	2.97	0.91	1.14	1.79	133
Meat red.	0.97	0.90	0.84	3.00	1.15	1.75	2.48	737
Pescatarians	0.13	0.10	1.02	3.01	1.19	0.22	1.24	177
Vegetarians	0.03	0.05	0.06	2.96	0.94	0.07	0.13	313
Vegans	0.07	0.14	0.20	1.24	0.39	0.19	0.38	216
All	**0.52**	**0.50**	**0.60**	**2.75**	**1.00**	**0.93**	**1.43**	**1,576**

Dietary trends suggest that many of those planning a dietary change may have already begun to undertake steps to meet a future goal. For instance, those who were not currently, but planned to be vegan reported lower consumption of dairy ($\bar{x}$=1.91) and eggs ($\bar{x}$=0.61) than other groups ($\bar{x}$=2.96 to 3.01 for dairy and $\bar{x}$=0.91 to 1.19 for eggs). Planned vegetarians were also more likely to report plans to reduce or eliminate their dairy (66.1 % and 11.8%) or egg (54.2% and 15.3%) consumption than meat reducers (35.5% and 5.2%) or non-reducers (19.6% and 3.8%). Nearly sixty percent of those pursuing a pescatarian diet (who were not already) reported a pescatarian diet over the two-day period. Of those who were not but planned to follow a vegetarian diet, just under three-fourths did not report eating any meat, while just over one-half did not report consuming any meat or fish.

5.4.1 Summary

As with current reduction trends, planned red meat reduction was prioritised over white meat, which was in turn more prominent than that of other types of AFPs. These trends suggest a hierarchy of reduction that is further developed in Chapter 6 and may provide opportunities to update previous hierarchies developed over two decades ago by Beardsworth and Keil (1992) and Twigg (1981; 1979). Planned changes tended to be gradual, suggesting a reluctance or lack of desire to newly eliminate specific AFPs from one's diet. However, within focus groups, many meat eaters expressed a desire to eventually be vegan, suggesting that some continuing consumers may, ultimately, aim to become abstainers.

Planned meat reducers and non-reducers presented surprising trends, as the former were eating more of each type of AFP than the latter. Non-reducers were also likely to report having previously reduced. This suggests a temporary or cyclical nature to meat reduction that was not evidenced within abstainers. Two potential explanations may account for this trend. It may be that meat reducers are more likely to maintain omnivorous norms of consumption by continuing to consume meat, potentially inhibiting the adoption of new habits when they are not fully embracing a new dietary lifestyle (see 8.4). Ordinary consumption may continue to remain omnivorous, while veg*n consumption experiences may be abnormal or 'extra-ordinary' (Lai 2001), requiring further thought and planning. Secondly, the nature of a meat reduction goal may inhibit long-term behaviour change due to a lack of clarity. Monitoring whether one is reducing may be less clear and require further planning and tracking than abstention monitoring. The goal element that is central to behaviour change (Michie *et al.* 2014) may, for meat reducers, need further clarification and tools for monitoring or may be followed by a period of not reducing.

5.5 Dietary variation within campaign populations

As discussed in Chapter 4, the type of goal (i.e. reduction or veganism) and mechanism for disseminating information varied between campaigns. Variations are also evident within the dietary

characteristics of participants with, for instance, those in vegan campaigns more likely to be current or planned vegetarians than those in reduction campaigns (see Table 5.7, below).

Table 5.7 Average reported consumption over a two-day period (in servings) within campaigns

	Red meat	White meat	Fish	Dairy	Eggs	Meat	Meat + Fish	n
GVC	0.29	0.35	2.76	0.93	0.44	0.59	0.98	470
GVUC	0	0.2	1.6	0.65	0.3	0.2	0.5	20
iAnimal	0.44	0.29	1.47	0.43	0	0.71	0.41	32
LEB	0.65	0.59	2.91	1.08	0.74	1.13	1.76	957
PTC	0.96	0.61	2.42	1.14	0.57	1.38	1.72	56
3DV	0.25	0.28	1.29	0.52	0.13	0.48	0.59	48
All*	**0.52**	**0.50**	**0.60**	**2.75**	**1.00**	**0.93**	**1.43**	**1,576**

**Includes the 4 CKC participants.*

5.5.1 The Great Vegan Challenge (GVC)

Table 5.8 Average reported consumption over a two-day period (in servings): GVC

Red Meat	White Meat	Dairy	Eggs	Fish	Meat	Meat & Fish
0.29	0.35	2.76	0.93	0.44	0.59	0.98

The Great Vegan Challenge (GVC) (n=470) was composed of 41.9% current vegetarians, with the remaining participants being primarily pescatarians (19.4%) or meat reducers (26.7%) (see Table 5.9, below). 83.3% of participants reported having eaten no red meat ($\bar{x}$=0.3) and 76.6% had not consumed red or white meat ($\bar{x}$=0.3 for white meat and 0.6 for total meat) (see Table 5.8, above). 83.9% had consumed some dairy ($\bar{x}$=2.8) and 50.8% had consumed eggs ($\bar{x}$=0.9).

Table 5.9 Planned consumption within current dietary groups: GVC

		Planned consumption					
		Vegan	Vegetarian	Pescatarian	Meat Reducer*	Non-reducer	**Total**
Current consumption	Vegan	3.2%	0.2%	0.2%	0.0%		**3.7%**
	Vegetarian	9.5%	32.5%	0.0%	0.0%		**42.0%**
	Pescatarian	4.9%	3.9%	10.8%	0.0%		**19.6%**
	Meat reducer	3.9%	2.6%	2.8%	17.4%	0.0%	**26.7%**
	Non-reducer	0.6%	0.2%	0.9%	6.0%	0.4%	**8.2%**
	Total	**22.2%**	**39.4%**	**14.6%**	**23.4%**	**0.4%**	**100.0%**

** For current pescatarians and veg*ns, meat reducer refers to those who plan to start eating meat*
n=468, with 4 missing

As with the wider sample, the majority of GVC participants (70.1%) did not plan to shift dietary category, including 77.2% of vegetarians, 54.8% of pescatarians and 68.5% of meat eaters. Just under one-fourth of participants planned to be vegan, with nearly twice as many planning to be vegetarian (82.5% of whom were currently vegetarian). 27.2% planned to newly eliminate the consumption of certain AFPs (e.g. current pescatarian going vegetarian), while 23.8% planned to continue eating meat. 19.8% of pescatarians planned to be vegetarians in six months and 25.3% to be vegans. 22.6% of vegetarians planned to become vegan.

5.5.2 The Great Vegan University Challenge (GVUC)

Table 5.10 Average reported consumption over a two-day period (in servings): GVUC

Red Meat	White Meat	Dairy	Eggs	Fish	Meat	Meat & Fish
0	0.20	1.60	0.65	0.30	0.20	0.50

GVUC participants (n=20) ate the fewest average servings of red ($\bar{x}$=0), white ($\bar{x}$=0.20) and total meat ($\bar{x}$=0.20) and total meat and fish ($\bar{x}$=0.50) of any campaign (see Table 5.10, above). None reported eating red meat and 85.0% reported not consuming white meat. Fish consumption ($\bar{x}$=0.30) was slightly higher, on average, with two participants having consumed three portions. 76.2% reported consuming no meat or fish and 70.0% no eggs ($\bar{x}$=0.93), though over two-thirds had consumed some dairy ($\bar{x}$=1.60). Within this sample, 30.0% planned to follow a vegan diet, 35.0% vegetarian, 14.3% pescatarian and 19.1% to eat meat (see Table 5.11, below).

Table 5.11 Planned consumption within current dietary groups: GVUC

		Planned consumption				
		Vegan	Vegetarian	Pescatarian	Meat Reducer	**Total**
Current consumption	Vegan	5%	0%	0%		**5%**
	Vegetarian	15%	20%	0%		**35%**
	Pescatarian	5%	5%	10%		**20%**
	Meat reducer	5%	10%	5%	15%	**35%**
	Non-reducer	0%	0%	0%	5%	**5%**
	Total	**30%**	**35%**	**15%**	**20%**	**100%**

n=20, with 0 missing

5.5.3 iAnimal

iAnimal participants (n=32) consumed, on average, quantities more similar to those in vegan campaigns than to those in reduction campaigns (see Table 5.12, below). They consumed no fish and little red ($\bar{x}$=0.44), white ($\bar{x}$=0.29) or total ($\bar{x}$=0.71) meat. They were also more likely than other reduction campaigns to already consume a vegan (37.5%) or vegetarian (25.0%) diet. There were an equal number of meat reducers and non-reducers (18.8% for each).

Table 5.12 Average reported consumption over a two-day period (in servings): iAnimal

Red Meat	White Meat	Dairy	Eggs	Fish	Meat
0.44	0.29	1.47	0.43	0	0.71

With the exception of non-reducers becoming reducers, 12.5% planned to shift their dietary category in the next six months. Specifically, two of eight vegetarians and one of six meat reducers planned to become vegan and one meat reducer planned to become vegetarian. One of the six non-reducers did not plan to start reducing. Three-quarters of participants reported no red meat consumption and slightly more reported eating no white meat, with 71.0% having consumed neither. Just over 50% had consumed some dairy ($\bar{x}$=1.47) and 30% had consumed eggs. Most planned to reduce their dairy (28.1% to reduce and 43.8% to eliminate) and egg (12.5 and 56.3%, respectively) consumption.

Table 5.13 Planned consumption within current dietary groups: iAnimal

		Planned consumption				
		Vegan	Vegetarian	Pescatarian	Meat Reducer	**Total**
Current consumption	Vegan	34.4%	0%	0%		**37.5%**
	Vegetarian	6.3%	18.8%	18.8%		**25.0%**
	Meat reducer	3.1%	3.1%	3.1%	3.1%	**18.8%**
	Non-reducer	0%	0%	12.5%	6.3%	**18.8%**
	Total	**43.8%**	**21.9%**	**25.0%**	**9.4%**	**100.0%**

n=32, with 0 missing

5.5.4 Let's Eat Better Pledge

Table 5.14 Average reported consumption over a two-day period (in servings): LEB

Red Meat	White Meat	Dairy	Eggs	Fish	Meat	Meat & Fish
0.65	0.59	2.91	1.08	0.74	1.13	1.76

LEB participants (n=957) reported the highest levels of dairy (x̄=2.91), fish (x̄=0.74) and total meat and fish (x̄=1.76) consumption and the second highest for eggs (x̄=1.08), red meat (x̄=0.65), white meat (x̄=0.59) and total meat (x̄=1.13) (see Table 5.12, above). Overall, most participants were meat eaters (73.1%) and a slight majority (55.2%) reported having eaten some meat (23.4% ate one serving, 18.6% two servings and 13.2% three or more servings). 39.7% had eaten red meat and 41.0% white. Nearly all (91.2%) had eaten some dairy and 61.1% reported having consumed eggs (x̄=1.1). 60.4% planned to eat meat but reduce its consumption, with more planning to eliminate or reduce their red meat (49.7% and 35.6%, respectively) than white meat (33.5% and 28.1%) consumption. 3.1% planned to eat more white meat and 26.8% to eat more fish. Fewer than one-half planned to reduce (30.0%) or eliminate (9.0%) their consumption of dairy and fewer than one-fourth to reduce (10.1%) or eliminate (13.4%) their consumption of eggs or fish (10.1% and 13.4%, respectively). 10.9% planned to consume more eggs and 26.8% to increase their consumption of fish.

Table 5.15 Planned consumption within current dietary groups: LEB

		Planned consumption					
		Vegan	Vegetarian	Pescatarian	Meat Reducer	Non-reducer	**Total**
Current consumption	Vegan	3.7%	0%	0%	0.1%		**3.8%**
	Vegetarian	1.1%	10.6%	0.1%	0.2%		**12.0%**
	Pescatarian	0.2%	0.3%	8.4%	0.0%		**8.9%**
	Meat reducer	0.3%	0.3%	1.7%	43.2%	6.7%	**52.2%**
	Non-reducer	0%	0.1%	0.0%	17.0%	5.9%	**23.0%**
	Total	**5.3%**	**11.4%**	**10.2%**	**60.5%**	**12.6%**	**100.0%**

n=945, with 12 missing

Just over sixty percent of participants were either meat reducers planning to continue to reduce their meat consumption (43.2%) or non-reducers planning to eat less meat (17.0%) (see Table 5.15, above). With the exception of non-reducers becoming meat reducers, few participants (4.0%) planned to change dietary category. Most notably, 1.1% of all participants were vegetarians planning to become vegan (8.8% of current vegetarians) and 1.7% were meat reducers planning to become pescatarians (12.8% of all meat reducers).

5.5.5 Part-Time Carnivore

Table 5.16 Average reported consumption over a two-day period (in servings): PTC

Red Meat	White Meat	Dairy	Eggs	Fish	Meat	Meat & Fish
0.96	0.61	2.42	1.14	0.57	1.38	1.72

Of the campaigns, PTC participants (n=56) were the most likely to report having consumed meat (59.6%) and ate the highest levels, on average, of red meat ($\bar{x}$=0.96), white meat ($\bar{x}$=0.61), eggs ($\bar{x}$=1.14) and total meat ($\bar{x}$=1.38) (see Table 5.16, above). They consumed slightly less fish ($\bar{x}$=0.57) and total meat and fish ($\bar{x}$=1.72) than LEB participants. Planned reductions and increases were generally similar to the LEB population, though they were slightly more likely to plan to increase their consumption of white meat (3.6%) and fifty percent less likely to do so for fish (17.9%). Most did not plan to reduce their fish consumption, with 25.0% planning to eliminate its consumption and 14.3% to eat less. Nearly 90% had consumed dairy and 56.9% had eaten eggs. One-half of all individuals planned to either reduce their dairy consumption (33.9%) or stop consuming it entirely (16.1%), while fewer planned to reduce (19.6%) or eliminate (16.1%) their egg consumption.

Table 5.17 Planned consumption within current dietary groups: PTC

		Planned consumption					
		Vegan	Vegetarian	Pescatarian	Meat Reducer	Non-reducer	**Total**
Current consumption	Vegan	3.7%	0%	0%	0%		**3.6%**
	Vegetarian	5.5%	7.3%	0%	0%		**12.7%**
	Pescatarian	0%	1.8%	3.6%	0%		**7.3%**
	Meat reducer	0%	0%	3.6%	36.4%	5.5%	**45.5%**
	Non-reducer	0%	0%	1.8%	21.8%	7.3%	**30.1%**
	Total	**9.1%**	**9.1%**	**9.1%**	**60.0%**	**12.7%**	**100.0%**

n=55, with 1 missing

As with the LEB group, more than one-half of PTC participants were either meat reducers who planned to continue reducing (36.4%) or non-reducers who planned to start (21.8%) (see Table 5.17, above). With the exception of non-reducers becoming reducers, participants were unlikely to pursue a new dietary category (7.3%), with three of seven vegetarians planning to become vegan and one of four pescatarians planning to become vegetarian. PTC participants were the most likely to report having consumed any meat, meat or fish, red meat or white meat. Over the two-day

period, just over one-half reported eating some red meat, though slightly fewer reported eating some white meat. Overall, three-fourths were meat eaters and nearly sixty percent reported eating some meat over the two-day period. Roughly two-thirds of participants consumed meat or fish.

5.5.6 Viva! 30 Day Vegan

Table 5.18 Average reported consumption over a two-day period (in servings): 3DV

Red Meat	White Meat	Dairy	Eggs	Fish	Meat	Meat & Fish
0.25	0.28	1.29	0.52	0.13	0.48	0.59

3DV participants (n=48) were the most likely to plan to become vegan (see Table 5.19, below) and consumed the least dairy ($\bar{x}$=1.29) and eggs ($\bar{x}$=0.52) and the second least for most other categories (see Table 5.18, above). This group was slightly more likely than GVC participants to not consume red (81.3%, $\bar{x}$=0.25), white (87.0%, $\bar{x}$=0.28) or any (80.4%, $\bar{x}$=0.48) meat. Nearly nine in ten participants reporting consuming no fish ($\bar{x}$=0.13). 54.2% had not eaten dairy ($\bar{x}$=1.29) and 67.4% ate no eggs ($\bar{x}$=0.52).

Table 5.19 Planned consumption within current dietary group: 3DV

		Planned consumption					
		Vegan	Vegetarian	Pescatarian	Meat Reducer	Non-reducer	**Total**
Current consumption	Vegan	20.8%	0%	0%	0%		**20.8%**
	Vegetarian	29.2%	4.2%	0%	0%		**33.3%**
	Pescatarian	4.2%	0%	0%	0%		**4.2%**
	Meat reducer	14.6%	4.2%	2.1%	14.6%	2.1%	**37.5%**
	Non-reducer	0%	0%	0.0%	4.2%	0%	**4.2%**
	Total	**68.8%**	**8.3%**	**2.1%**	**18.8%**	**2.1%**	**100.0%**

n=48, with 0 missing

One-fifth of participants reported already eating a vegan diet when starting the month, while one-third reported eating a vegetarian diet (see Table 5.19, above). However, current meat reducers comprised the largest group at 37.5%, with an equal number planning to become vegan as those remaining meat reducers (38.9% of meat reducers for each). Only 4.2% ate meat and had not already reduced their consumption. Overall, 68.8% planned to be following a vegan diet in six months, including 42.4% of current vegetarians, 6.1% of pescatarians and 21.2% of meat reducers.

Of the sixteen vegetarians, 87.5% planned to become vegan. Both pescatarians planned to become vegan and the two non-reducers both planned to become meat reducers.

5.5.7 Summary

While all campaigns predominantly drew those who were already reducing and planned to continue, there are clear distinctions between populations. While the majority of 3DV participants planned to be vegan in six months, the majority in the GVC did not. Both groups have the same goal – for participants to become vegan (4.2 and 4.7) – but the GVC may serve to reach more who are not yet committed to such a change. The 3DV's more practical (rather than motivational) messaging, focused on psychological capabilities through recipes and finding vegan foods, may thus draw a majority of participants who are already interested in becoming fully vegan. Conversely, the PTC and LEB populations included a greater population of non-reducers, with those in the PTC eating more meat and being somewhat more likely to plan to increase their white meat consumption. LEB participants ate the most fish and were significantly more likely than those in other campaigns to plan to eat more. Both of these campaigns focus on meat reduction, with the PTC specifically targeting and reaching those who may eat the most meat and/or be the least likely to consider reducing. Ultimately, the type of messaging used seems to relate to different types of consumers.

5.6 Conclusion

Characteristics across the sample population reveal potential insights into who may be drawn to reduction campaigns in the UK and about the nature of reduction itself. Firstly, there was a lack of socioeconomic diversity in the participants of each campaign, with an overrepresentation of white, female, university educated and high-income individuals. POC were underrepresented in every campaign, comprising no more than seven percent in all but the GVUC and fewer than four percent of all participants. These demographic characteristics could be linked to the types of

messaging used and the distribution mechanisms, with the possibility that additional campaigns or a change in campaign messaging or strategy could further diversify the participant population (see 9.6).

Secondly, findings suggest a tendency toward gradual changes within a potential *reduction hierarchy*. Specifically, participants were most likely to have reduced or plan to reduce their consumption of red meat, followed by white meat and dairy, then eggs and fish. Participants were also most likely to plan to increase their consumption of the latter two. However, within this hierarchy veg*ns prioritised the abstention of white meat, followed by fish, over that of dairy or eggs. Where planned changes were reported, they tended to be gradual in nature. Participants were unlikely to plan to shift dietary category, with the main exceptions being vegetarians planning to become vegan (4.9% of all participants and 17.7% of current vegetarians). Other than non-reducers planning to become meat reducers, fewer than ten percent of participants in any campaign planned to shift dietary category. These components are expanded upon in the following chapter and in Chapter 9.

Finally, additional dietary trends within groups of consumers suggest variations within dietary groups. Pescatarians ate the most fish, suggesting that they may use fish as a meat-substitute. In addition, the primary distinctions between meat reducers and non-reducers was in their red and total meat consumption. This suggests that meat reducers, in line with the reduction hierarchy, may generally focus mainly or exclusively on eating less red meat. Meanwhile, vegetarians appear to be more likely than pescatarians or meat eaters to be reducing their consumption of dairy and eggs, suggesting that this group is not using dairy or cheese as a meat replacement. This will also be discussed further in Chapter 6.

While abstention goals and habits appeared to be consistent between past and planned consumption, develop further (e.g. vegetarian to vegan) or arise from past reductions (e.g. meat reducer to pescatarians), meat reduction was less consistent. Meat reduction may be viewed as more temporary or, without monitoring, it may be difficult to know if one is reducing. Without clear parameters it may also be unclear what qualifies as meat reduction. This lack of clarity is evidenced

within the literature, with, for instance, McMichael *et al.* (2007) and Porritt (2010) recommending the consumption of no more than 90 grams of meat per day and de Backer distinguishing between semi-vegetarians who 'strongly reduced [their] meat intake' and light semi-vegetarians who 'avoid meat one or two days a week' (De Backer *et al.* 2014, p.644). Other researchers have relied on self-identification as a semi-vegetarian or meat reducer (e.g. Timko, Hormes and Chubski 2012). Further clarification and a consensus on what characterises meat reduction could assist in creating long-term reductions, though additional components may also contribute to this trend, as is discussed further in the following chapters.

In addition to identifying trends within the sample, differences between campaign populations suggest the existence of different but overlapping populations, with variations in sociodemographic and dietary characteristics between campaign populations. Specifically, while some campaigns targeted and drew younger participants (PTC, iAnimal and GVUC), 3DV and LEB tended to have the greatest proportion of older participants. Reduction campaigns also tended to draw a somewhat higher proportion of men.

Findings suggest potential benefits of multiple campaign strategies, contributing to ongoing debates about the use of a singular or varied approach in changing dietary habits (e.g. Taft 2016; de Boer, Schösler and Aiking 2014; Schösler, de Boer and Boersema 2012). Ultimately, the existence of multiple campaigns may assist in drawing in different types of consumers. For instance, those who may not be interested in a vegan or vegetarian goal may still be willing to participate in a meat reduction campaign, as is evidenced in this sample. At the same time, most GVC participants did not plan to be vegan, while most did in the 3DV. As will be explored further in the following chapter and 9.5, campaigns may therefore serve different purposes, with those in the 3DV more likely to already be committed to a vegan diet and using the campaign as a way to increase their psychological capabilities (e.g. knowledge of finding and preparing vegan food). An analysis of dietary changes after the campaigns commence will explore how the variety of emergent trends at the campaign start persisted or changed with time.

Chapter 6 How: trends toward gradual, temporary reductions and more successful abstentions

6.1 Introduction

Trends first identified at the start of campaigns, including the propensity for continuing reductions over new abstentions within an AFP hierarchy (Chapter 5), continued throughout the six-month research period, while additional trends emerged over time. This chapter analyses broader dietary trends exhibited throughout the sample (6.2) and within planned dietary groups (6.3), as well as identifying key variations within campaign samples (6.4.1) and sociodemographic groups (6.4.2). The *reduction hierarchy* first discussed in the previous chapter builds on prior reduction orderings, including the 'hierarchy of status and potency' outlined by Twigg (1979, p.18) and Beardsworth and Keil (1992)'s typology of vegetarians. Specifically, red meat reduction was prioritised over that of white meat and dairy and all three over fish and eggs. Thus, the hierarchy supports current trends in British consumption, whereby meat and dairy consumption are decreasing but fish and egg consumption are not (Department for Environment Food and Rural Affairs 2017). Planned and actual increases to fish and egg consumption were visible throughout the research period. Findings support conceptions of reduction as generally occurring gradually, as was discussed in Chapter 5, which may include a series of steps through the reduction hierarchy.

Despite a propensity toward gradual changes, those pursuing the strictest abstention goals (i.e. veganism) were the most likely to successfully meet their goals, while meat reducers were the least likely to do so. Fewer than one-half of meat reducers were eating less meat after six months. The potential for meat reducers to become non-reducers, first discussed in 5.3.1, was further evidenced in longitudinal analysis. Reduction was generally most visible in the first month, but often disappeared by the sixth month, though many of those who did continue to reduce chose to then completely eliminate meat and/or other AFPs from their diets. These divergent trends suggest a *typology of meat reducers* that includes *temporary reducers*, *long-term reducers* and *abstainers* (6.3.1).

In addition to general trends, key variations are identified between sociodemographic groups and campaign populations. As discussed in Chapter 5, campaigns appealed to overlapping but distinct consumer groups, suggesting that certain types of campaigns may be more effective for different groups. While reduction campaigns were more likely to appeal to meat eaters (5.5), those in vegan campaigns were more likely to meet and exceed their reduction goals. Important socio-demographic differences also continue to be evident, such as young individuals being more likely to pursue a veg*n diet.

6.2 Overview: gradual short-term reductions and long-term abstention

Four distinct dietary trends emerged within the research sample. Firstly, most meat reduction generally occurred in the first month (see Table 6.1, below). This trend emerged within each campaign sample, including those not based around a one-month pledge. Participants were most successful at reducing red and white meat consumption during the first month, with nearly twice as many reducing (17.5%) as increasing (9.2%) their red meat intake and very few participants (1.4%) increasing their white meat consumption. After this point, however, more increased (17.7%) than decreased (12.3%) their meat consumption, in addition to being more likely to increase than to decrease their red (15.6% and 11.6%) and white meat (12.8% and 11.0%) intake.

Table 6.1 Categorical reduction (in servings)

	Red Meat	White Meat	Fish	Dairy	Eggs	Meat	Meat & Fish	n
0 to 1 month	**0.13***	0.04	0.02	**0.39***	**0.24***	**0.16***	**0.15***	597 to 724
0 to 3 months	**0.08***	0.04	**0.12***	**0.69***	**0.32***	**0.07***	**0.18***	423 to 510
0 to 6 months	0.06	0.05	0.13	0.63	0.28	0.09	**0.16***	433 to 519

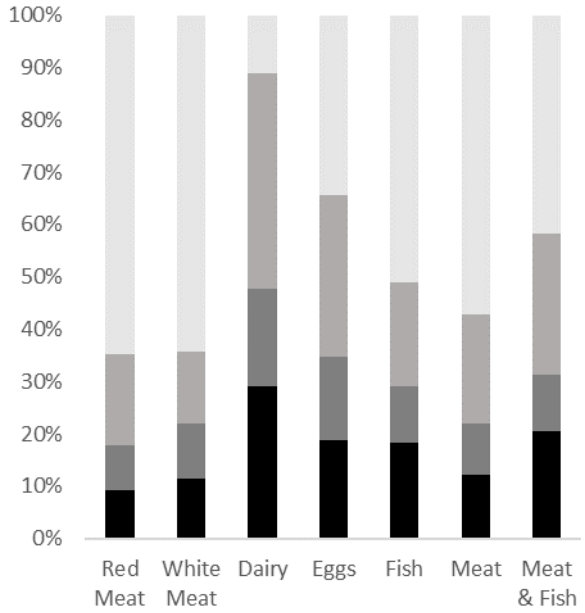
**Positive confidence Intervals to 95%*

Secondly, after the first month continuing consumers displayed two divergent trends, generally either increasing their consumption or pursuing an abstention goal. Continuing consumers were more likely to be eating more or the same amount for each type of AFP, with the exceptions of dairy and eggs, than to be successfully reducing (see Figure 6.1, below). This trend increased over time, with participants more likely to increase than decrease their red meat, white

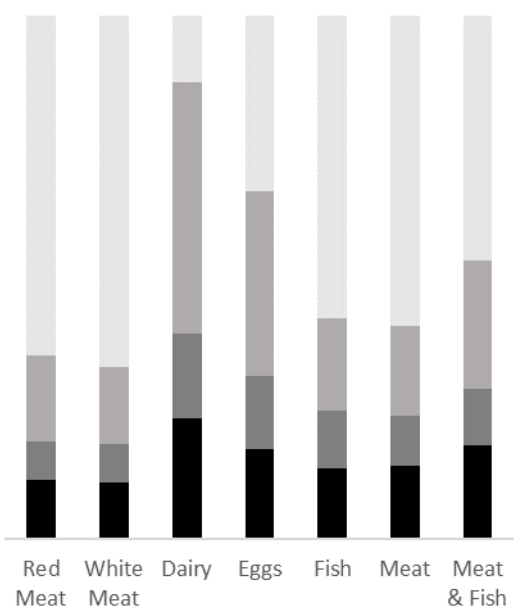
meat and total meat consumption. On average these continuing consumers increased their consumption of red meat (by 6%), white meat (by 5%) and fish (by 7%) from zero to six months.

Figure 6.1 Categorical dietary changes

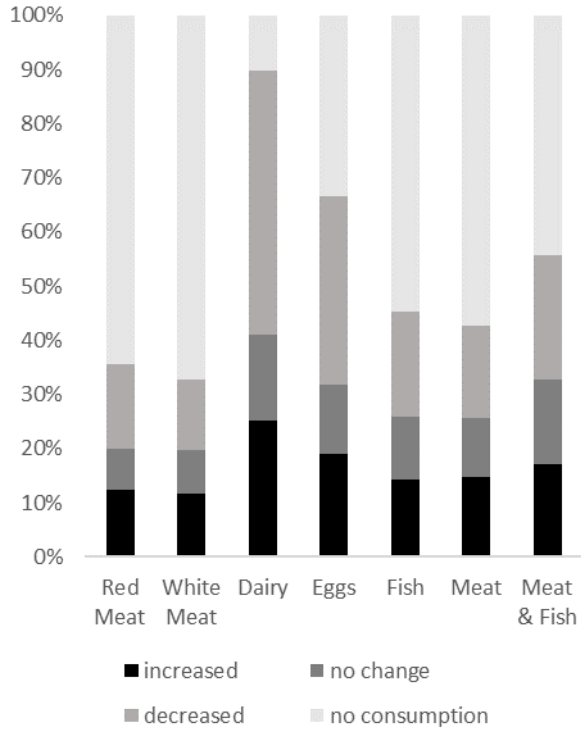
a) … from zero to one month



b) … from zero to three months



c) … from zero to six months



Comparisons between reported servings consumed over the two prior days in the zero month and one month surveys demonstrate that participants were more likely to decrease than to increase or not change their consumption of red meat during the first month. From zero to three and six months, the reverse was true.

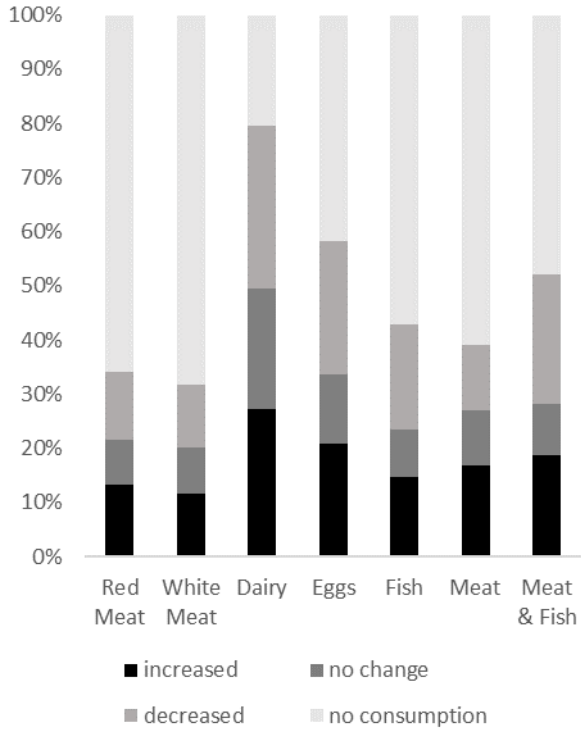
In other categories, participants were more likely to not change or increase their consumption than to decrease.

After the first month, increases were more likely than decreases in all categories but dairy.

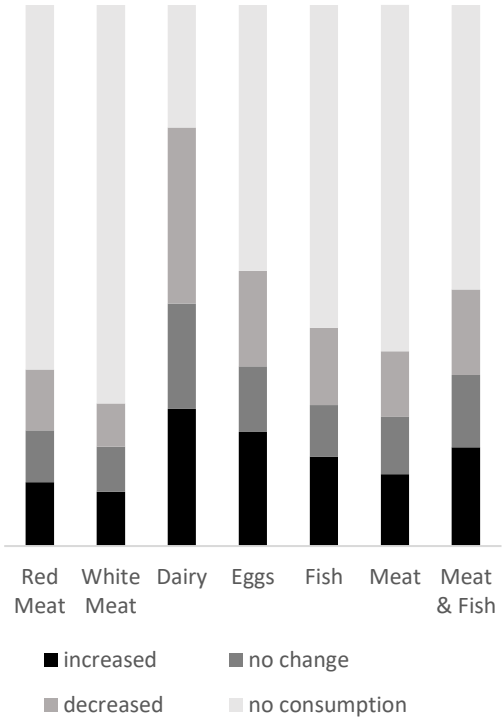
From zero to six months, more had decreased than increased in all categories, though more had either increased or not changed their consumption (i.e. not reduced) than those who had in all areas but dairy and eggs.

More were not consuming than consuming meat, including more reporting zero servings of red and white meat or fish than those reporting one or more.

d) … from one to three months



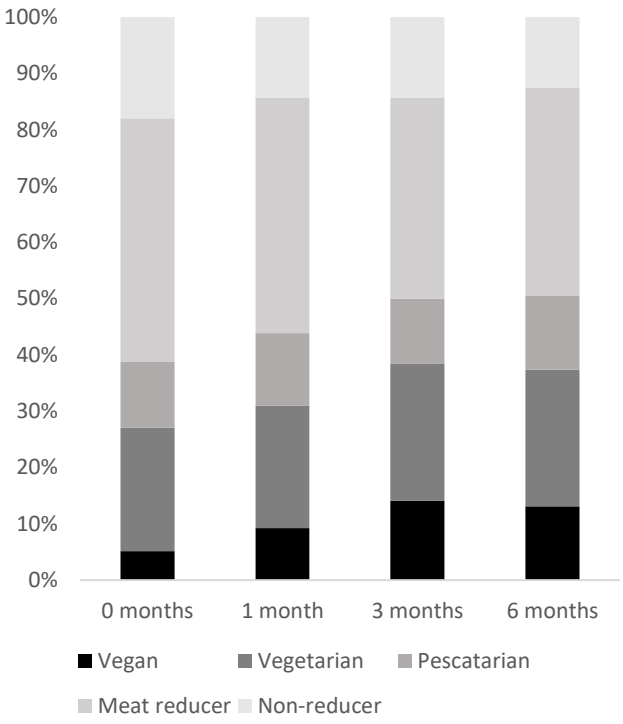
d) … from three to six months



After initial reductions, reducers were increasingly likely to report actual or planned abstention from particular AFPs (see Appendix 11). This was also reflected in reported consumption during the previous two full days with, for instance, 56.7% reporting zero servings of meat at zero months and 65.1% indicating the same at six months. While at zero months red meat was the most likely to not have been consumed (68.1%), not consuming white meat had become slightly more prevalent by the research period's end (77.2%, compared to 74.4% for red meat). Compared to other AFP categories, relatively few participants reported no dairy consumption at zero months (13.4%) but this percentage nearly doubled over time to 21.8% at one month, 29.6% at three months and 25.4% at six months. Egg and fish abstainers also increased from 43.7% and 60.6% at zero months, respectively, to 56.6% at one month, 60.0% at three months and 58.0% at six months for eggs and 65.5%, 70.0% and 69.2% for fish. The proportion reporting zero servings of AFPs also more than doubled from 9.3% at zero months to 17.5% at one month, 24.7% at three and 21.7% at six months.

After six months, participants were more likely to be or plan to be a veg*n or pescatarian and less likely to be or plan to be a meat reducer. Those planning to follow a vegan diet increased from 13.7% at zero months to 17.0% at six months. In addition, after six months participants were more than two times more likely to be reporting a vegan diet (5.2% and 13.1%, respectively) and somewhat more likely to be vegetarian or pescatarian (see Figure 6.2, right). However, the proportion of planned non-reducers nearly doubled from 8.3% to 15.7%. The proportion of planned meat reducers also decreased from 47.2% to 33.4%, with some then pursuing a veg*n or pescatarian diet and others no longer trying to reduce further (6.3.1).

Figure 6.2 Current dietary categories over the six month research period



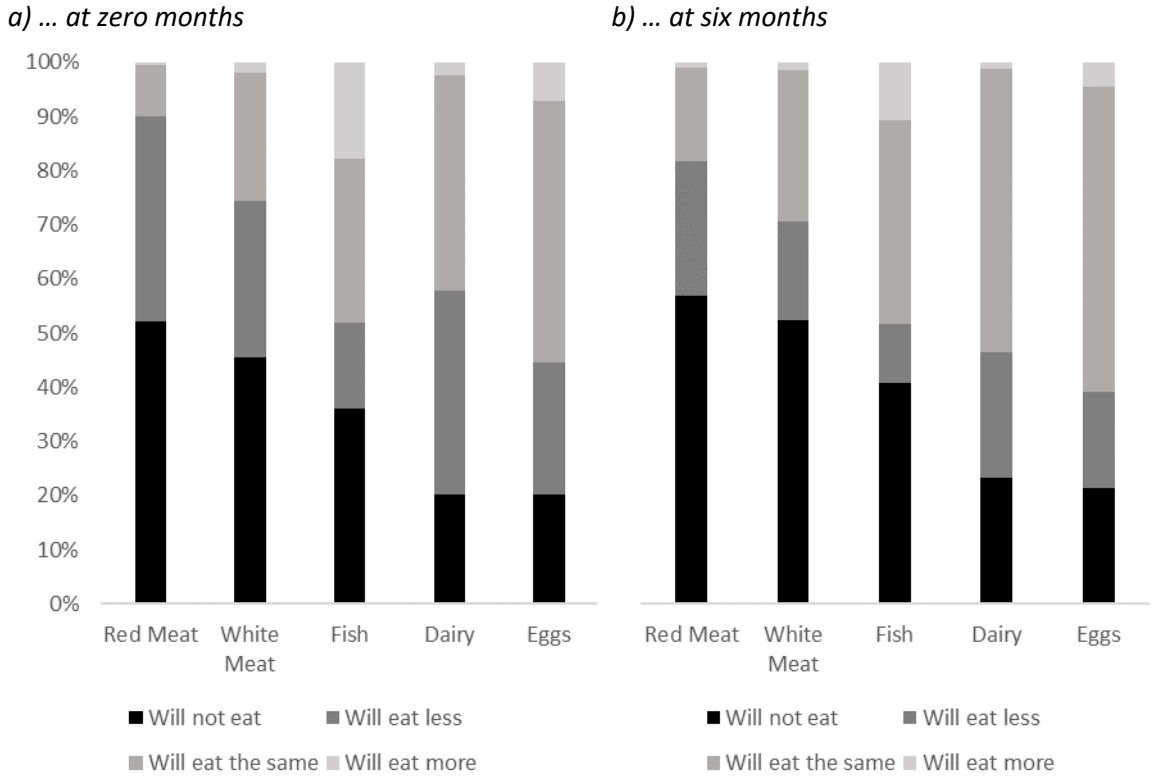
Thirdly, the low status of fish and eggs in the reduction hierarchy was particularly evident in the high propensity for pescatarians and meat eaters to plan to increase their consumption of these foods, as discussed in 5.4. Overall, more participants increased their egg and fish consumption than those who initially planned to do so, including 23.3% of meat reducers and 24.6% of pescatarians eating more eggs, while 21.4% and 23.4%, respectively, ate more fish. Vegetarians were less likely to increase their egg consumption (14.2%) than either group during the same period. Overall, twice as many participants increased their egg consumption from zero to six months than those who planned to at the research period's start. As will be discussed further in 6.3.1, this suggests that eggs and fish may at least partially be used as substitutes by those decreasing their red meat consumption.

Participants with various reduction motivations commonly expressed fish consumption as less morally relevant, enabling two of five self-identified vegetarians in focus groups to continue to

consume fish or seafood. For instance, BL4, an environmentalist and planned vegan, described herself as 'a vegetarian of six to seven years', despite continuing to consume fish and seafood. Similarly, when vegans described their partners' journeys toward reduction, both VI1 and MA3 described them as no longer eating meat but still consuming fish.

Finally, reduction generally occurred gradually and, for veg*n participants, often included a series of stages that incorporated the reduction hierarchy. Participants were most likely to plan to eat less red meat (38.0%), followed by dairy (37.6%), then white meat (28.9%) and least likely to plan to reduce eggs (24.5%) and, finally, fish (15.9%) (see Figure 6.3, below). Overall, reported reductions generally reflected this pattern, with the largest reductions occurring for red meat, followed by white meat and dairy and, finally, eggs and fish. For abstention, red meat was also the most popular category (52.1%), followed by white meat (45.5%). This was then followed by fish (36.1%), before dairy (20.3%) and eggs (20.2%). Thus, for red meat, white meat and fish, participants were more likely to report plans to abstain than to reduce, while the reverse was true for eggs and dairy.

Figure 6.3 Planned categorical dietary changes



As discussed in 5.4, participants were most willing to change dietary category (e.g. become vegan) if they were already pursuing a similar form of reduction. For instance, vegetarians were more likely to want to become vegan (22.2%) than were meat reducers (4.3%) and meat reducers were more likely to want to become pescatarians (4.7%) than were non-reducers (1.8%). Many individuals who transitioned to a veg*n diet did so through a series of stages that may have included time as a meat reducer before becoming a pescatarian and/or vegetarian and then, potentially, a vegan (see 9.3). Within focus groups, only 11.1% of current vegans depicted their transitions as occurring at one specific point in time.

Where they had occurred, sudden (i.e. overnight) transitions had happened at a young age and after being exposed to information about animal suffering. BN6, one of two overnight vegans, was a twenty-year-old vegan activist and university student, who was passionate about fitness and weight training. She described her pre-vegan self as 'a bro' and a heavy meat eater, whose diet was 'pure protein' for weight lifting, primarily consuming chicken, broccoli and sweet potatoes. She depicted 'a 180' overnight change that had occurred two and one-half years prior. This had been triggered by one particular source of information, a 'conversion experience' (Beardsworth and Keil 1992), about poor animal welfare: 'I saw these videos. I was like, "Okay, I'm gonna have to be vegan"' (BN6).

The second over-night vegan, BN9, was a builder and one of two male focus group participants. He described himself as having been a 'full carnivore' who, eight years previously, 'just went straight vegan' at twenty years old. As with BN9, this transition was triggered by a new-found awareness of the conditions in which farmed animals are raised:

> Someone showed me one Viva! video and then I started watching other Viva! videos and did more research and it just got to the point where I was like, "I can't do this". You know, it's just not right. It just makes me feel physically sick thinking about it. And, actually, I was full carnivore as well. I just went straight vegan. There was no vegetarian.

For BN9 and BN6, one source of information was enough to trigger a political awakening and total restructuring of their dietary choices.

While BN9 and BN6 never experienced a vegetarian stage, one vegetarian described a similarly rapid decision to abstain from meat consumption. BL7, a university student and environmentalist in her late teens explained an initial resolution to become vegetarian that was followed by a sudden decision to immediately stop eating meat. She explained that she had 'always been concerned about the environment' and, during her final year of secondary school, had learned about the environmental impacts of meat consumption. This led her to conclude: 'I need to stop eating meat. … I just decided I would wait until I finished school, done with exams, and then it was the day after… I finished my exams and I just, I went out for lunch and I was like, "Oh I'm not gonna have meat" and then, since then, I haven't'.

All three *overnight transitioners* made the decision to do so at a young age, when they were seventeen to twenty years old. The younger groups in general appeared to be more prepared to eliminate foods from their diet or become fully veg*n. This group may be more willing and capable of rapidly changing their diet at a time when their identity may be in transition and their sense of self less developed, as expressed by campaigns targeting university students in Chapter 4. While attachment to meat consumption may be difficult to change (Dowsett *et al.* 2018), it could be that these feelings are less entrenched for younger individuals who may be more inclined to feel repulsed by meat if exposed to information about animal protection and may therefore be more willing to make a sudden change. They may also be more likely to be independent in their food choices and without family members or dependents with whom they are sharing meals. This could be related to findings that those under 35 may be the most likely to become veg*n (The Vegan Society 2016).

Unlike the minority group of overnight transitioners, most reducers reported a more stepped approach, which may have included a desired vegan goal. Even participants in two of three vegan campaigns were unlikely to state that they planned to become fully vegan at the campaign's start (21.9% of GVC, 31.6% of GVUC and 68.1% of 3DV participants), as discussed in Chapter 4. However, over time participants in the GVC became almost twice as likely to plan to become vegan (40.3%). Focus group discussions suggest that, for some, veganism could be seen as a preferable

goal, though perhaps one that may be seen as difficult to achieve or currently out of reach. Within focus groups, most participants (73%) described veganism as a potential or preferable end goal, including three of ten meat reducers. BL4, one of the self-described vegetarians but practicing pescatarians, participated in PTC in 2016. She described herself and her husband as 'trying to be vegans' who were 'slowly transition[ing]', saying, 'I'm not vegan ***yet***' (emphasis added).

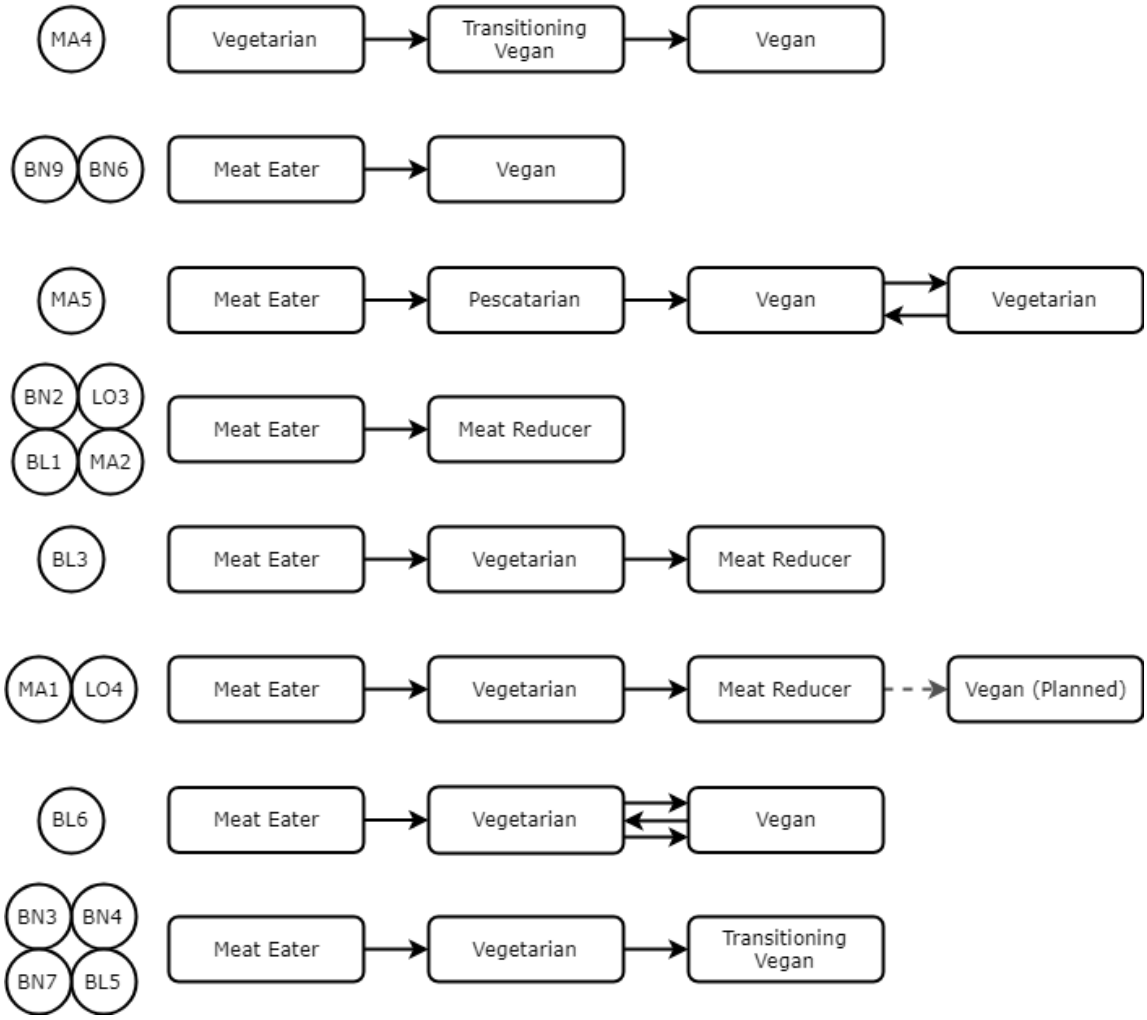
Others echoed BL4's description of reduction as a gradual process, including BL2, a married homeopath and mother in her forties who had completed Meat Free May before signing the Let's Eat Better Pledge in 2016. Seeking an opportunity 'to get some more work stuff going on', she shared daily recipes while completing MFM. A year later, during the focus group discussion, she described herself as having 'started transitioning to [a] plant-based diet' and that she was 'almost there', citing several prior achievements, including having not cooked meat for six months and not consumed meat for five months or fish for two.

BL6, a postgraduate student in her mid-twenties and a vegan of four years, described the gradual approach as key to her having successfully transitioned to veganism. She recounted her previous failed attempt: 'It lasted two weeks. Gave everything up and then at the end of two weeks, just bought eight balls of mozzarella and sat filled with self-pity and ate them all'. Two years later, she repeated the attempt, but with a new strategy: 'When I went vegan the next time, … I gave up … one thing a week, and the first week I gave up yoghurt, because I didn't eat yoghurt, … and then I worked down to the cheese. So, I did it over six or eight weeks. Yeah, but it was much easier'. While BL6's stepped strategy led to a successful, long-lasting transition to a vegan diet, it was not yet clear if others, like BL4 or BL2, would eventually achieve their goals of a fully vegan diet through their own, ongoing and gradual approaches. Nonetheless, both reported reducing their consumption of most, if not all, AFPs.

One participant disagreed that slowly transitioning was a more sustainable approach. MA4, a vegan university student in her early twenties who had grown up vegetarian, 'I've tried [becoming vegan] slowly in the past and that doesn't work. I think you have to just dive in there and so just one day I said, "All right. I'm not gonna [be vegetarian] anymore"'. Even though she had 'always

wanted to go vegan', she explained, 'I've always kind of put it [to the] back and never kind of do it'. While the gradual approach may help reducers on their journey toward a more plant-based diet, when eliminating foods there must be a moment when they commit to no longer consuming them, as with BL7's decision to not eat meat in a restaurant after finishing her secondary school exams.

Figure 6.4 Sample reduction journeys of focus group participants



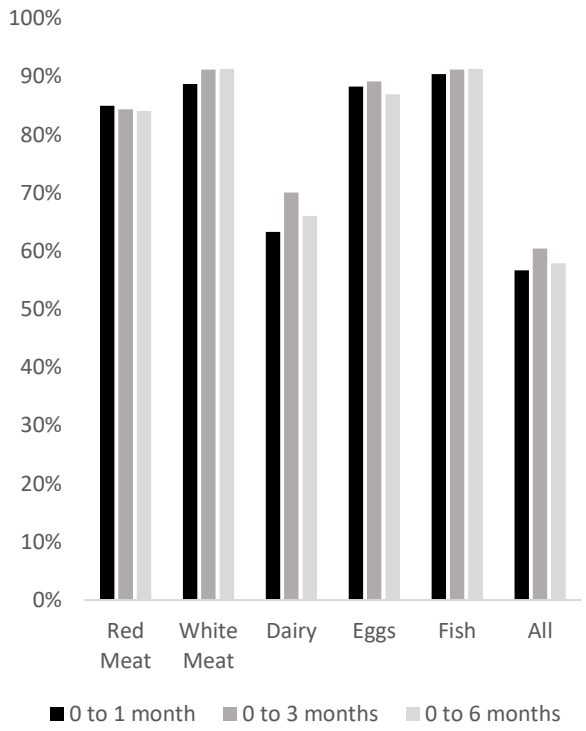
Trends exhibited within the survey and focus groups suggest the propensity toward a *reduction journey*, rather than a sudden dietary change, though wide variations in the nature of this transition emerged (see Figure 6.4, above). This was further evidenced in focus groups, with some participants describing initial considerations of animal welfare through such practices as the purchasing of 'high welfare' meats before considering reduction. MA2, a self-described 'part-time vegan' in her fifties who had participated in Meat Free May (MFM), the Let's Eat Better (LEB) Pledge and Veganuary for several years, described her own journey as beginning with a concern for the welfare conditions of AFPs she was consuming:

> I think, because that was kind of my journey, I started with stopping it as best I could – factory farmed things and moving through that process and still not even considering things like dairy products or egg— well, eggs we did, but not dairy products. That's probably been the most recent thing that I've considered, but because that was my journey from first Freedom Foods®, which I know isn't really, through organic, through to part-time vegan, if that was my journey maybe some other people take the same journey.

By beginning to question the origins of food and the welfare of food-based animals, MA2 began the process of learning and un-learning. She was able to reconnect with the living pre-food animal through the conscious dietary decisions she was making, while distancing herself from previous unreflective habits.

During this period of potential cognitive and dietary transition, participants do appear to have, on average, changed their dietary habits. Overall, participants were more likely to meet their reduction goals than not to (see Figure 6.5, right). However, this was not the case for meat reducers or pescatarians. Participants were most successful at meeting their goals (reduction or elimination) for fish and white meat and least successful for dairy. It may be that dairy consumption is less easily monitored. Reducing fish or white meat is also likely to be most prominent amongst those consuming meatless meals, who are not replacing red meat with white meat or fish. It may be connected to greater successes if participants are therefore likely to adopt new habits and meal styles through the formation of these new dietary practices. This could also be related to the lower success rates

Figure 6.5 Achievement of categorical reduction goals



amongst meat reducers and pescatarians who may still rely on familiar meal constructs based on a central meat (or fish) component (see 9.6).

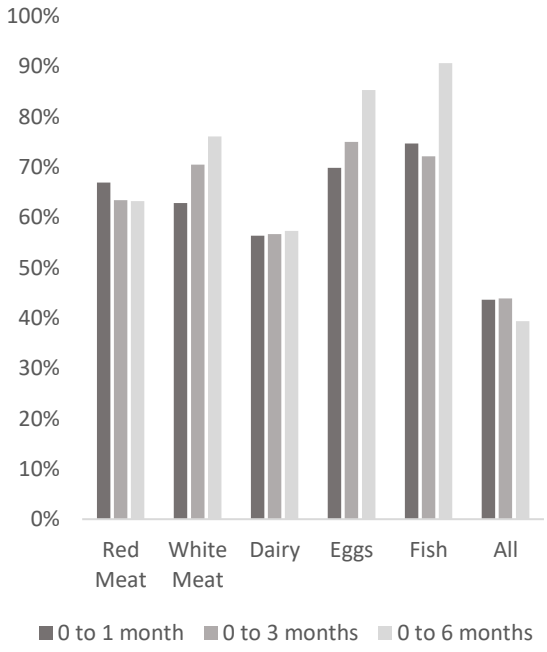
While different strategies (i.e. stepped or overnight transitions) may work for different people, it does appear that most chose a more gradual approach. This was evident throughout the survey sample in planned and actual dietary changes, with 12.0% of meat reducers planning to become veg*n or pescatarian at zero months. For meat reducers this may mean that initial reductions are not sustained for those who do not then pursue abstention. While the proportion of those planning to become pescatarian or veg*n increased to 4.4% percent at one month, 8.8% at three months and 10.4% percent at six months, the proportion not successfully reducing increased further, from 44.7% percent at one month, 50.0% at three and 54.1% at six months. Thus, while the gradual approach may have led some meat reducers to plan to pursue further reductions, most were not successfully meeting their reduction goals, as is discussed further in the following section.

6.3 Changes to consumption: gradual changes & the greater success of abstainers

6.3.1 Meat reducers

Planned meat reducers (n=722) were the least likely to meet all their reduction goals and were more likely to be consuming more or the same amount of meat after six months than less or none. While reductions made during the first month often were not sustained throughout the research period, over time an increasing proportion of planned meat reducers were pursuing a veg*n diet. However, they were more than five times as likely to report eating more or the same amount of meat consumed at six

Figure 6.6 Achievement of categorical reduction goals: planned meat reducers



months as at zero than they were to strive for a veg*n or pescatarian diet, with both of these groups showing signs of increasing over time. This group was also likely to increase their consumption of fish or eggs.

Table 6.2 Categorical portion reduction for planned meat reducers

	Red Meat	White Meat	Eggs	Dairy	Fish	Meat	Meat & Fish
0 to 1 month	**0.28***	0.1	**0.19***	**0.28***	-0.01	**0.37***	**0.3***
0 to 3 months	**0.18***	**0.1***	**0.25***	**0.5***	**0.1***	0.2	**0.27***
0 to 6 months	**0.18***	0.08	**0.23***	**0.67***	0.13	0.21	**0.28***

** Confidence interval (to 95%) above zero*

Despite most meat reducers not meeting all of their reduction goals at six months (see Figure 6.6, p. 152), they did have average reductions in each AFP category (see Table 6.2, above). At six months, 39.3% were meeting all of their reduction goals, compared to slightly higher proportions at previous time points (43.6% at one month and 43.9% at three months). 53.1% reported eating more or the same total servings of meat at six months as at zero. That less than one-fourth of meat reducers planned to reduce their egg consumption and less than one-half for dairy was also reflected in consumption patterns, with a similar proportion decreasing as those who ate the same or more (see Figure 6.8, below).

Table 6.3 Current dietary category for planned meat reducers

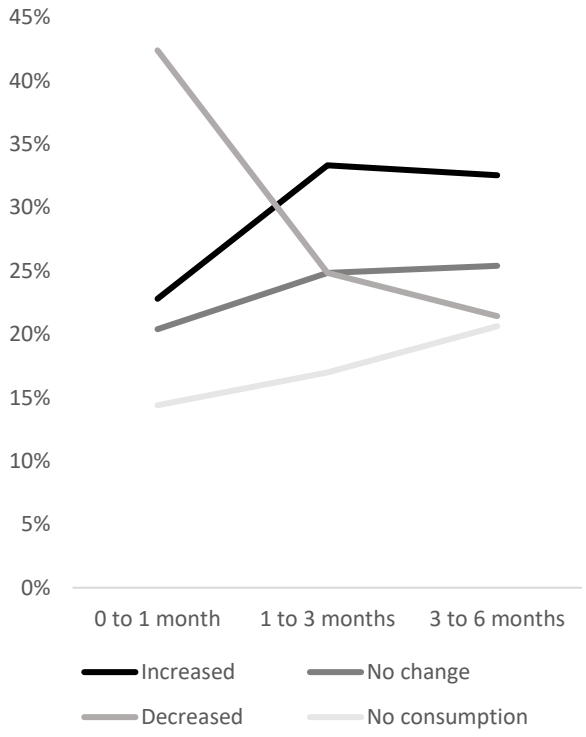
	Vegan	Vegetarians	Pescatarians	Meat reducers	Non-reducers	n
0 months	0.28%	0.42%	0.14%	70.93%	28.23%	719
1 month	2.03%	1.69%	0.34%	50.51%	45.42%	295
3 months	2.51%	3.02%	2.51%	39.20%	52.76%	199
6 months	1.42%	4.27%	3.32%	37.44%	53.55%	211

As discussed in 5.3, most aiming to reduce their meat consumption reported already eating less meat than six months prior (70.9%), while a further 28.2% reported consuming and not having reduced (see Table 6.3, above). After six months the proportion of non-reducers comprised 53.6% of the group, while the proportion of veg*ns and pescatarians steadily increased to comprise 9.0% of the group. Thus, over time this group became somewhat more likely to plan to abstain from certain AFPs. They became more likely to plan to eliminate red meat (16.3% at zero months and 21.6% at six months), white meat (2.2% and 11.9%, respectively) or fish (5.7% and 9.6%) from their

diet. They were also slightly more likely to plan to not consume dairy (5.1% and 5.9%), though no less likely to do so for eggs (5.6% and 5.5%).

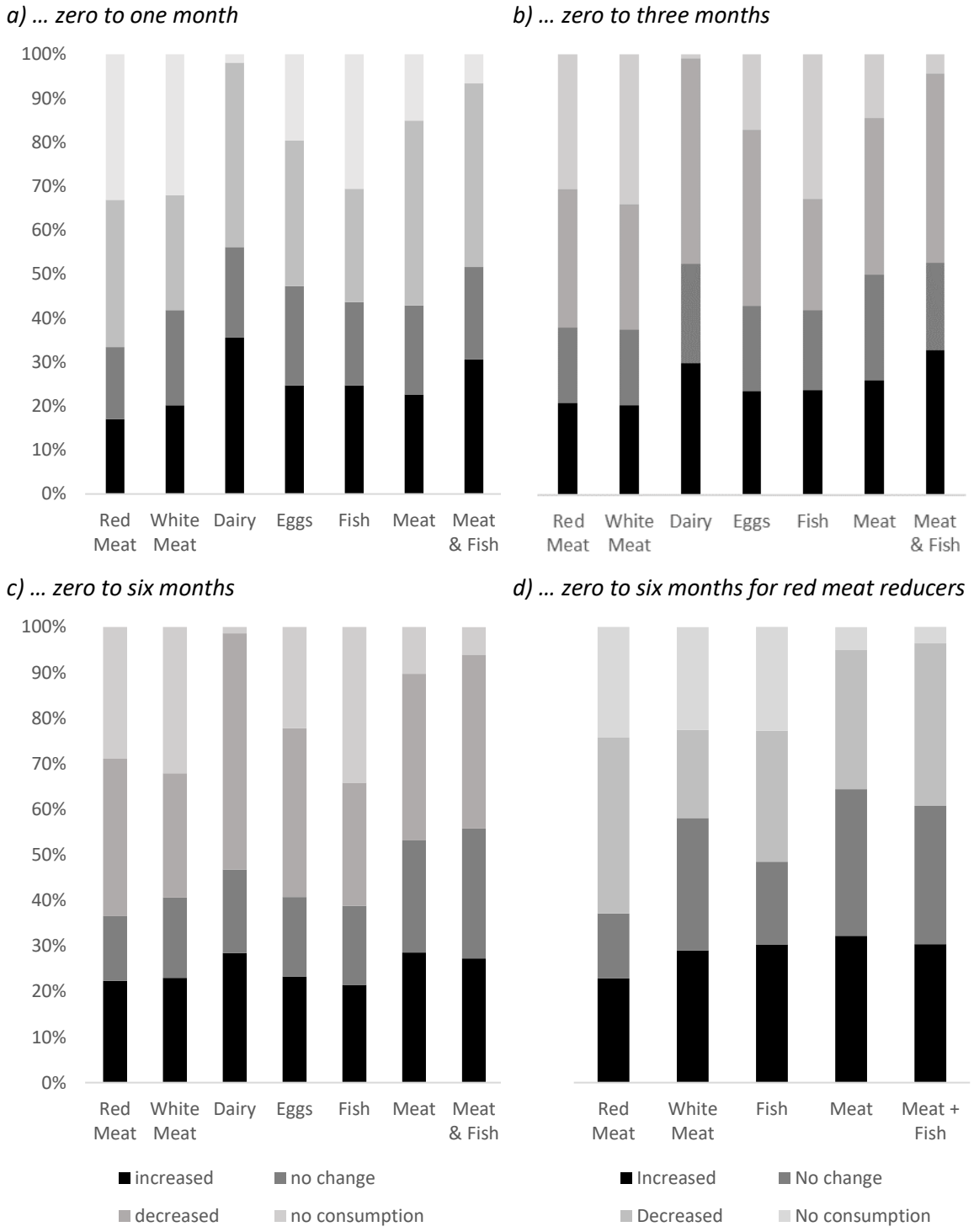
However, continuing consumers were more likely to increase their meat consumption after the first month than to decrease it, such that just under one-half (47%) of all planned meat reducers were consuming less (or no) total meat after six months (see Figure 6.7, right). Initial reductions in the first month were therefore likely to disappear or shrink after this point. After one month, the proportion who had increased their red meat (17.2% at one month, 20.8% at three months and 22.5% at six months) or total meat (22.8%, 26.1% and 28.7%, respectively) consumption rose. While they were less likely to eat more total meat and fish at six months (27.3%) than at one month (30.3%), they were also more likely to eat the same amount at six (28.5%) than one (21.2%) month. More had increased or not changed their consumption than those who had not.

Figure 6.7 Changes to total meat consumption between waves for planned meat reducers



As discussed in 5.4, meat reducers were likely to focus on red meat reductions and may use white meat and/or fish as replacements. While less popular than red meat reduction, most did plan to also eat less white meat (2.2% to not eat and 61.4% to eat less). More, however, planned to eat more (32.6%) or the same (42.4%) amount of fish than those who planned to eat none (5.7%) or less (19.3%). As discussed in 5.4, current non-reducers (who comprised just over one-quarter of the group) were more likely to plan to increase their white meat consumption.

Figure 6.8 Categorical dietary changes for planned meat reducers



Red meat reducers (32.9% of all meat reducers) – those who planned to reduce their red meat but not their white meat or fish intake – were as successful as other meat reducers in reducing their red meat consumption, though less likely to not consume it. However, they were more likely to increase or not change their white meat, fish, total meat and total meat and fish consumption than were other meat reducers (see Figure 6.8d, above). Fifty percent more increased their white meat (29.0%) consumption as those who decreased it (19.4%) and slightly more (30.3%) increased

than decreased (28.8%) their fish consumption. Red meat reducers were slightly more likely to eat more (32.2%) than less (30.5%) meat after six months, while the reverse was true for other meat reducers. They were extremely unlikely to not consume any meat (5.1%) or meat and fish (3.6%).

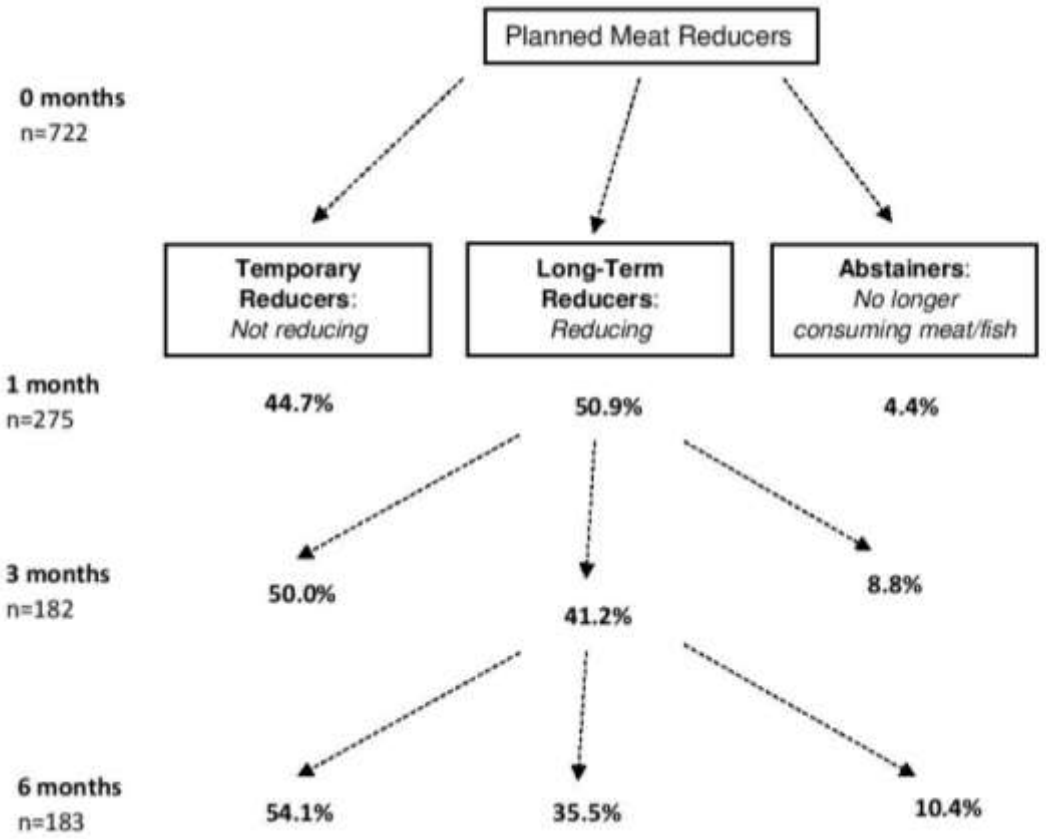
Within this sample red meat reducers were more likely to increase their white meat and fish consumption than were other meat reducers, while being extremely unlikely to not consume any meat or meat and fish. They may be most likely to rely on meals possessing a meat-element, potentially through their use of white meat or fish as replacements. This could be in line with Twigg (1981; 1979)'s status hierarchy, with these individuals choosing to maintain familiar meat-centric meal constructs that feature foods that are lower status, but still deemed sufficient enough to be the basis of a meal. This is explored further in 8.3 and 9.6. Ultimately, they were unlikely to reduce their meat consumption during the six month period.

While some new reducers may be eating less meat, many (in this case most) meat reducers may stop reducing over time and others may seek to become abstainers. A *typology of meat reducers* is proposed to better understand these distinct trends, which includes: (1) *temporary reducers*, who are not successfully reducing, (2) *long-term reducers*, who maintain (and in some cases increase) initial reductions and (3) *abstainers*. One of the key benefits to meat reduction may not be the quantity of meat an individual consumes through sustained reduction, but in the potential for an increased propensity to later become an abstainer.

Reducers who do not attempt to become pescatarian or veg*n may become *temporary reducers*, with this group encompassing over 44.7% of meat reducers at one month, 50.0% at three and 54.1% at six months (see Figure 6.9, below). Over time, meat reducers became increasingly less likely to report plans to further reduce their red meat (80.4% at zero months and 50.2% at six months), white meat (61.1% and 35.1%, respectively) or fish (19.3% and 10.9%) consumption. Reduction is an ongoing, active process, and if a reducer is not continuously monitoring their consumed servings or consciously working to develop new unconscious habits, they may return to old dietary habits or be inconsistent in their reduction.

As described by LO1, maintaining initial reductions may be an ongoing challenge for meat reducers. A meat reducer in her mid-twenties who described herself as previously consuming a diet heavy in meat, LO1 became concerned about her health after gaining a significant amount of weight and experiencing pronounced fatigue in her early twenties. She and her sister had pledged to eat less meat in order to improve their health after becoming aware of some of the welfare issues regarding meat production. She described this process: 'I think we went a couple months without meat and then we got into it again, slightly, which wasn't great. Wish we hadn't. … And this year was quite tough, but then when we did it properly. We were quite adamant that we wanted to do that. It was easier. I think it's always easy if you put your mind to it … And I still don't eat meat that regularly'.

Figure 6.9 The meat reducer typology



Temporary reducers are those who have not reduced their meat consumption from zero months. Long-term reducers have successfully done so.

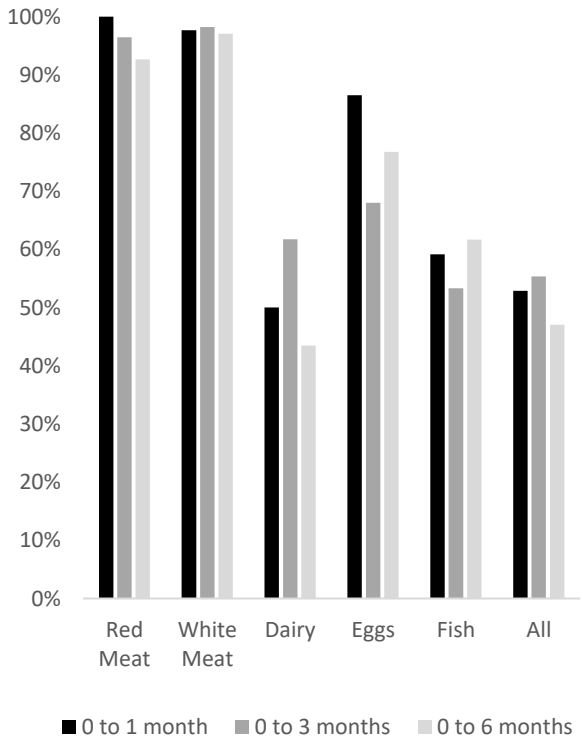
LO1's journey was, as with many, a gradual one that advanced through a series of stages: an initial commitment, a short period of successful reduction, a longer period of less (or no) reduction and then a renewed commitment and period of successful reduction. As will be discussed further in Chapter 8, circumstances can affect a meat reducer's ability to consistently eat less or

low amounts of meat. For instance, meat reducer BL3 stated: 'I attended a niece's wedding last week and the food was basically a meat feast. I had the meat sweats at the end of the day'. While a veg*n would have likely viewed the meat as unavailable, a meat reducer has the potential to either underestimate their meat consumption or to vary their consumption depending on the situation. Thus, while a gradual approach may for some be easier or more sustainable, without a specific plan or goal to eliminate meat, its continued status as a potential food option could deter further or continued reduction.

6.3.2 Pescatarians

Pescatarians (n=171), the smallest dietary group after planned non-reducers, were more likely to be consuming fish and to be increasing their fish consumption over time than were meat reducers. However, they were more likely to be not consuming red or white meat than meat reducers were to be reducing its consumption. While a slight majority of meat reducers were eating more meat after six months, a slight majority of pescatarians were eating less fish after six months. They were also likely to be reducing their egg but not necessarily dairy consumption. While more than 90% were successful at maintaining a pescatarian diet, only 47.1% were meeting all of their dietary goals, largely due to not reducing their fish or dairy consumption (see Figure 6.10, right).

Figure 6.10 Achievement of categorical reduction goals for planned pescatarians

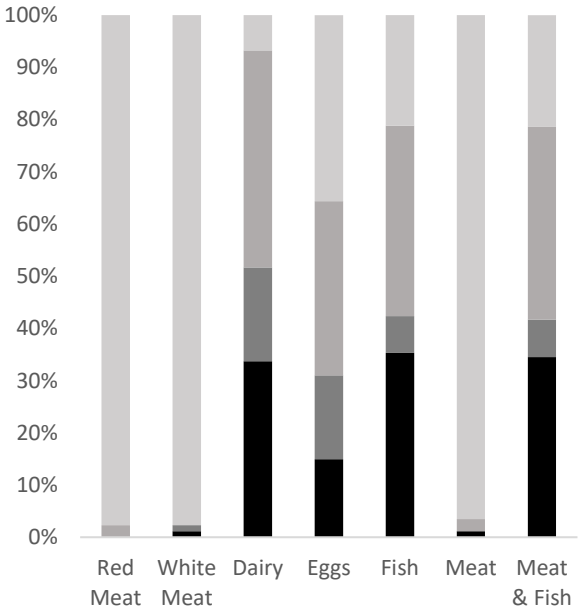


Pescatarians, who were primarily comprised of current pescatarians (77.3%) and meat reducers (18.6%), were extremely successful in not consuming red or white meat but were less successful in reducing other types of AFPs. However, fewer participants reported consuming meat at

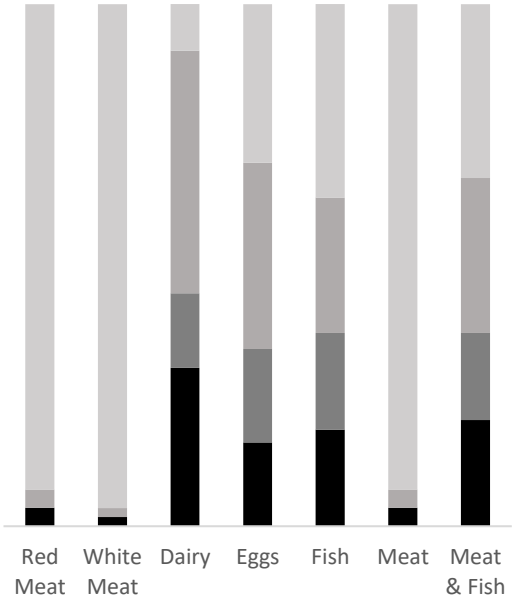
one (2.3%) and three months (3.5%) than at six (8.8%). Many surpassed their dietary goals, with 15.8% at three months and 13.0% at six months reporting a vegetarian or vegan diet (see Table 6.4, below).

Figure 6.11 Categorical dietary changes: planned pescatarians

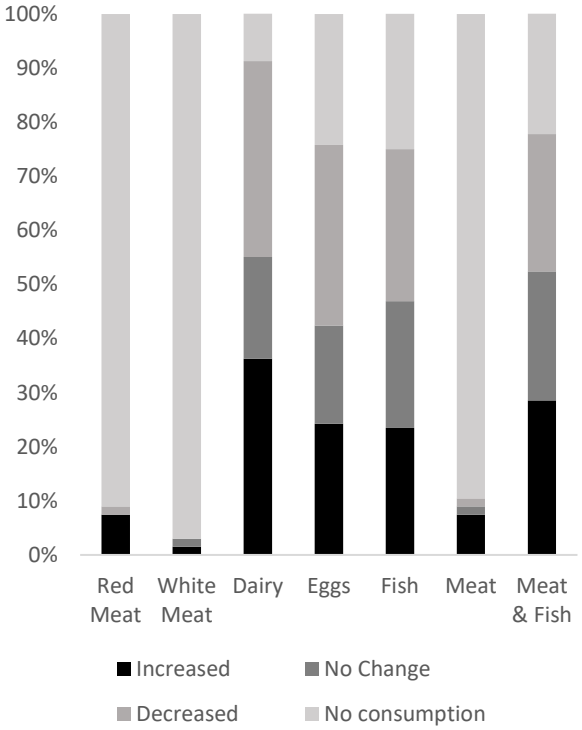
a) … from zero to one month



b) … from zero to three months



c) …. from zero to six months



Planned pescatarians were unlikely to consume meat at any point in the research period, though were equally likely to do so at zero as at six months and less likely to do so at one and three months.

They were more likely to consume fish at zero months than at future points, though the majority continued to consume fish.

They were also more likely to increase their meat and fish consumption to six months (28.6%) than to decrease it (25.4%).

Table 6.4 Current dietary category: planned pescatarians

	Vegan	Vegetarians	Pescatarians	Meat reducers	Non-reducers	n
0 months	0.60%	0.60%	77.25%	18.56%	2.99%	167
1 month	1.12%	6.74%	77.53%	12.36%	2.25%	89
3 months	3.51%	12.28%	71.93%	8.77%	3.51%	57
6 months	2.90%	10.14%	71.01%	5.80%	10.14%	69

The group consumed almost no meat throughout the period but, unlike the overall sample where the reverse was true, the majority of participants (62% at zero months and 55.2% at six months) consumed fish. An increased proportion reported not consuming fish after the zero-month point, with somewhat more reducing (28.1%) than increasing (23.4%) their consumption after six months (see Figure 6.11, below). At one month most (58.3%) were successfully reducing their fish intake (36.9% decreased and 21.4% not consumed), which increased slightly at three months (63.0%) before decreasing to 53.1% at six months.

6.3.3 Vegetarians

Planned vegetarians (n=301), who were predominantly composed of current vegetarians (85.1%), pescatarians (7.3%) and meat reducers (6.6%), were generally successful at maintaining a vegetarian diet and meeting their reduction goals. While reductions for other groups often lessened after the first month, vegetarians were likely to increase their dairy and egg reductions over time, with average decreases higher at three and six months than at one (see Table 6.5, below). Many exceeded their reduction goals and went on to pursue a fully vegan diet. Overall, they were more likely to meet all of their dietary goals at each point (61.7% at one month, 70.7% at three months and 75.6% at six months) than were pescatarians or meat reducers.

Table 6.5 Categorical portion reductions for planned vegetarians

	Red Meat	White Meat	Eggs	Dairy	Fish	Meat	Meat & Fish
0 to 1 month	0.02	0.04	**0.4***	**0.63***	0.03	**0.06***	0.08
0 to 3 months	0.04	.02	**0.53***	**1.16***	0.04	0.06	0.08
0 to 6 months	0.02	0.08	**0.56***	**1.05***	0.04	0.09	0.12

** Confidence intervals (to 95%) do not include zero*

Vegetarians were more successful at not consuming meat or fish than meat reducers or pescatarians were at reducing or not consuming them (see Figure 6.13, below). In addition to one hundred percent reporting zero servings of meat at six months, 97.4% did not consume fish. They were also increasingly successful at meeting their dietary goals for dairy at three (70.5%) and six (76.5%) months, and comparable to the overall sample in terms of successful egg reduction (85.6% at six months).

Figure 6.12 Achievement of categorical reduction goals for planned vegetarians

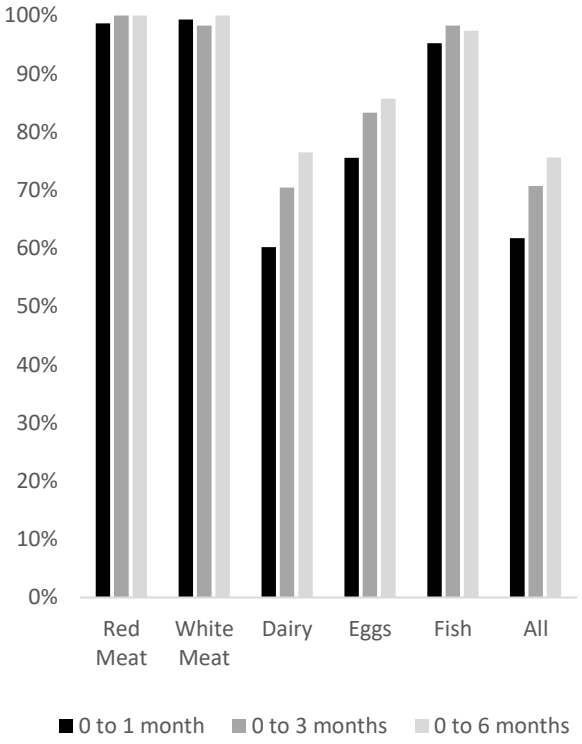


Table 6.6 Current dietary category: planned vegetarians

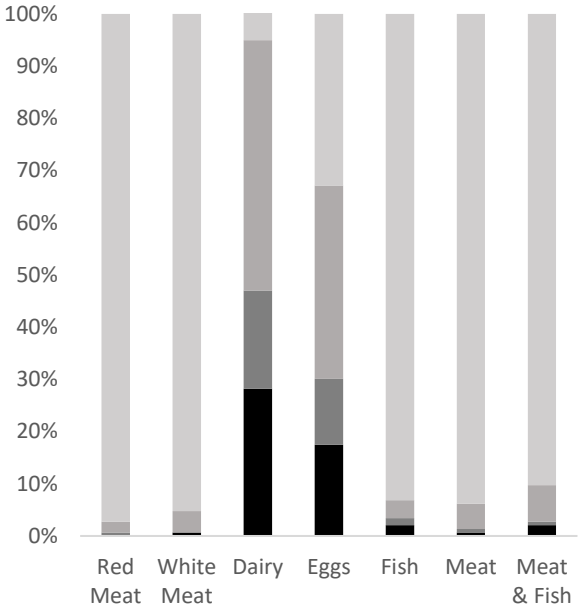
	Vegan	Vegetarian	Pescatarian	Meat Reducer	Non-reducer
0 months	0.33%	85.05%	7.31%	6.64%	0.66%
1 month	2.70%	80.41%	8.78%	5.41%	2.70%
3 months	7.83%	80.87%	6.09%	4.35%	0.87%
6 months	11.86%	80.51%	5.93%	1.69%	0.00%

While meat reducers and pescatarians appear to have done most of their reduction in the first month and then had the potential to return to old habits, those pursuing a vegetarian diet were more likely to have increased their reductions after this point. After successfully eliminating meat and fish from their diets, on average, they continued decreasing their dairy and egg consumption after the first month. An increasing proportion of respondents reported consuming fewer servings of dairy and eggs, with 48% reducing dairy consumption in the first month and 63.3% to six months (see Figure 6.13, below). From 69.0% eating fewer or no eggs in the first month, 77.9% did so from months one to six. Over time, a greater percentage also reported following a vegan diet (11.9% at six months), while fewer were meat eaters (7.3% at zero months and 1.7% at six months) (see Table

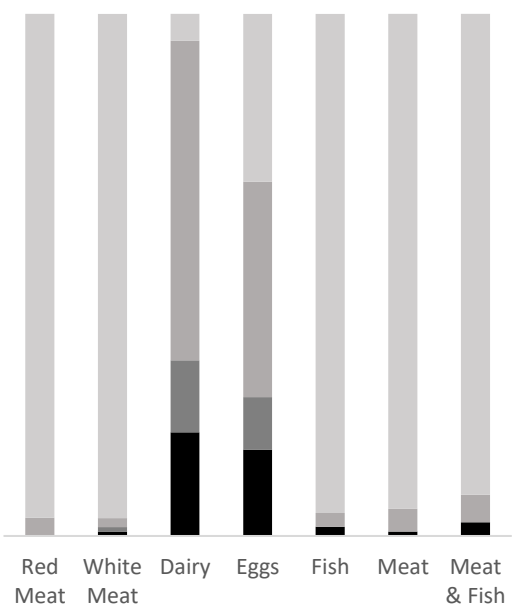
6.6, above). In addition, those reporting plans to follow a vegan diet increased at each point, to 8.7% at one month, 16.4% at three months and 20.2% at six months.

Figure 6.13 Dietary changes for planned vegetarians

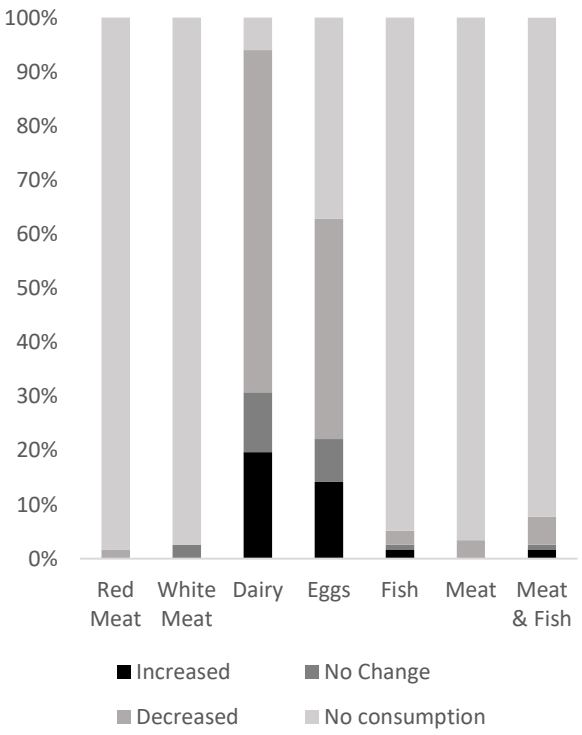
a) … from zero to one month



b) … from zero to three months



c) …. from zero to six months



Planned vegetarians were extremely unlikely to consume meat during the research period and fewer than five percent consumed fish at each point.

Unlike pescatarians and meat reducers, they were more than three times as likely to be reducing (63.3%) than increasing (19.7%) their dairy consumption to six months. They were also nearly three times as likely to be decreasing (40.7%) than increasing (14.2%) their egg consumption during the same time period.

They were more likely to further reduce their dairy or egg consumption (38.0% and 28.9%, respectively) after one month than to increase them (27.2% and 16.7%).

6.3.4 Vegans

Planned vegans (n=207) were the most successful group in meeting all of their dietary goals and transitioning to a new diet (with most not following a vegan diet at zero months). They were also the most likely to meet their goals for fish, dairy and egg reduction. The group was comprised of a mix of current vegans (35.9%), vegetarians (35.4%), pescatarians (13.9%) and meat reducers (13.4%) and were the only group where the majority were not already following such a diet. Nonetheless, the group with the most stringent goals – the total elimination of AFPs from their diets – and the fewest already meeting these goals, had the greatest proportion meeting their reduction goals (see Figure 6.14, above): 72.8% at one month, 80.5% at three months and 77.8% at six months. They also had average reductions in all areas to six months (see Table 6.7, below).

Figure 6.14 Achievement of categorical reduction goals for planned vegans

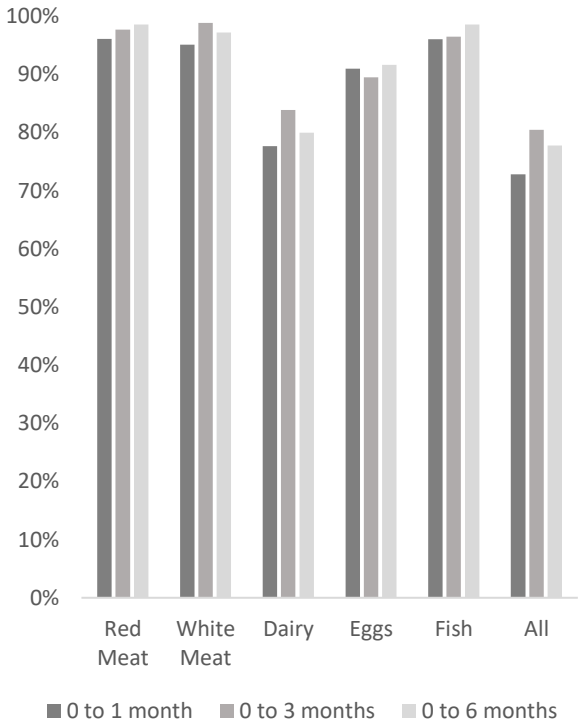


Table 6.7 Categorical portion reduction for planned vegans

	Red Meat	White Meat	Eggs	Dairy	Fish
0 to 1 month	-0.01	0	0.12	0.4	0.03
0 to 3 months	0.02	0.08	**0.28***	**0.65***	**0.1***
0 to 6 months	0.01	0.01	0.3	**0.42***	**0.18***

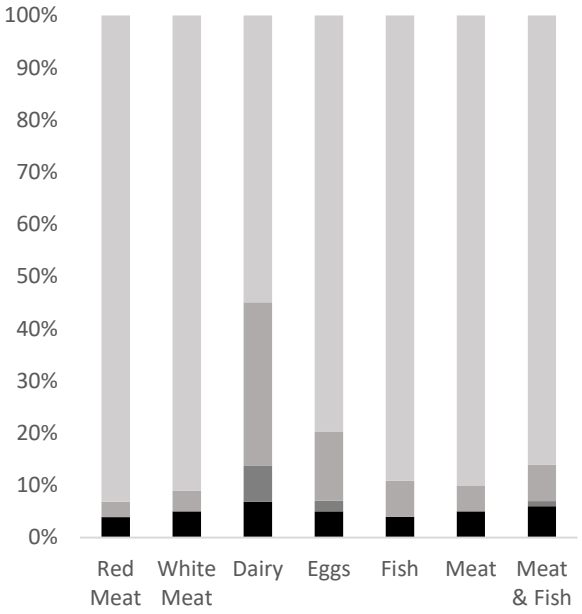
** Confidence intervals (to 95%) do not include zero*

In addition to achieving more of their dietary goals than other groups at each point, they were more successful than the general sample in meeting reduction goals (or, in this case, the goal of not consuming any of these foods) for red (96.1% at one month, 97.7% at three months and 98.6% at six months) and white (95.1%, 98.8% and 97.2%, respectively) meat, as well as for fish (96.0%, 96.5% and 98.6). Despite being the only group planning not to consume dairy and eggs,

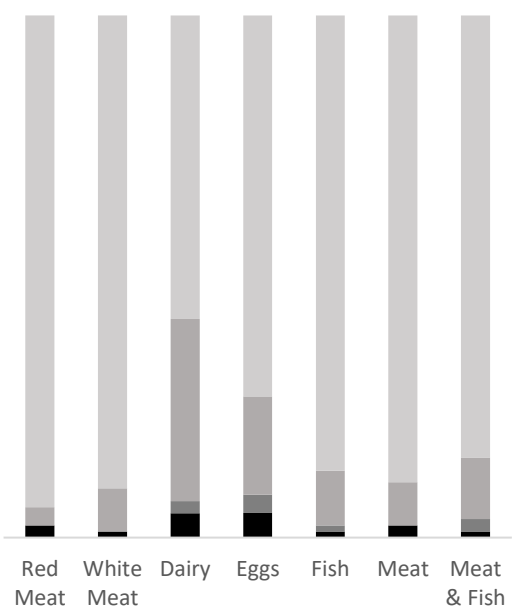
they were also the most successful in meeting their goals for both – 77.7%, 98.9% and 97.2% for dairy and 91.0%, 89.5% and 91.4% for eggs.

Figure 6.15 Dietary changes for planned vegans

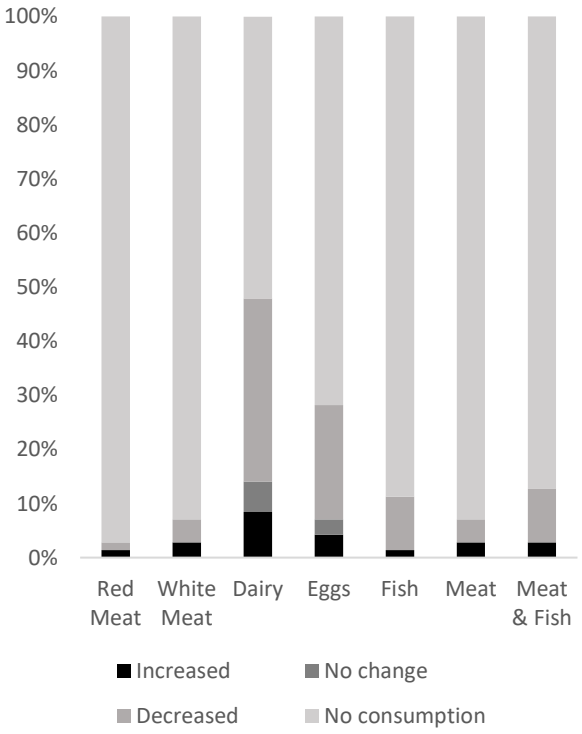
a) … from zero to one month



b) … from zero to three months



c) … from zero to six months



In nearly all areas, planned vegans were more likely to decrease their consumption than to eat more or the same amount at one, three and six months. At six months, those who were consuming were more likely to reduce their white meat (4.2%), dairy (33.8%), egg (21.1%), fish (9.9%), meat (4.2%) and total meat and fish (9.9%) consumption than to eat the same or more (4.8%, 14.1%, 7.1%, 1.4%, 2.8% and 2.8%, respectively).

They were most likely to consume dairy at each point, though they were significantly less likely to do so at three or six months (46.4% at zero months, 31.6% at one month, 15.1% at three months and 18.3% at six months).

More decreased (8.6%) than increased (4.3%) their dairy consumption from one to three months, though the reverse was true from three to six months (3.3% and 13.1%, respectively).

While 22.8% consumed eggs at zero months, 9.0% did so at one month, 11.6% at three months and 7.0% at six months. Egg reductions exhibited oppositional trends to those of dairy, with more increasing (4.4%) than decreasing (2.9%) from one to three months and more decreasing (9.8%) than increasing (1.6%) from three to six months.

The proportion of participants successfully following a fully vegan diet nearly doubled by six months (68.1%), with the remainder primarily following a vegetarian (23.6%) or pescatarian (4.2%) diet (see Table 6.8, below). As with other dietary groups, planned dietary categories changed

over time for some participants, such that 19.4% no longer planned to be vegan after six months. 9.7% planned to be vegetarian and 8.3% to eat meat.

Table 6.8 Current dietary category: planned vegans

	Vegans	Vegetarians	Pescatarians	Meat Reducers	Non-reducers	n
0 months	36.41%	35.92%	12.62%	13.59%	1.46%	209
1 month	54.90%	26.47%	7.84%	4.90%	5.88%	102
3 months	64.37%	21.84%	4.60%	6.90%	2.30%	87
6 months	67.61%	22.54%	2.82%	4.23%	2.82%	71

Dairy and egg reductions were somewhat less consistent than those for red meat, white meat or fish, suggesting a prioritisation of reductions for the latter two (see Figure 6.15, above). While vegans were somewhat more likely to decrease their consumption of dairy from one to three months, they were more likely to then increase their consumption from three to six months. The reverse was true for eggs. These inconsistencies may have been due to a trend that emerged within focus groups, that of *near-vegans* (22.2% of vegans within focus groups), who were not fully following a vegan diet and may have had particular exceptions to their veganism (see Chapter 8 and Chapter 9).

6.3.5 Summary

In every component of reduction, planned abstainers were more likely to meet their goals than those trying to eat less. It is possible that reduction may not present a clear enough goal for successful behaviour change, with meat reducers more likely to consume more or the same amount of meat over time than to eat less. Goals are a key component of any behaviour change model (Michie *et al.* 2005; 2014) and while meat reduction can present a dietary goal, this may need to be clarified or it may best serve as a step toward a veg*n diet. Pescatarians, who were extremely likely to meet their abstention goals, were significantly less likely than veg*ns to meet their reduction goals, with only 47.1% doing so at six months. Total abstention (i.e. veganism) was the goal that participants were most likely to achieve, despite the majority already following such a diet in all other categories (e.g. most planned pescatarians were generally already pescatarian).

The higher success of abstention over reduction could in part be due to the nature of a clear goal but may also be due to the nature of eating and the construction of a meal. By eating less consumers may be able to maintain familiar habits and, in doing so, rely on conscious actions and decisions when eating meatless or vegan meals (see Chapter 8 and Chapter 9). Meals may remain predominantly conceptualised as centred around a meat-type element, with red meat the most esteemed option (Twigg 1981; 1979). Red meat reducers and pescatarians who increase their consumption of white meat or fish may be continuing to rely on familiar meal constructs. Other elements may also impact the greater likelihood in achieving abstention goals, including a commitment to specific motivating factors (see Chapter 7 and 9.4) or barrier perceptions for those maintaining components of previously-formed omnivorous habits (see Chapter 8 and Chapter 9).

However, the identified trends do not account for discrepancies within campaign and sociodemographic groups. With the potential for wide variation in reduction journeys, an understanding of where and how such variations may emerge is essential for a deeper understanding of how dietary habits change and how such changes can be promoted.

6.4 Variations within reduction trends: campaigns and sociodemographic groups

6.4.1 Campaign dietary changes: greater reductions in vegan campaigns but an increasing proportion of abstainers across campaigns

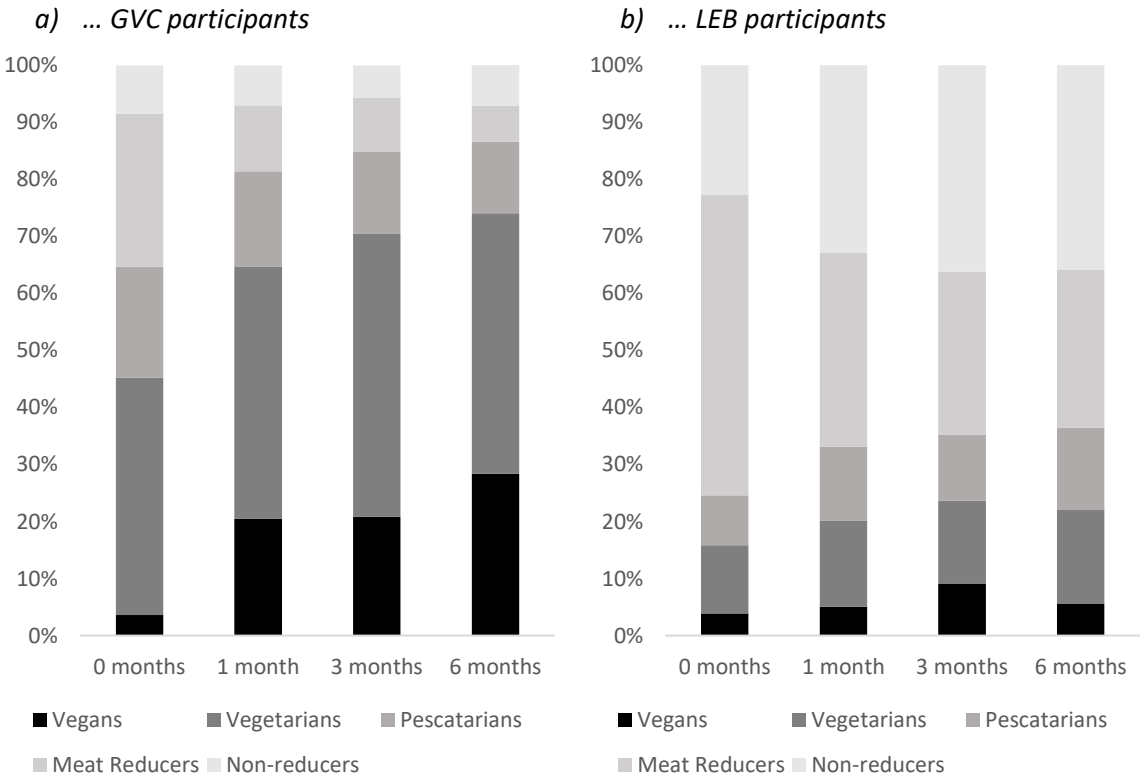
In support of sociodemographic characteristics described in Chapter 4, campaigns seem to have reached overlapping but distinct groups – with those in reduction campaigns less likely to pursue or achieve a fully veg*n diet. As discussed in Chapter 5, the participants in vegan campaigns were most likely to be vegetarians or pescatarians, while those in reduction campaigns were most likely to be meat reducers or non-reducers. Those within vegan campaigns generally reduced more and were more likely to meet their reduction goals. However, across campaigns an increasing proportion of abstainers was also evident over time.

Within the two largest campaign samples, those in the Great Vegan Challenge (GVC) tended to reduce more over time than those in the Let's Eat Better (LEB) Pledge. Though the GVC

participants were consuming lower quantities in each AFP category (see Chapter 5), they also reduced by larger amounts for white meat, eggs, dairy, total meat and total meat and fish (see Appendix 11). For instance, GVC participants reduced dairy by $\bar{x}$=1.18 at one month, 1.52 at three months and 1.27 at six months, while those in the LEB reduced by $\bar{x}$=0.15, 0.43 and 0.44.

Within both the GVC and LEB samples there were increases to the number of veg*ns and pescatarians but increases were much larger amongst the GVC sample and greatly exceeded the proportions initially pursuing abstention diets (see Figure 6.16, below). Within the LEB, 5.6% were vegan at six months, compared to 5.3% who planned to be at zero months and 16.50% were vegetarian, compared to 11.4% who planned to be. Within the GVC, the proportion of vegans was over eight times larger at six months than at zero, with 28.4% following a vegan diet, compared to 22.2% planning to be at zero months. 45.7% of GVC participants were vegetarian at six months, compared to 39.4% planning to be at zero.

Figure 6.16 Current dietary category within campaign samples



Amongst other campaigns, additional dietary variations also emerged over time. Those in the 3DV were the most likely to be vegan (21.3% at zero months and 41.7% at six months) or vegetarian (34.0% and 33.3%, respectively) at any point during the research period, while those in

the PTC were the most likely to be consuming meat (77.4% at zero months and 66.7% at six months). Those in the PTC ate the most red, white and total meat at the start of the campaign and, on average, were consuming more red, white, total meat and total meat and fish after six months (see Appendix 11). The GVUC and iAnimal samples were extremely small for longitudinal analysis, but average reductions were evident in both campaigns over time and can be seen in Appendix 11.

Table 6.9 Achievement of initial goals at six months within campaign samples

a) … Great Vegan Challenge participants

		Reported consumption at 6 months				
		Vegan	Vegetarian	Pescatarian	Meat Reducer	Non-Reducer
Planned consumption at 0 months	Vegan	**63.33%**	26.67%	3.33%	6.67%	0%
	Vegetarian	21.67%	**73.33%**	3.33%	1.67%	0%
	Pescatarian	11.11%	11.11%	**72.22%**	0%	5.56%
	Meat Reducer	10.53%	21.11%	0%	**26.32%**	42.11%

n=127 Met goal: 63.8% Surpassed goal: 18.1% Did not meet goal: 18.1%

b) … Let's Eat Better Pledge participants

		Reported consumption at 6 months				
		Vegan	Vegetarian	Pescatarian	Meat Reducer	Non-reducer
Planned consumption at 0 months	Vegan	**73.08%**	15.38%	3.85%	0%	7.69%
	Vegetarian	0%	**88.24%**	9.8%	1.96%	0%
	Pescatarian	0%	8.51%	**76.60%**	14.89%	0%
	Meat Reducer	0.54%	2.69%	3.76%	**76.34%**	16.67%
	Non-reducer	0%	0%	2.17%	45.65%	**52.17%**

n=352 Met goal: 47.7% Surpassed goal: 11.6% Did not meet goal: 34.4%
Non-reducers (planned): 6.3%

Those in the GVC were more likely to meet or exceed their reduction goals (81.9% of GVC and 59.3% of LEB participants) (see Table 6.9, above). While 11.6% of LEB participants exceeded their reduction goals, 18.1% of those in the GVC did so. Amongst planned meat reducers, 31.6% in the GVC and 7.0% in the LEB had become abstainers after six months. In the GVC sample, at six months 21.7% of planned vegetarians, 11.1% of planned pescatarians and 10.5% of planned meat reducers were consuming a vegan diet and 11.1% of planned pescatarians and 21.1% of planned meat eaters were consuming a vegetarian diet.

Those in vegan campaigns were more likely to shift dietary category over time (in addition to being more likely to plan to do so at the campaign start, as discussed in Chapter 5). However,

reduction campaigns drew a larger proportion of meat reducers and, in particular, more non-reducers. Both types of campaigns may thus serve complementary roles, though those in the LEB were much less likely to meet or exceed their initial goals and, as discussed in 6.3.1, those continuing to consume meat may be likely to become temporary reducers and stop reducing over time. For those willing to participate in a vegan campaign, it may be that this option is likely to result in greater reductions, possibly through compelling participants to practice such a diet and, in doing so, to abandon previous, omnivorous habits (see Chapter 9).

6.4.2 Amongst sociodemographic factors age and gender present key dietary distinctions

As other researchers have found (Lee and Simpson 2016; e.g. Corrin and Papadopoulos 2017; Thomas 2016), age and gender appear to have been particularly meaningful in understanding dietary trends within this sample of reducers. Gender emerged as a highly relevant category, with men eating more and reducing less in every category but fish than women, who reduced fish less and were eating slightly more than men at six months. Older and high earning individuals also ate more fish, while younger participants ate more red meat. In addition, the youngest groups reduced fish and dairy the most, while being – along with those earning low incomes and those without a degree – the most likely to plan to or to become vegan. These groups were also more likely to not consume certain AFPs. Older participants and those with a degree were more likely to plan to be meat reducers. While those without a degree generally reduced more in every category, those over 55 were not very successful at achieving planned reduction goals.

As discussed in 5.3, men (19.9% of participants) were more likely to be meat eaters at the campaign start than were women (79.4% of participants). On average, they were also eating 37% more red and white meat, 24% more fish, 43% more total meat and 37% more total meat and fish than women. Over the research period, men reduced red, white and total meat less than women (see Figure 6.17, p. 155). However, while men were eating more fish at the start ($\bar{x}$=0.72 for men and $\bar{x}$=0.58 for women), they successfully reduced fish more than women from zero to one (Δ=0.08 servings for men, 0 for women), to three (Δ=0.26 and 0.09, respectively) and to six months (Δ=0.32

and 0.09). This could suggest women, who tend to be more health-focused (Corrin and Papadopoulos 2017), may be more likely to be using fish as a replacement, perhaps believing it is a healthier substitute. Meanwhile, while women reduced their white meat consumption by $\bar{x}$=.07, men were consuming slightly more after six months (Δ=-.07), suggesting that they may be more likely to use this as a substitute for red meat.

Figure 6.17 Categorical reductions from zero to six months within gender groups

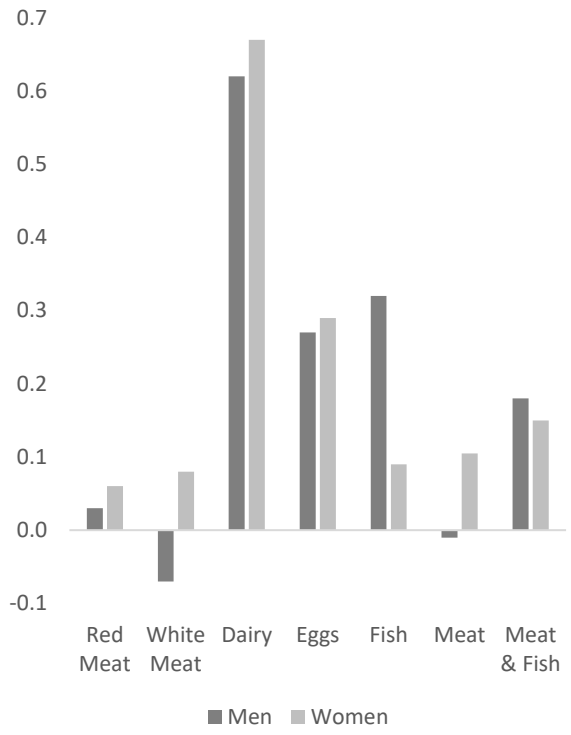
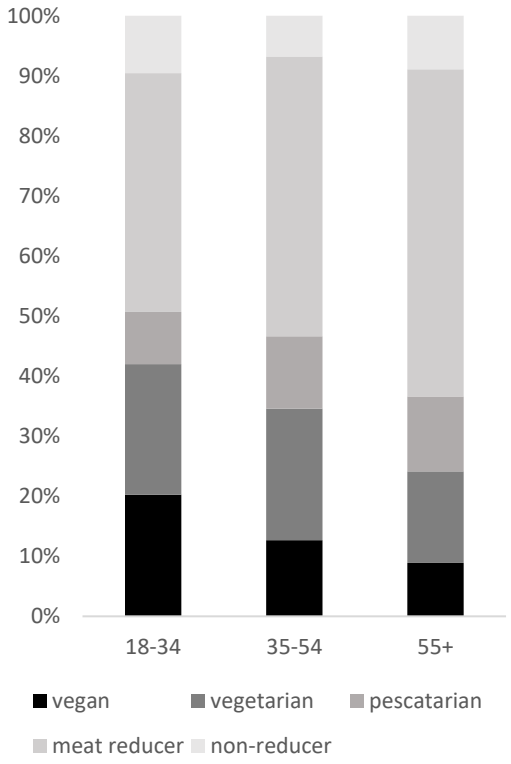


Figure 6.18 Planned dietary category at zero months within age groups



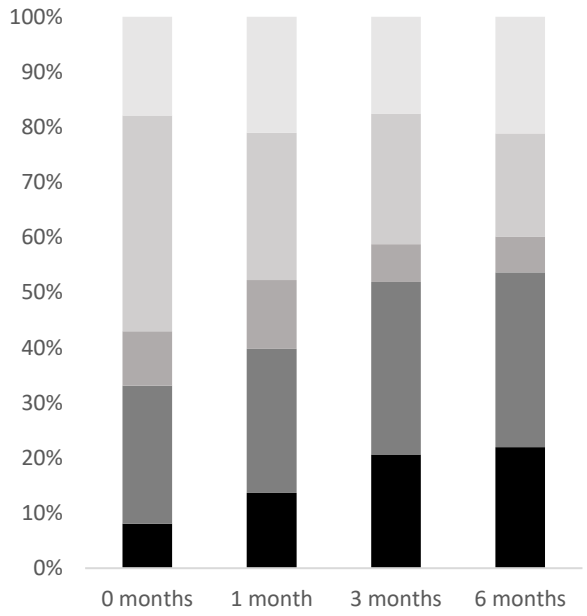
As with women, younger individuals were more likely to be or become abstainers (see Figure 6.18, above). Those 55 and older were, instead, most likely to be or plan to be meat eaters. This persisted throughout the research period, with 21.8% or 18 to 34-year-olds vegan at six months, 13.5% of 35 to 54-year-olds and just 6.9% of those 55 and over (see Figure 6.19, p. 156). While the former two groups contained a slightly higher proportion of vegans after six months than those planning to at zero months, the reverse was true for those 55 and over.

Younger individuals also ate less dairy and fish, while being more successful in meeting their dietary goals. Those 18 to 34-years-old were the least likely to consume fish (28.5% at zero months and 16.8% at six months) or dairy (17.0% and 33.9%, respectively), while the eldest group was the

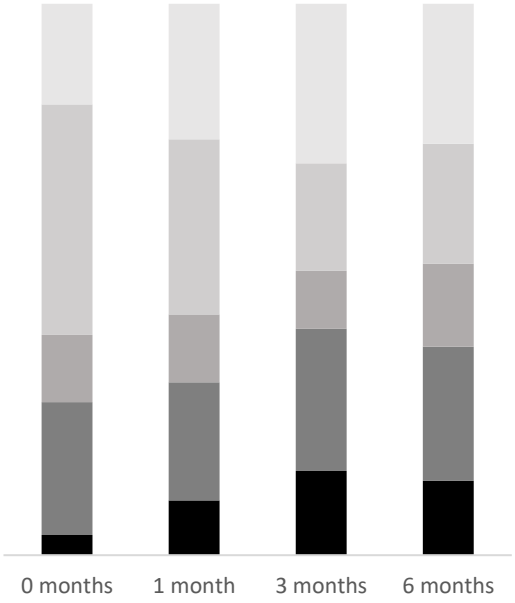
most (48.0% and 39.8% for fish and 12.2% and 16.9% for dairy). Younger individuals also reduced their fish ($\bar{x}$=0.28 from zero to six months, compared to 0.05 for those 35-54 and 0.1 for those 55 and over) and dairy ($\bar{x}$=0.8, 0.67 and 0.52, respectively) consumption the most. At six months, those 55 and over were only successful in their reduction of fish and total meat and fish ($\bar{x}$=0.12).

Figure 6.19 Current dietary category within age groups

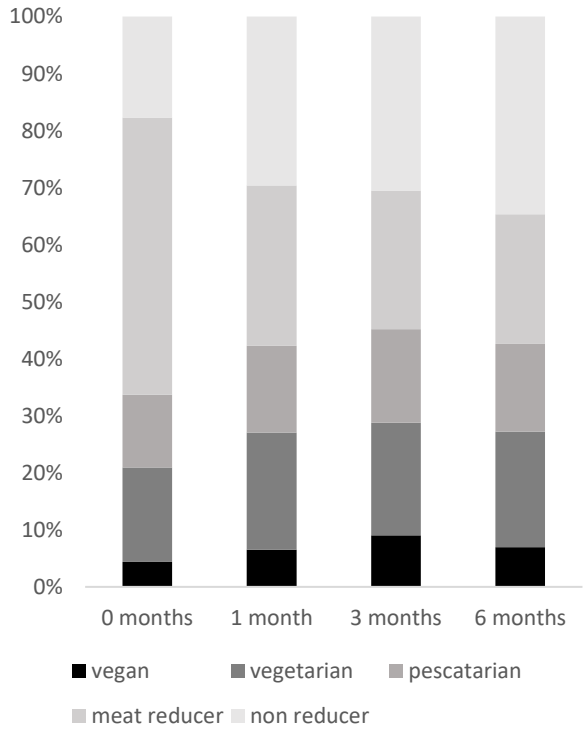
a) … 18 to 34-year-olds



b) … 35 to 54-year-olds



c) … 55 years old and over



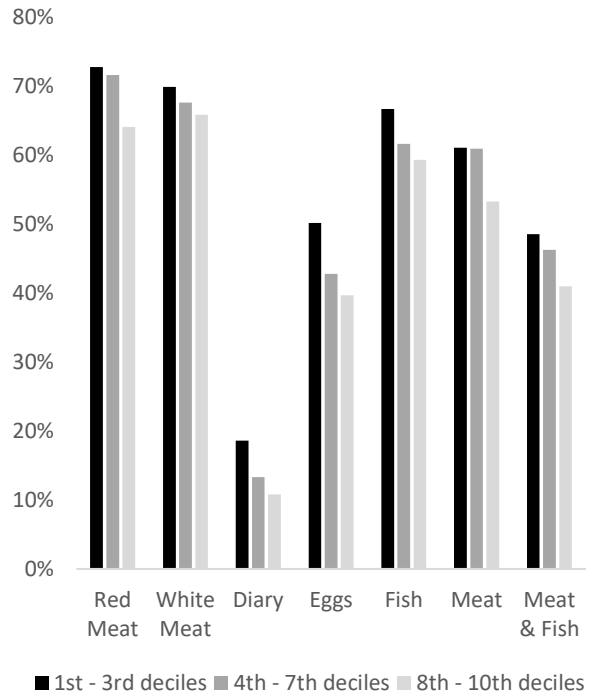
Within the 18 to 34-year-old group, there were over two times more vegans at six months as at zero: 8.1% at zero months, 13.6% at one month, 20.6% at three months and 22.0% at six months. Though at the start only 3.7% of 35 to 54-year-olds were vegan, there were over three times more at six months: 9.9% at one month, 15.3% at three months and 13.5% at six months. In comparison, the 55 and older group, who had a somewhat higher proportion of vegans at zero months (4.4%) than the middle age group, had less growth in this area: 6.5%, 9.0% and 6.9%, respectively.

The youngest group also had the largest increases to the proportion of vegetarians (25.1%, 26.1%, 31.3% and 31.7%, respectively), while this group was roughly equal in the 35 to 54-year-olds at zero (24.1%) and six months (24.4%). The oldest group also had some increases in this area: 16.5%, 20.6%, 19.8% and 20.3%.

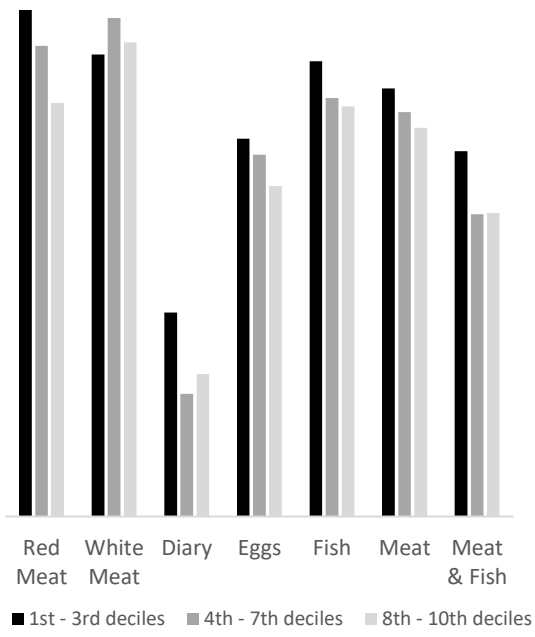
The oldest group were also the most likely to be a meat eater and, after the first wave, the most likely to not be reducing: 17.7%, 29.6%, 34.3% and 34.7%. The youngest group had a greater decrease in meat eaters

Figure 6.20 Categorical non-consumers[8] within sociodemographic groups

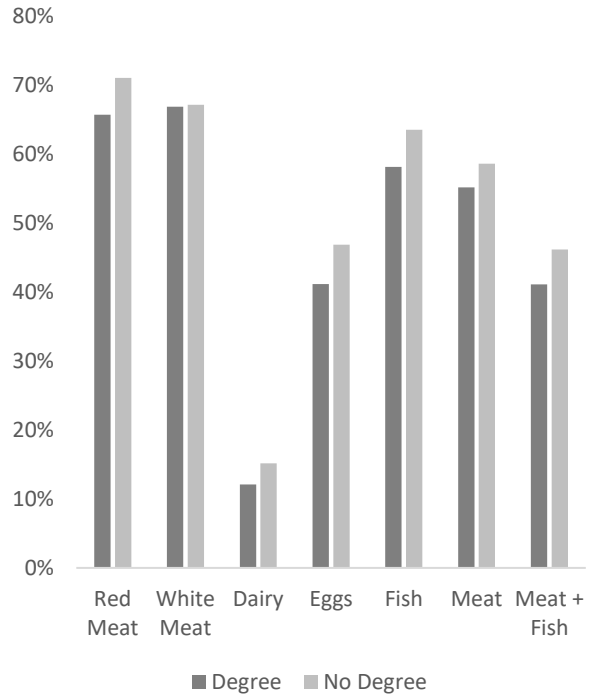
a) … within income groups at zero months



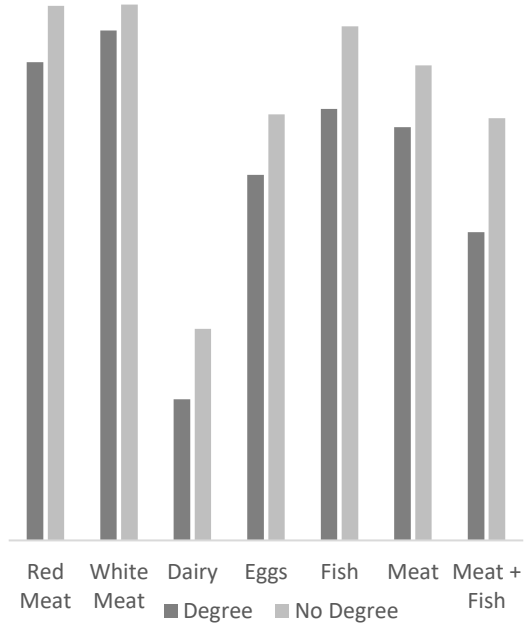
b) … within income groups at six months



c) … if possessing a degree at zero months



d) … if possessing a degree at six months



Those in the lowest income categories (first to third deciles) or without a university degree were also more likely to be abstainers (see Figure 6.20, above). However, this is likely at least

[8] Non-consumers determined by those who reported consuming zero servings during the previous two full days.

partially due to connections with participant age, as those in the youngest group were the most likely to be in the lowest income group. At the start those earning the lowest income were the most likely to be vegan (20.3%, compared to 11.6% of those in the middle deciles and 11.7% of those in the top deciles) and the least likely to plan to be a meat reducer (43.5%, 46.2% and 50.3%, respectively). Those without a degree also reduced more in every category and were more likely to be vegan or vegetarian at each point or to plan to be vegan or vegetarian, while those with a degree were more likely to plan to be a meat reducer or non-reducer (see Table 6.10, below).

Table 6.10 Planned dietary category at zero months based on having earned a university degree

	Vegan	Vegetarian	Pescatarian	Meat reducer	Non-reducer
No degree	15.90%	22.99%	11.27%	43.83%	6.02%
University degree	11.86%	17.33%	11.17%	49.71%	9.92%

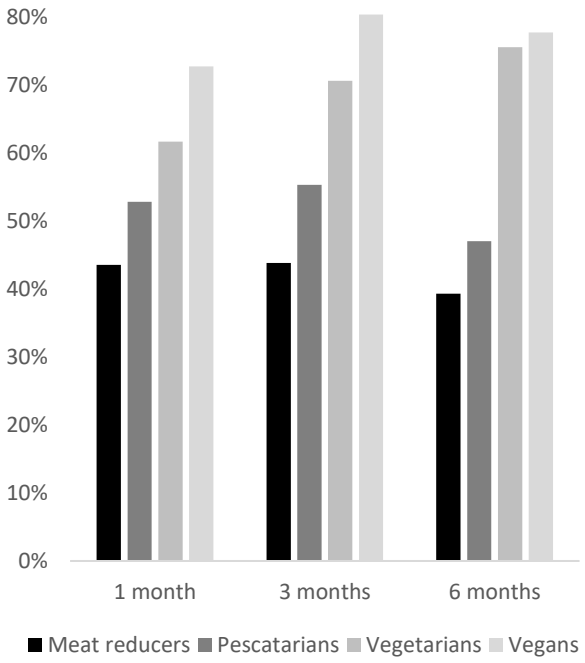
While these characteristics do not depict universal trends (e.g. that women will always reduce more than men) and should not be interpreted as such, they do build on important points raised throughout this chapter and Chapter 5 – that reduction appears to be highly individual and a variety of consumer characteristics can impact the nature of one's reduction journey. In examining the relationship between reduction and campaigns, sociodemographic characteristics are likely to be important elements in targeting specific groups and addressing common consumer trends.

6.5 Conclusions

Findings suggest a tendency toward gradual reductions that are likely to be cyclical or temporary, with abstention goals significantly more likely to be successful. In every category, reducers were more likely to be successful when individuals planned to abstain from foods than when they planned to reduce their consumption (see Figure 6.21, p. 159). Thus, while change amongst this group usually occurred gradually, a final 'push' or clear goal may help minimise AFP consumption and increase the likelihood that initial reductions are maintained afterward. This could be evidenced by the larger reductions achieved within vegan campaigns, where participants

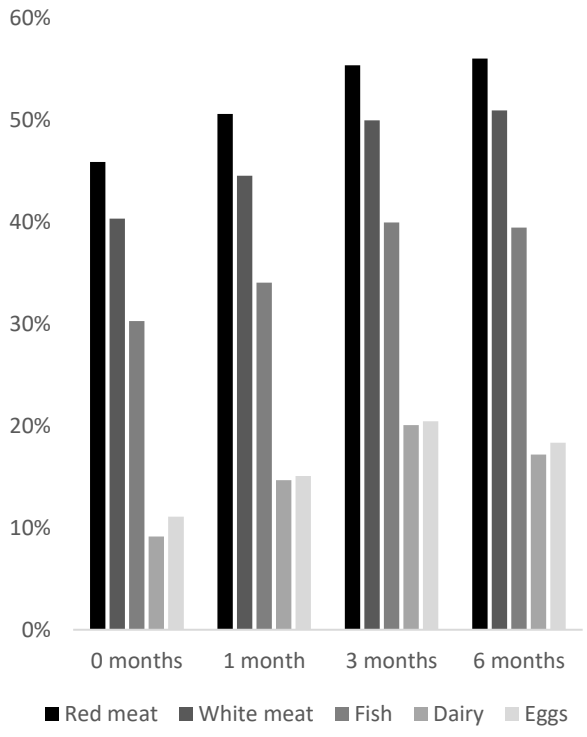
reduced more, on average, and were more likely to surpass their initial dietary goals (e.g. pursuing a vegetarian diet at zero months and consuming a vegan diet at six months). Reduction and vegan campaigns may serve complimentary roles, as is discussed further in Chapter 8 and 9.5, with some campaigns (e.g. LEB and PTC) reaching those who may be uninterested in a veg*n goal, while others (e.g. GVC) may reach those willing to try veg*nism and still others (e.g. 3DV) may predominantly draw those who are already committed to such a diet.

Figure 6.21 Meeting of reduction goals within planned dietary groups



The tendency toward gradual reductions within a hierarchy that prioritises red meat (with this generally being the focus of meat reducers, as discussed in 6.3.1) (see Figure 6.22, below), along with the specific variations identified in 6.47.4 , can be used to predict and support potential dietary trends. The identified *reduction hierarchy* supports current trends in British diets, whereby meat and dairy consumption are decreasing but fish and egg consumption are not (Department for Environment Food and Rural Affairs 2017). For campaigners, policy makers and researchers this may be a vital area for future work. These findings also support Bearsdsworth and Keil (1992)'s typology of vegetarians created nearly three

Figure 6.22 Categorical abstentions



decades ago, though do not necessarily support their suggestion that egg elimination generally precedes that of dairy.

Variations within general trends may highlight the need for campaigns targeting specific groups, as certain individuals were more likely to pursue or achieve a fully pescatarian or veg*n diet. Women and those 18 to 34 years of age, without a degree or in the lowest income group were the most likely to pursue a veg*n diet or to abstain from specific AFPs. Men and those 55 and over were less successful in achieving their reduction goals, though men were more successful than women at reducing their fish consumption.

A clear goal or goals of increasing reduction and, in particular, categorical elimination, may be an important tool to maximise participant success and overall impact. However, as an initial veg*n goal may deter some reducers, campaigns may be most effective if they focus on strategically targeting specific groups. For instance, by focusing on disengaged meat-eating men earning low incomes or conscious flexitarian female university students, interventions could emphasise the motivators and barriers most commonly associated with these groups (see Chapter 7 and Chapter 8). Thus, a broader understanding of what is causing these trends and how successful reduction can be facilitated is imperative in creating interventions for specific groups and general reduction promotion.

Chapter 7 Why: amidst multiple motivators, animal protection is key

7.1 Introduction

Individual elements have emerged within broader reduction trends and goals. While some participants may rely more on fish as a substitute for red meat, others may use white meat and some may, instead, focus on transitioning toward consuming more plant-based foods and replacing previous unconscious omnivorous norms with new ways of eating (Chapter 6). The motivations underlying reduction decisions are a key component in understanding these variations in dietary goals and changes. Within the sample, an increase in animal protection motivation emerged as most closely related with reduction goals and successes, while financial motivators had an oppositional relationship. In addition, environmental and health motivations were most effective when serving in a secondary capacity for those whom animal protection was a primary motivator. Overall, though participants were extremely likely to report multiple motivators, animal protection emerged as particularly important in identifying successful reducers.

7.2 Motivators: Overview

Table 7.1 Motivators at zero months

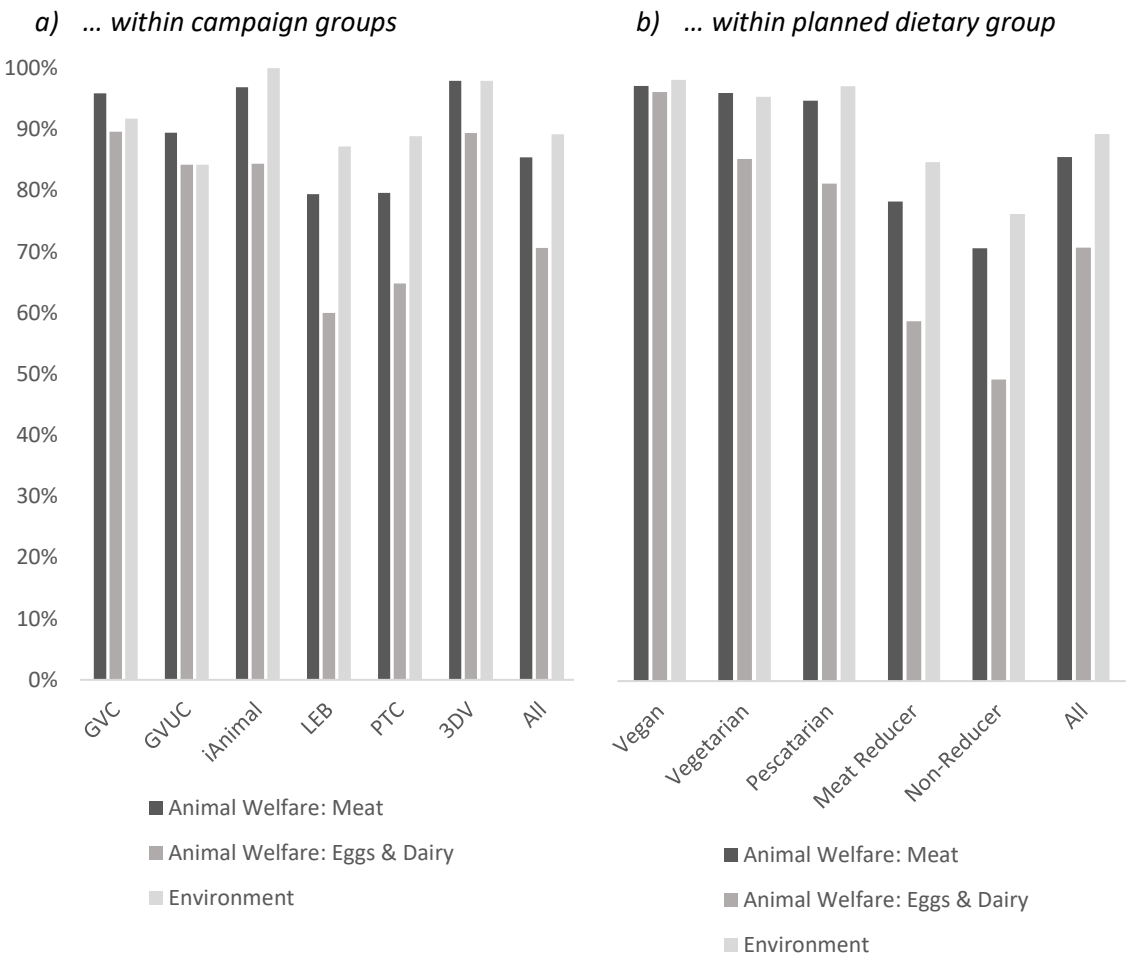
Animal welfare	The environment	Health	Food safety	Financial	Religion
3.4	3.2	2.6	1.9	1.1	0.6

Scaled from 0 (not at all important) to 4 (very important)

Participants generally reported having multiple motivating factors but were most likely to include animal protection, followed by the environment and health. They were a highly aware group, recognising the potential environmental and animal welfare benefits posed by animal food product (AFP) reduction, with vegans and those in animal protection campaigns indicating the

highest levels of awareness (see Figure 7.1, below). Amidst campaign and dietary group variation, these were also the most commonly reported (see Table 7.1**,** p. 161) amongst each of these groups.

Figure 7.1 Environmental and animal welfare awareness at zero months



Includes those who indicated they 'agree' or 'strongly agree' that reduction benefits animal welfare or the environment.

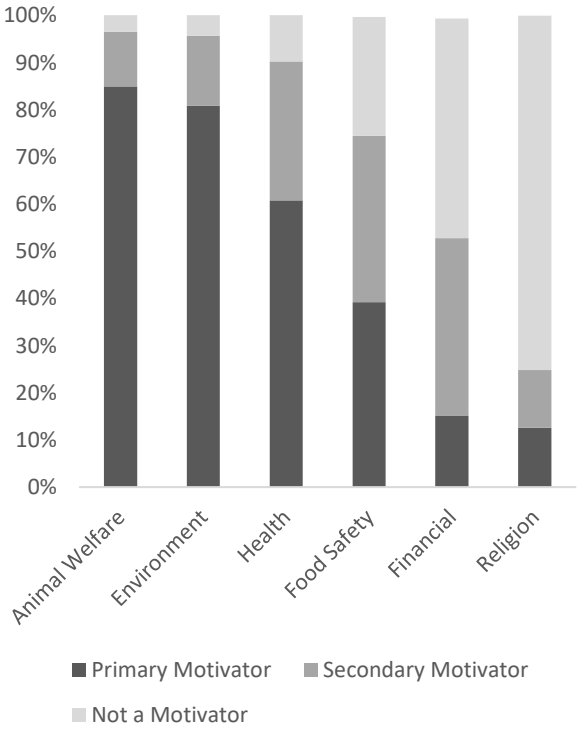
Most participants were motivated by animal welfare (85.0% as a primary and 11.6% as secondary) and the environment (80.8% as primary and 14.9% as secondary) (see Figure 7.2, below). While only ten percent of respondents did not include health as a motivating factor, it was more than twice as likely to be a secondary motivator (29.5%) than animal welfare or the environment. A majority of participants (60.8%) did, however, indicate that it was a primary motivator.

Participants were unlikely to include just one primary motivator and within the three principal motivators (health, the environment and animal welfare) just 16.1% of participants only reported one as a primary motivator and 4.3% included none (see Figure 7.5, below). Just over one-

third indicated that two were primary motivators, while nearly one-half included all three. Of those reporting two motivators, most included animal welfare and the environment (77.6% of those with two motivators) and, where only one motivator, one-half reported animal welfare. Participants were slightly more likely to report health than the environment as their only primary motivator.

Within most dietary and campaign groups, animal welfare and environmental motivators were more prominent than those for health. Animal welfare, followed by the environment, were the highest ranked motivators for planned vegans ($\bar{x}$=3.8 for animal welfare and 3.5 for the environment), vegetarians ($\bar{x}$=3.8 and 3.2, respectively) and pescatarians ($\bar{x}$=3.7 and 3.4), though equal to the environment for meat reducers ($\bar{x}$=3.1 for both) and non-reducers ($\bar{x}$=2.8 for both) (see Figure 7.3). Health was the third largest motivator in every category, with vegetarians having the lowest health motivation ($\bar{x}$=2.8). Vegans had the highest level for each motivator (see Figure 7.3, p. 164).

Figure 7.2 Reported motivations at zero months



Amongst campaign samples, variations from the most common motivation ordering – animal welfare, then the environment and, third, health – included participants in the Part-Time Carnivore (PTC), where the environment ($\bar{x}$=3.3) was a more prominent motivator than animal welfare ($\bar{x}$=2.8) (see Figure 7.4, p. 164). Those participating in the Let's Eat Better Pledge (LEB) had the same average animal welfare and environmental motivation ($\bar{x}$=3.3 for both). In the 30 Day

Vegan (3DV) health (x̄=3.3) was the second largest motivator, while the environment (x̄=3.1) was third.

Figure 7.3 Motivators at zero months within planned dietary groups

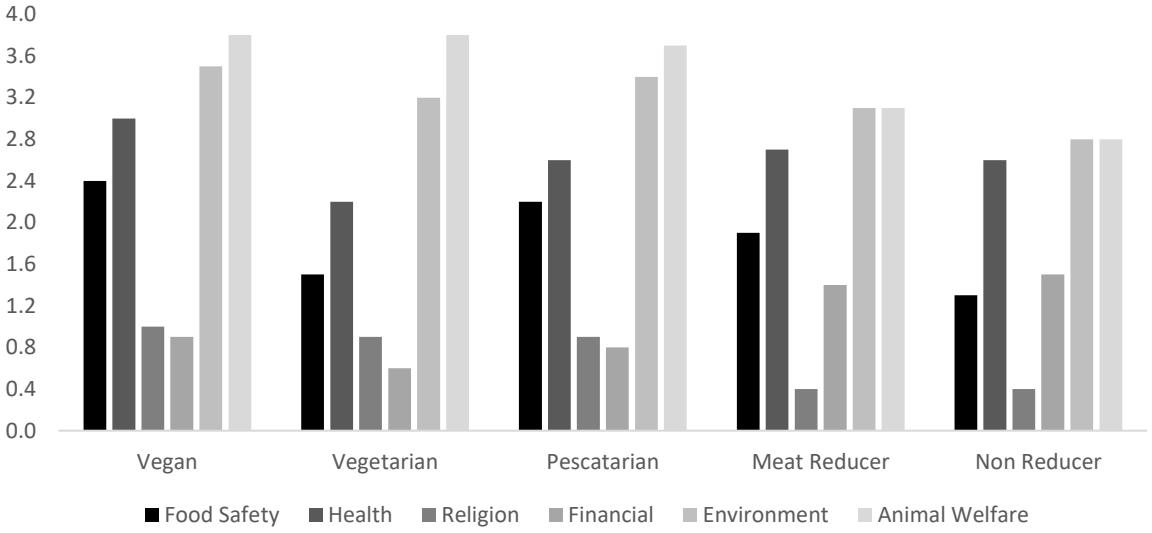
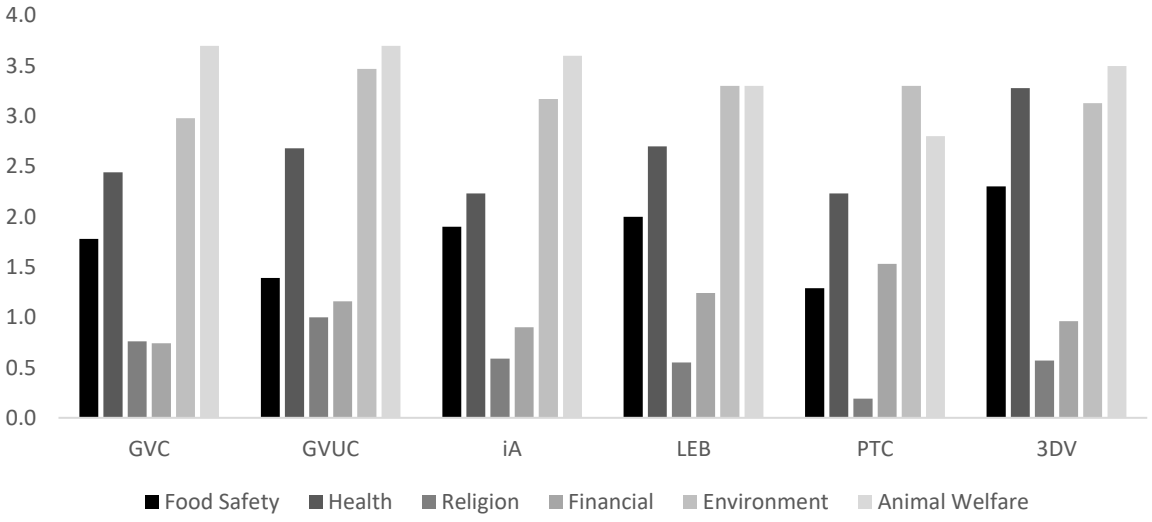


Figure 7.4 Motivators at zero months within campaign samples



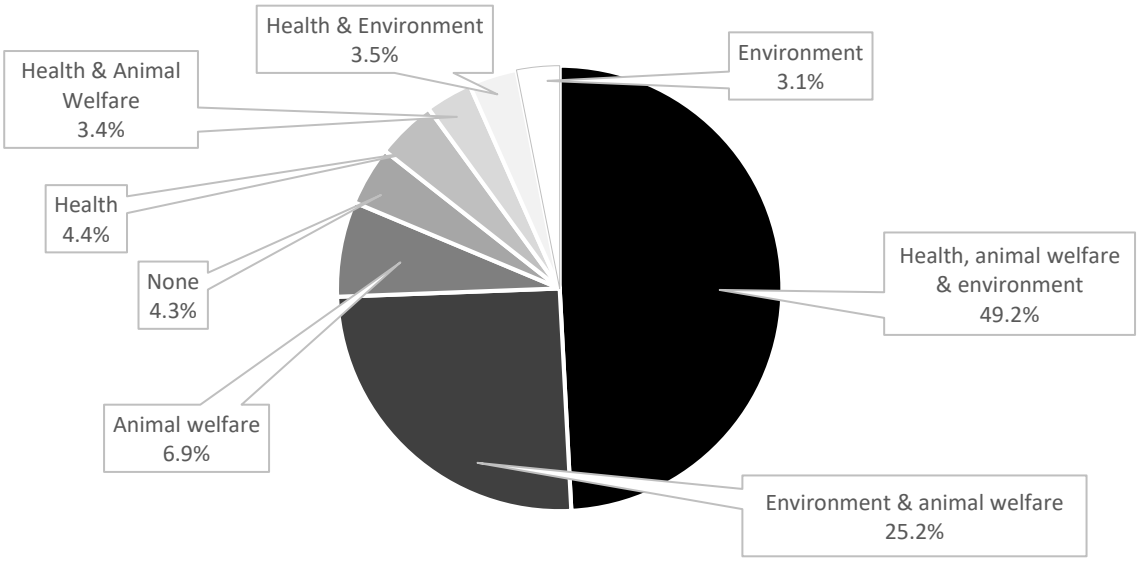
4.0=Very Important, 3.0=Important, 2.0=Moderately Important, 1.0=Somewhat Important and 0=Not at all important

Compared to these three main motivators (animal welfare, the environment and health), others were less prominent. Specifically, while three-quarters of participants reported food safety as a motivator (with slightly more stating it was a primary than secondary motivator), the same percent reported that religion was not a motivator. In addition, nearly fifty percent were not motivated by financial reasons and those who indicated it was a motivator were over two times

more likely to report it as a secondary than a primary motivator. Fewer than ten percent of respondents indicated that they had an additional motivator not included in the survey options. Financial motivators ($\bar{x}$=0.9) were slightly higher for meat reducers ($\bar{x}$=1.4) and non-reducers ($\bar{x}$=1.5) than veg*ns or pescatarians. In all other categories, as with the three principal motivators, vegans generally had the highest levels and meat reducers and non-reducers the lowest.

Vegans were the most likely to categorise all three principal motivators as primary (64.4% of planned vegans), while non-reducers and vegetarians were the least likely to do so (36.9% and 40.6%, respectively). Non-reducers were the most likely to have only one primary motivation (19.1%), followed by vegetarians (18.4%) and meat reducers (14.5%). Non-reducers were also more likely to report only being motivated by health (10.4% of non-reducers, 5.6% of meat reducers and 1.3% or less for all other groups). Vegans were the least likely to include only one primary motivator (6.4%). While income did not appear to be related to the number of primary motivators, those without any formal education were more likely to include just one or two primary motivators. They were also more than three times as likely as those with degrees to have only animal welfare as a primary motivator.

Figure 7.5 Primary motivators at zero months



7.3 Animal protection

Animal protection appears to be an important, if not the most important, motivator in identifying reduction trends and successes amongst this population. In addition to being the highest over-all motivator, it was the most prominent amongst the samples from animal protection campaigns and equal to environmental motivation for those in the LEB campaign. It was also linked to larger reductions and higher levels of successful reduction and elimination. Unlike other motivators where connections may be less readily made and depend upon acquiring additional information, animal protection can be based on and grow from particularly impactful experiences as a child or adult or a general feeling of care or concern for animals. However, such experiences and the potential of animal-based motivators are likely to depend on an individual's knowledge of the treatment conditions for food animals and their capacity to suffer and experience emotions, in addition to one's ethical stance on the treatment and slaughter of these creatures.

Table 7.2 Animal welfare motivation at zero months within planned dietary groups

Vegan	Vegetarian	Pescatarian	Meat Reducer	Non-reducer	All
3.8	3.8	3.7	3.1	2.8	3.4

Scaled from 0 (not at all important) to 4 (very important)

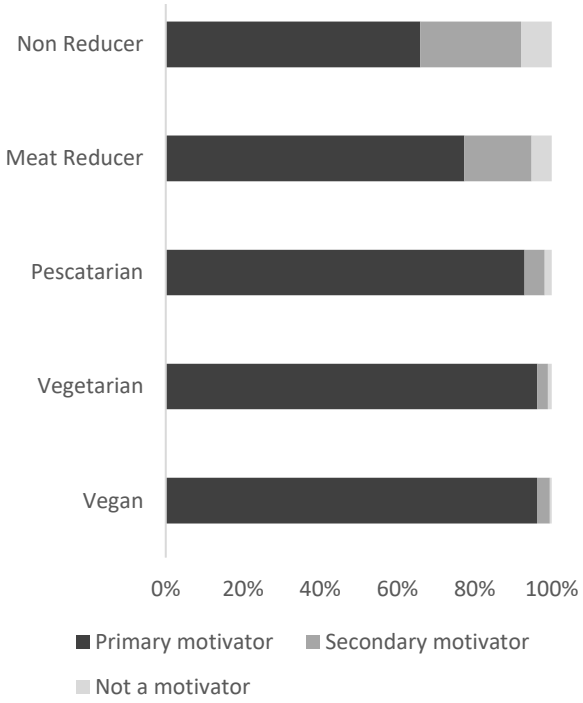
In addition to being the highest reported overall motivator, animal welfare was also the most likely to be a primary motivator (85.0%), with only 3.5% of the sample indicating that it was not a reduction motive. Animal protection motivation was also correlated with current and planned dietary habits (see Table 7.2, above), whereby veg*ns and pescatarians were, on average, more strongly motivated by animal welfare than meat reducers or non-reducers. Animal welfare was the motivator with the greatest difference between the average responses of planned meat eaters ($\bar{x}$=3.1) and veg*ns and pescatarians ($\bar{x}$=3.8). Only 1.0% of abstainers were not motivated by animal welfare, compared to 5.5% of planned meat eaters (see Figure 7.6, p. 167).

Within focus groups animals were a popular discussion topic and the most commonly mentioned motivator (81%), with others being mentioned by no more than 18.2% of participants. Seventy percent did not refer to any additional primary motivators. Many described animal protection as central to their dietary choices, as with new vegan VI1 who explained: 'It was all about

the animals, really'. Similarly, BN3 described her thirty years as a vegetarian and subsequent transition to veganism as 'purely for animal welfare'.

Participants were generally aware of the animal welfare benefits of reduced meat (85.4% of participants) and egg and dairy (70.6%) consumption. Awareness levels were generally highest for vegans and lowest for non-reducers (see 7.2), though most of those planning to consume meat did recognise the benefits of meat reduction (77.1%) for animal welfare (see Figure 7.1). The consumption or planned consumption of meat was also linked to lower awareness regarding the connections between egg and dairy consumption and animal welfare. While 57.3% of planned meat eaters recognised the benefits of reducing their consumption, a further 39.1% were unsure. 87.5% of planned pescatarians and veg*ns indicated that the reduced consumption of eggs and dairy was beneficial for animal welfare.

Figure 7.6 Animal welfare motivation at zero months within planned dietary groups



Most participants who recognised that eating less meat was beneficial for animal welfare still planned to continue consuming it. In some cases, this was discussed in terms of the ethics of killing animals for food, as with meat reducers BL1 and MA1. BL1 explained: 'I have no problem [eating meat] if [the animals] are well looked after', while MA1 described herself as 'more concerned about factory farming than … about killing animals'.

Within focus groups, the distinction between animal welfare and rights was a common area of debate, particularly around the existence of 'high welfare' AFPs and the morality of killing animals

for food. For instance, during one discussion participants disagreed about the merits of animal welfare labelling systems as a strategy to promote reduction:

> Meat reducer and 'part-time vegan' MA2: *I'd like to see some sort of traffic light system [for animal welfare labelling], 'cause I would think this would have so many knock on effects, that would be like high welfare, so maybe organic or even very high welfare where it could be happy rescued chickens…*
>
> Vegan MA4: *I would have a massive issue with that, though, because that's implying that there's such a thing as high welfare and there's not, in my opinion.*

This distinction can be an important element for campaigns in targeting different groups, as, for instance, those supporting animal rights may have dissimilar opinions on topics related to reduction strategies as those who do not hold these views. Veg*ns and pescatarians more commonly acknowledged elements of death or suffering in AFP production and used such knowledge to reject ethical claims for consuming AFPs, generally adopting a perspective more closely aligned with animal rights. Nonetheless, most meat eaters within focus groups did not express views similar to those of BL1 or MA1, with many conveying a desire to stop consuming animal flesh or by-products, as discussed in 6.3.1.

Some meat eaters and reducers may be open to and agree with animal rights perspectives. LO5, a self-described life-long animal lover in her fifties, recounted reflecting on her own dietary habits after her daughter became vegan. Though her initial motivation was to be able to cook 'healthy things' for herself and her newly-vegan daughter, she described earlier struggles encountering the suffering of animals raised for food:

> I'll never forget. … I was about seven and I remember looking into the shed in my uncle's farm and seeing some calves and I said to him, "Why aren't they in the field running around?" And he told me, and I was so upset. … When my mum and dad said, "Oh, we're going to the farm today", I'd say, "Do we have to?" I didn't really wanna go back there.

From a young age LO5 may have learned to combat her discomfort with the suffering of animals by actively avoiding such encounters, thereby potentially supporting continued cognitive dissonance and enabling her ongoing consumption of meat.

Similarly, another meat reducer (LO4) described how she felt unable to participate in campaigns because of the emotional distress she felt thinking about animal suffering: 'I love animals so much. I know it sounds awful, but I just get too upset to get involved in the campaigns'. LO4 also

described eating and purchasing meat as guilt-inducing behaviour, stating: 'I had gone and bought – have to horribly feel bad about saying it – but I bought … a leg of lamb'. Thus, while LO4 described a goal of being vegan, actively avoiding information related to the effects of AFP consumption may have contributed to her own ability to continue eating these foods, even while experiencing negative emotions. LO4 may be a struggling consumer and, more specifically, what Onwezen and van der Weele (2016) refer to as a 'differently struggling consumer' who may experience negative emotions around AFP consumption and yet remain willing to ignore the issue. LO4 expressed actively struggling with feelings of guilt and cognitive dissonance around her continued consumption of AFPs. Those like LO4 may also place the responsibility on external parties (Onwezen and van der Weele 2016), potentially through an expectation that government regulations will or should ensure high welfare standards.

While some participants were aware of the relationship between meat or other AFPs and animal welfare but avoided relevant information, others actively worked to increase their awareness. Near-vegan BN3 described 'go[ing] out looking' for information, while others described using campaigns as a source of new knowledge. MA4, who had recently become fully vegan, explained: 'I think that's why stuff like iAnimal works so well, because once people watch it, they can't un-see it; they can't unknow what happens'. By participating in campaigns, individuals may have more opportunities for increased awareness. Even though pescatarians and veg*ns reported greater animal welfare awareness, current and planned meat eaters did demonstrate growth in recognising the animal welfare impacts of egg and dairy consumption from zero to six months of 0.13 (CI 0.01 to 0.25 and 0.00 to 0.26, respectively).

Table 7.3 Average animal welfare motivation at zero months within campaign samples

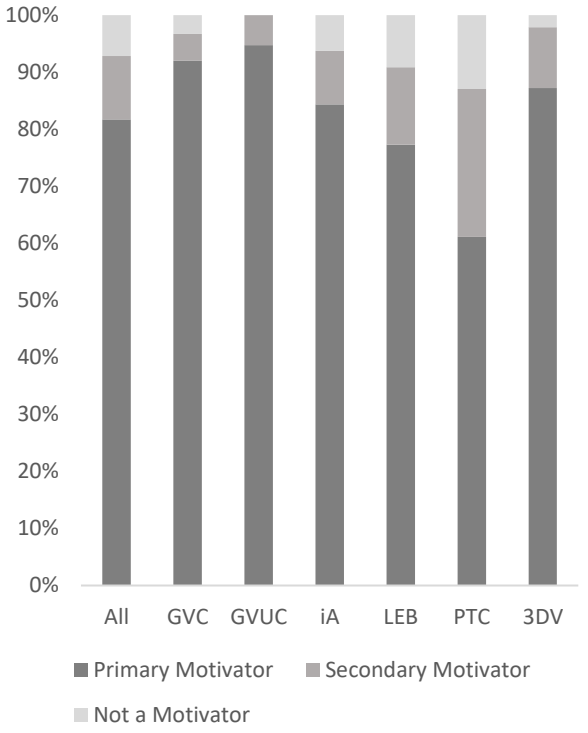
GVC	GVUC	iAnimal	LEB	PTC	3DV	All
3.7	3.7	3.6	3.3	2.8	3.5	3.4

Scaled from 0 (not at all important) to 4 (very important)

Animal welfare was, on average, the strongest motivator for those in animal protection campaigns (see Table 7.3, above). It was also second for the PTC and equal to the environment for LEB participants. Of the campaign samples, PTC participants were the least likely to include animal

welfare as a primary motivator (61.1% of participants), while GVUC participants were the most likely (94.7%). Not all participants in animal protection campaigns did, however, include animal welfare as a primary motivator, with 5.6% indicating that it was a secondary motivator and 1.9% indicating that it was not a motivator (see Figure 7.7, below). Those in animal protection campaigns were, however, more likely to see connections between animal welfare and meat, egg and dairy consumption than those in environmental campaigns.

Figure 7.7 Animal welfare motivation at zero months within campaign samples



Variations in level of animal welfare motivation also emerged in relation to gender, educational attainment and age. Compared to men, women reported higher average animal welfare motivation ($\bar{x}$=3.5 for women and 3.2 for men). While women were more likely to include it as a primary motivator (86.9% for women and 77.2% for men), men were more likely to not report animal motives (2.7% and 6.2%, respectively). Those 34 and under were also, on average, slightly less motivated by animal welfare ($\bar{x}$=3.2 for 18 to 34-year-olds and $\bar{x}$=3.5 for those 35 and over), with those 55 and over the most likely to include it as a primary motivator (89.1% of those 55 and over, 86.1% of those 35 to 54-years-old and 79.2% of those 18 to 34-years-old). Those without a degree also had somewhat higher motivation levels than those with a Bachelor's or postgraduate degree ($\bar{x}$=3.5 for those without and $\bar{x}$=3.3 for those with a degree) and were more likely to include animal welfare as a primary motivator (88.6% and 82.2%, respectively).

Animal welfare motivation was also the most consistently reported over the research period, with 72.8% indicating the same level of motivation at zero and six months, 15.3% reporting lower motivation and 12.0% higher. Just under one in ten indicated a change in the nature of this

motivation at six months (e.g. a secondary motivator becoming primary). Most participants (69.2%) also indicated the same level of awareness at zero and six months for animal welfare and meat, though answers were slightly more variable in recognising the benefits for animal welfare of egg and dairy reduction. 60.0% of respondents indicated the same level of awareness at both points and participants were slightly more likely to indicate an increase in awareness (21.8%) than a decrease (18.2%).

The uniformity in reporting could be linked to the potentially unique nature of animal protection as a motivator. Other forms of motivation have a pre-requisite level of knowledge and understanding (e.g. health, food safety or the environment) and connections may only be made after having access to specific information. This could also be related to those without a degree being more likely to be motivated by animal welfare and more likely to be only motivated by animal welfare (see 7.2). Motivations to minimise one's impact on the suffering of animals were often described by participants as developing from a young age. Individuals may feel that they have 'always loved animals' (LO5) or recall experiences with certain animals or species. Connecting this concern with one's dietary choices may, however, be inhibited by continuously strengthening forces of cognitive dissonance, as discussed by Bastian and Loughnan (2017).

Within focus groups, many participants recounted specific, impactful encounters with animals as foundational in their reduction commitments, enabling a connection between the flesh on one's plate and the living animal. This recognition led four participants (VI1, LO7, LO3 and MA4) to become pescatarian or vegetarian during their childhood. For this group of young abstainers, the connection may have appeared obvious and unavoidable, with medical student and new vegan LO7 explaining: 'I started off becoming vegetarian when I found out what meat was, so I've never really been able to understand how people can love animals and know that they're eating them, regardless of the conditions'.

Experiences with specific animals had the potential to repair the instilled disconnect between the meal and the animal, particularly for meat where the connection may be more readily made. However, such encounters and realisations did not always result in the generalisations

necessary to change habits. Reducer and planned vegan LO4 recounted multiple 'nightmarish' and 'horrible' encounters with suffering farm animals, including a chicken 'running around the yard' with her head cut off and a mother cow and calf being separated from each other: 'All night long, both the mother cow and the calf were bellowing, they were crying for each other. … I couldn't sleep. It was horrible'. An additional encounter when she was in her late teens did result in an impermanent change: 'I got a ride with a truck carrying cows to the slaughterhouse and I ended up getting dropped off at the slaughterhouse. And then I saw them. I watched them as they were terrified. They could smell the blood and then I watched the whole thing and I immediately became vegetarian'. However, the impact of such encounters has the potential to fade over time, with LO4 describing returning to an omnivorous diet two years later. Meat reducer LO1 described her own habits as based on 'a disconnection' after the 'horrific' experience of seeing a goat being slaughtered as a child. After the encounter she stopped consuming goat but continued to eat other forms of meat, leading her to wonder: 'Why am I still eating that?'

Impactful encounters with companion animals (i.e. dogs and cats) were also described as an opportunity to recognise food animals' abilities to experience emotions and to suffer. Identifying similarities between companion and food animals could be a mechanism to break the disconnect between food and animal. For new vegan VI1, forming mental links between the two types of animals resulted in a cognitive shift that prompted her dietary transition to vegetarianism and then veganism:

> I read the fact about pigs being slaughtered and I just started thinking about … how my dog has all these different emotions … and I was thinking [that] … pigs, in fact, are the same. Then how can they be killing them and eating them? ... Once I made the connection, I couldn't unmake it. … So, every time I was playing with [my dog], … I was just thinking, "How can I eat animals that are just like him?"

By recognising food animals' potential to suffer and experience familiar emotions, reducers like VI1 may feel compelled to change their dietary behaviour either immediately – as with the two overnight vegans discussed in Chapter 6 – or at some future point.

Connections between a meal and the welfare of a once-living animal may be more readily made for meat than with other types of AFPs, where concerns about animal welfare and suffering

may be less readily apparent. VI3 described her lack of awareness before becoming vegan: 'I still bought dairy, because … I hadn't made the connection. I didn't really realise that that was just as cruel, which is silly, really, now, looking back, because of course it is'.

A recognition of welfare issues related to egg and dairy production may necessitate further reflection or access to relevant information. Even though focus group participants were generally a highly aware and motivated group, some remained uninformed about welfare issues related to egg and dairy consumption. For instance, when some participants discussed their own decisions to eliminate dairy and eggs from their diets, meat reducer LO1 asked: 'Could you tell me more about the … milk and egg industry?', stating that 'with meat it's quite obvious for [how] consumption can negatively impact animal welfare'. Long-time vegetarian LO3 had looked more into the egg and dairy industries after been asked by a friend, 'What about dairy? Why is that okay?' She described her realisation as 'like a lightbulb. … Well, of course it's not okay. I felt like bashing myself in the head and going, "How could you have been so stupid?"' This prompting led her to commit to a fully vegan diet.

As depicted by the transformative elements of these types of experiences and realisations, animal protection motivators emerged as powerfully impactful for many reducers. Of the motivator categories, animal protection was the most strongly linked to greater reductions. For instance, amongst the sample, where animal welfare was a primary motivator participants, on average, further reduced their dairy and egg consumption from the first ($\bar{x}$=0.44 and 0.24) to sixth ($\bar{x}$=0.72 and 0.31) month, while those where animal welfare was a secondary motivator increased their dairy reduction from $\bar{x}$=0.06 at one months to 0.46 at six months but lost most of their initial egg reduction of $\bar{x}$=0.27 at one month to 0.02 at six months. Those unmotivated by animal welfare decreased dairy consumption by $\bar{x}$=0.32 to one month, before having an average increase of 0.8 servings at six months.

Of the motivator categories, animal welfare was also the most strongly linked to consumption levels. Compared to those for whom it was a motivator, the relatively small proportion of participants unmotivated by animal welfare (3.5%) ate more of each type of food but fish (see

Figure 7.8, below). Where a primary motivator, participants were more than twice as likely to report zero servings of meat in the initial survey (62.7%) than those where it was a secondary motivator (27.0%), while those unmotivated by animal welfare were the least likely to do so (19.6%).

Figure 7.8 Consumption at zero months within animal welfare motivation groups

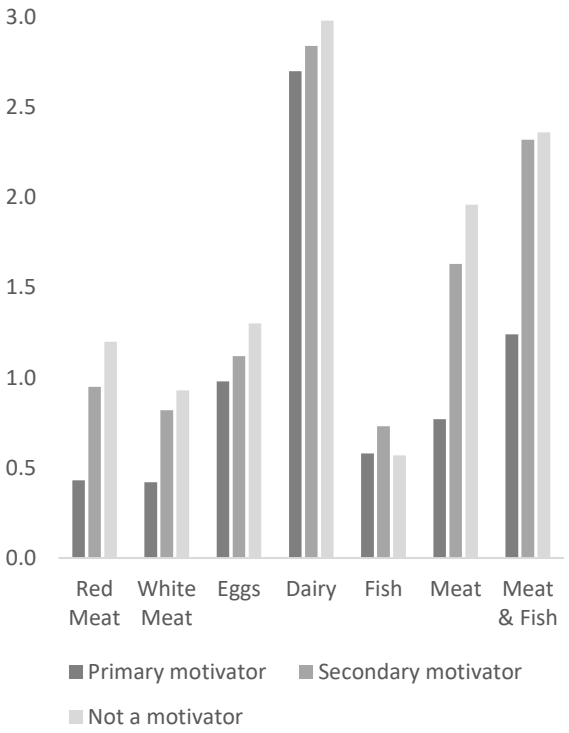
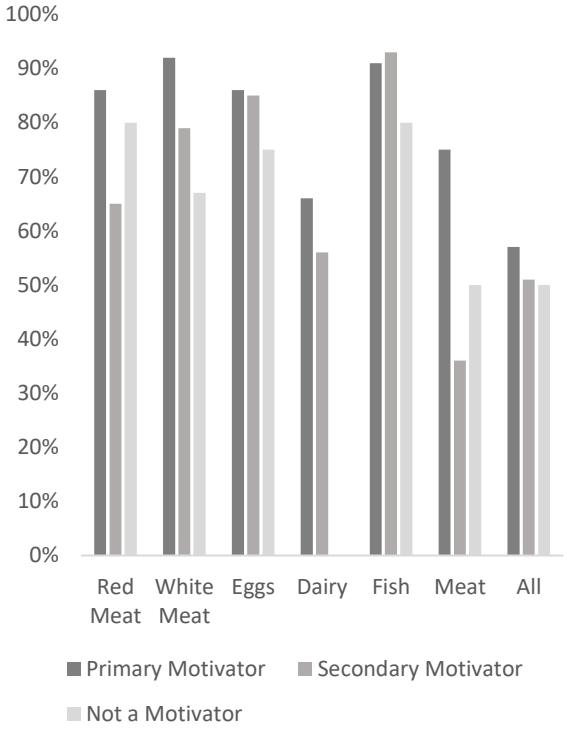


Figure 7.9 Successful reduction at six months within animal welfare motivation groups



Within groups based on the three principal motivators, those consuming the least in any particular AFP category always included animal welfare as a primary motivator (see Figure 7.10, below). Individuals who identified animal welfare as a primary motivator but not health or the environment (6.9% of participants) ate the least red meat, fish, total meat and total meat and fish of all groups and a similar amount of white meat to those motivated by animal welfare and the environment (25.2% of participants). The group listing all three motivators (49.2% of participants) consumed the least dairy. Those groups including animal welfare as a primary motivator were also the most likely to pursue a veg*n or pescatarian diet (see Figure 7.11, below). The animal welfare group was the most likely to plan to not consume meat (71.0%), followed by the environment and animal welfare group (54.0%), health and animal welfare (47.9%) and the group including all three motivators (47.5%).

Animal welfare was also strongly linked to levels of reduction and reduction success. Overall, those for whom animal welfare was a primary motivator were the most likely to meet all of their reduction goals, as seen in Figure 7.9 (p. 174) – 57%, compared to 51% where a secondary motivator and 50% where not a motivator. This group was also the most successful in reducing red, white and total meat, as well as eggs and dairy consumption, though slightly less successful in eating less fish (91%) than those where animal welfare was a secondary motive (93%).

Figure 7.10 Consumption at zero months where animal welfare is a primary motivator

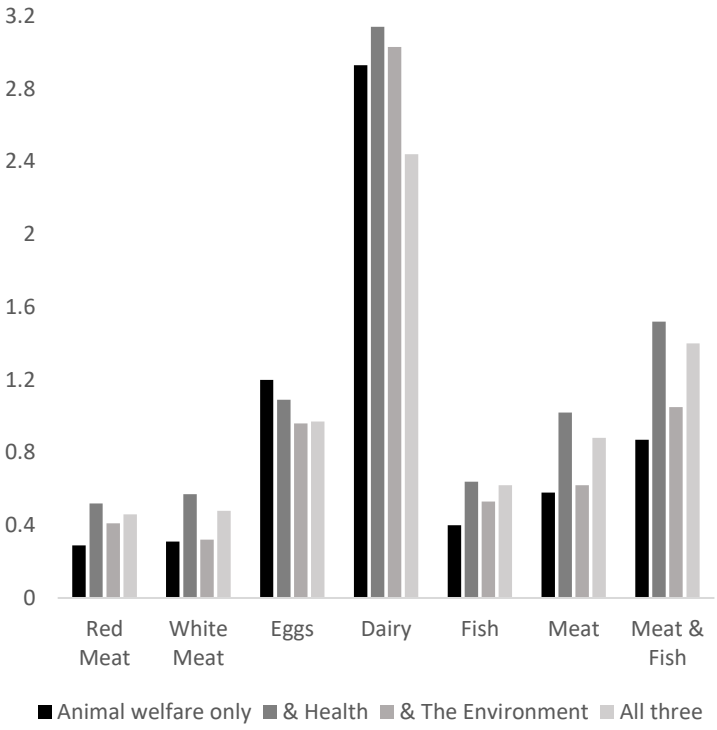
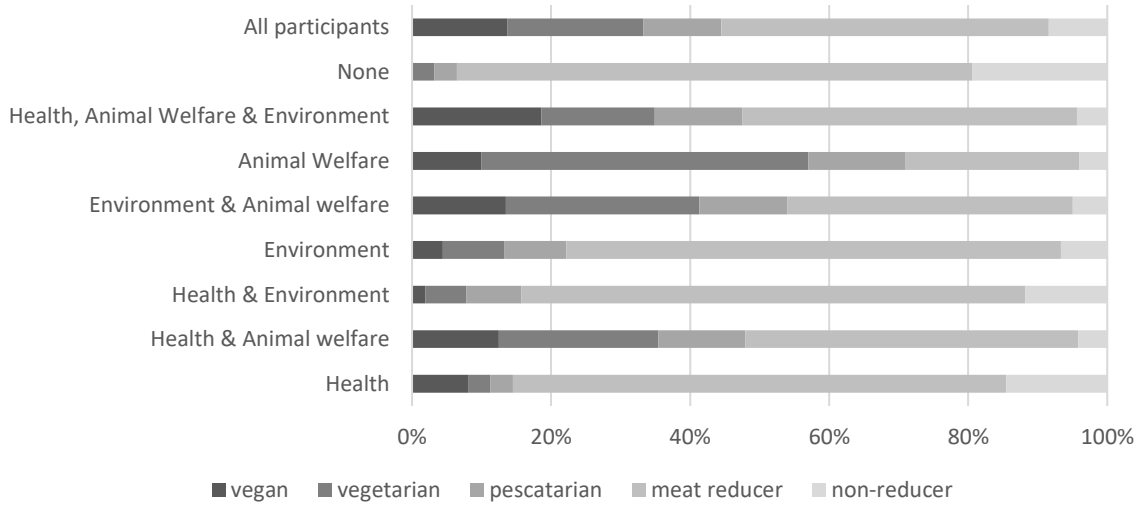


Figure 7.11 Planned consumption at zero months within motivator groups



Amongst this sample, animal protection played a key role in reduction goals, levels and successes. As a source of motivation that can grow from a young age and be linked to personal experiences, encounters or animals, a desire to help animals may be readily connected to a specific meal, particularly when consuming meat. However, for other types of consumption these

connections may be less readily apparent and a lack of awareness, in conjunction with further distancing from the animal source, may inhibit ongoing re-centring of the animal.

7.4 The environment

Minimising one's environmental dietary impact was a primary motivator for the majority of survey participants, though unlikely to be mentioned within focus groups. It was linked to lowered consumption and greater reductions for all AFPs but fish, though more so when the environment was a secondary rather than primary motive. However, consumption was lowest and success highest when participants also included animal welfare as a primary motivator. Within this sample, environmental reasons seem to be likely to be used as and be related to the highest levels of reduction and reduction success when in conjunction with animal protection motivation.

Table 7.4 Average environmental motivation at zero months within planned dietary groups

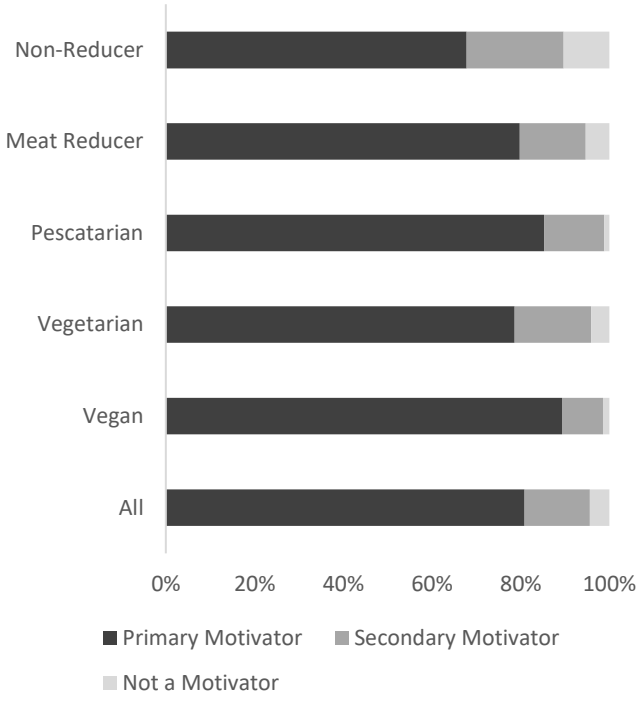
Vegan	Vegetarian	Pescatarian	Meat Reducer	Non-reducer	All
3.5	3.2	3.4	3.1	2.8	3.2

Scaled from 0 (not at all important) to 4 (very important)

Environmental motivation was the second most popular primary motivator (80.8% of participants) and was slightly more likely than animal welfare to be a secondary motivator (14.9%) or a non-motivator (4.4%). Unlike animal welfare, where veg*ns and pescatarians reported similarly high average levels of motivation, planned vegans and pescatarians ($\bar{x}$=3.5 and 3.4, respectively) were slightly more motivated by the environment than were vegetarians ($\bar{x}$=3.2), who were more similar to meat reducers ($\bar{x}$=3.1) (see Table 7.4, above). Current vegans also had much higher motivation levels ($\bar{x}$=3.28) than current vegetarians ($\bar{x}$=3.2), pescatarians ($\bar{x}$=3.3) and meat reducers ($\bar{x}$=3.2). Current and planned non-reducers had the lowest levels of reported motivation ($\bar{x}$=2.8 and 2.7, respectively). While vegans were the most likely to include the environment as a primary motivator (89.3%), vegetarians (78.6%) were slightly less likely than meat reducers (79.8%) to do so (see Figure 7.12, right). Non-reducers were the least likely to be motivated by the environment

(89.7%), but were the most likely to include the environment as a secondary motivator (21.8%), followed by vegetarians (17.2%) and meat reducers (14.8%).

Figure 7.12 Environmental motivation at zero months within planned dietary groups

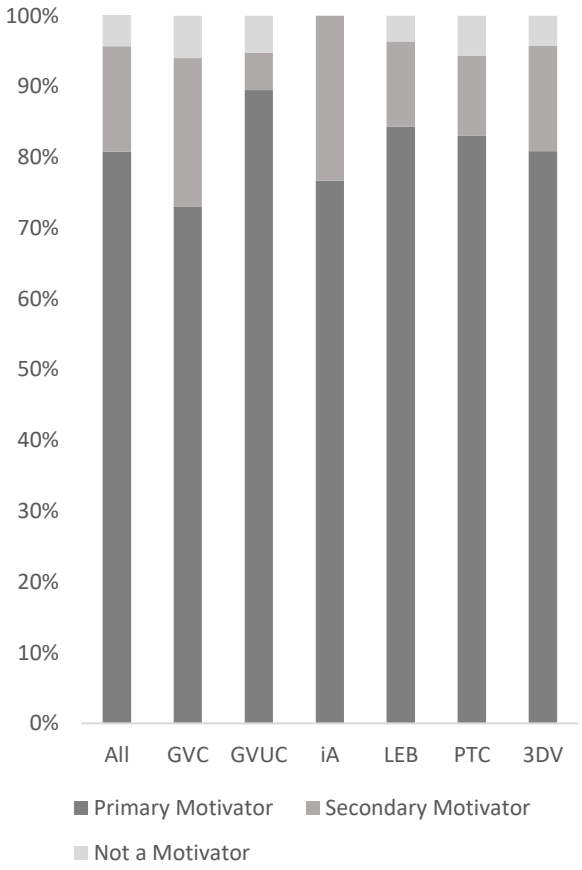


Environmental motivations were central to some participants' decisions and commitments to reduction. For instance, MA3 described the environment, along with animal protection, as pivotal in her decision to become vegan, while BL1 explained that her motivation was 'packaging and plastics and the whole wide environmental issue raised by modern food production'. BL7 also described her decision to become vegetarian as **'**mainly for environmental reasons', but how since becoming vegetarian her awareness of and commitment to animal-related motives had also increased. She described her transition to vegetarianism as occurring in her late teens: 'I've always been concerned about the environment and then I realised that I need to stop eating meat if I wanna [be an environmentalist]'. Thus, the combined effect of BL7's initial concerns about her environmental impact and the knowledge that meat consumption has negative environmental consequences led her to conclude that she needed to become a vegetarian in order to support her identity as an environmentalist.

This knowledge requirement can make those with higher educational attainment more likely to be aware of the impacts of meat consumption on the environment (Kollmuss and Agyeman 2002), with those without any formal education citing the lowest levels of environmental motivation ($\bar{x}$=1.8) and those with a Bachelor's ($\bar{x}$=2.3) or postgraduate degree ($\bar{x}$=2.2) the highest. The abstraction of environmental impacts can make it difficult to create an emotive and personal connection with dietary decisions that may come more readily for animal motivators. While a desire

to reduce animal suffering may be more easily connected to meat consumption, in particular, through encounters with specific animals or the physical embodiment of an animal in the form of meat (7.3), a desire to help the environment may primarily rely on facts and abstract concepts. Even when aware of the negative impacts of consumption on the environment and climate, the complexity of such topics may inhibit true understanding.

Figure 7.13 Environmental motivation at zero months within campaign samples



A lack of awareness and the 'perfect moral storm' (Gardiner 2011) embodied in environmental motivators through high levels of abstraction, dispersion and the fragmentation of agency (see Chapter 2) may limit their potential impact on dietary habits and feelings of responsibility. Participants were unlikely to mention the environment during focus group discussions and when the topic emerged it was generally talked about in conjunction with animal protection, sometimes depicted as a secondary motivator developed after having already transitioned. For instance, vegan LO7 described how 'you can argue for veganism from a health point of view, from a moral point of view, an environmental point of view'. While most discussion participants (82%) mentioned animal motivators, only 18% specifically mentioned environmental factors. Meat reducer BL1 and pescatarian, planned vegan BL3 were the only to exclusively mention environmental motivators.

Some participants (i.e. vegan VI2 and meat reducer MA1) described animal protection as their initial reduction motivator and the environment as a supporting motivator acquired at a later stage of their reduction journeys. VI2, a new vegan in her mid-twenties, had become vegetarian six months prior to becoming vegan and described animals as her initial source of motivation. After

transitioning to veganism, she learned more about dietary impacts on the environment and now described this as an additional motivator. Meat reducer and planned vegan MA1 had previously been vegetarian for many years for animal-related reasons but had returned to occasional meat consumption five years prior. She described how she had recently 'been reading environmental studies and … just become aware of issues' that, in conjunction with animal protection, had renewed her commitment to pursue a veg*n lifestyle.

In general, those in animal protection campaigns were slightly less motivated by the environment than by animal welfare (see Figure 7.13, above, and Table 7.5, below). Nonetheless, an animal protection campaign (the GVUC) had the highest average level of environmental motivation ($\bar{x}$=3.5) and the greatest proportion of those including it as a primary motivation (89.5%). All iAnimal participants also indicated that the environment was a motivator (76.7% as primary and 23.3% as secondary), in addition to 94% of GVC participants (73.0% and 21.0%, respectively) and 95.7% of 3DV participants (80.9% and 14.9%). Within environmental campaigns, a small percentage (3.6% of LEB and 5.7% of PTC participants) reported not being motivated by the environment.

Table 7.5 Average environmental motivation at zero months within campaign samples

GVC	GVUC	iAnimal	LEB	PTC	3DV	All
3.0	3.5	3.2	3.3	3.3	3.1	3.2

Scaled from 0 (not at all important) to 4 (very important)

Animal protection campaign participants were less likely to include environmental motivations than environmental campaign participants were to include animal welfare motivations. For example, while LEB participants had the same average animal welfare and environmental motivation levels ($\bar{x}$=3.3) and were almost as likely to include animal welfare as a primary motivator (77.3%) as the environment (79.6%), GVC participants were more highly motivated by animal welfare ($\bar{x}$=3.7) than by the environment ($\bar{x}$=3.0) and were more likely to include it as a primary motivator (92.0% and 70.4%, respectively). This could suggest that animal protection motivators tend to be more generalisable across groups of reducers than are environmental.

Environmental campaign participants were no more likely to indicate that eating less meat was beneficial to the environment than participants of other campaigns (see Figure 7.4, p. 164). GVC (91.74%), 3DV (97.9%) and iAnimal (100%) participants were the most likely to recognise the environmental benefits of reducing meat consumption, while LEB (87.3%) participants were, along with those in the GVUC (84.2%), the most likely to be unsure (11.6% of LEB and 15.8% of GVUC participants). LEB participants were slightly more likely than those in the GVC to disagree that meat reduction has environmental benefits (1.2% and 0.2%, respectively).

Figure 7.15 Consumption at zero months within environmental motivation groups

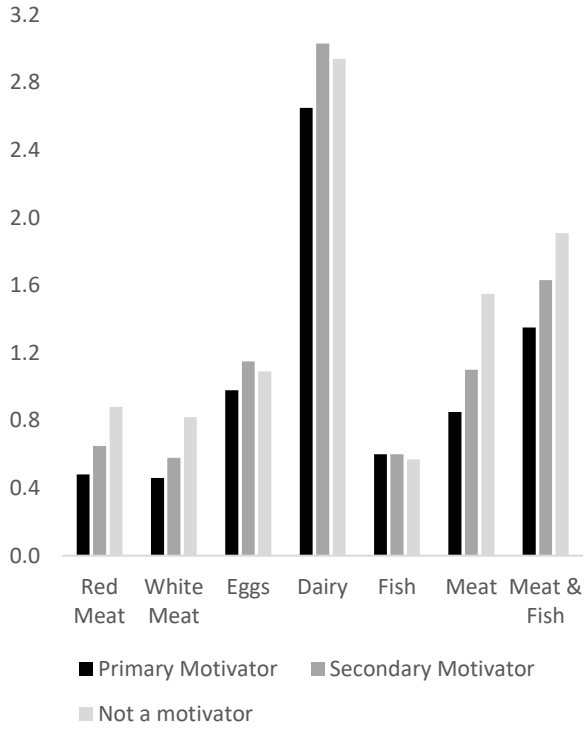
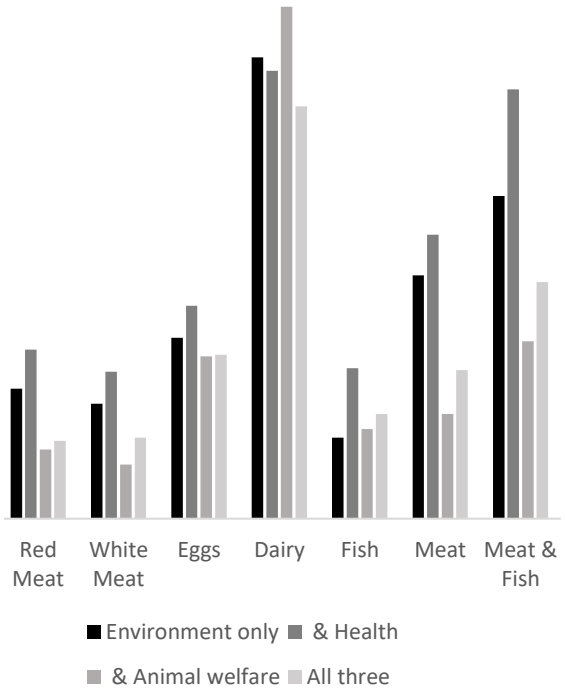


Figure 7.145 Consumption at zero months where the environment is a primary motivator



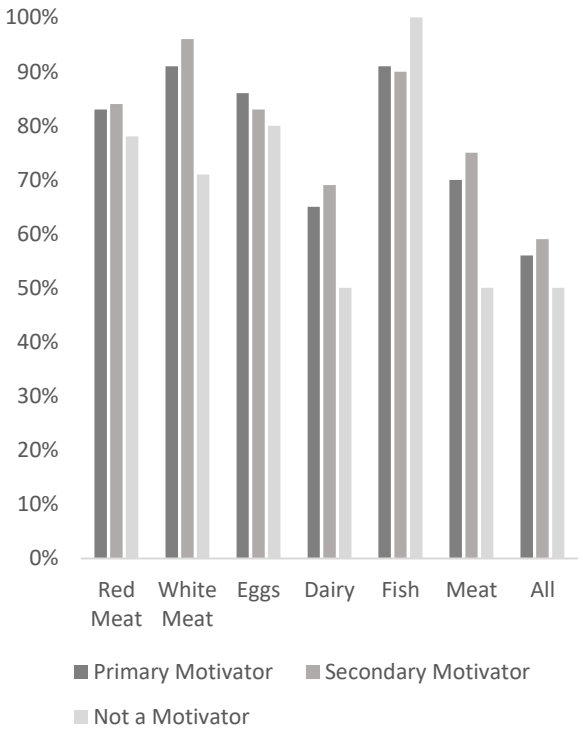
to differences in reported consumption levels (see Figure 7.14, above). Being a primary motivator, in particular, was related to consuming less dairy, total meat and fish and less red, white and total meat. Being a secondary motivator was linked to similar reductions, with the exception of dairy. Fish consumption did not appear to be related to environmental motivation. Potentially, an exclusive focus on one's dietary carbon footprint within conceptions of environmental impact could lead to the neglect of other environmental impacts created through the consumption of fish and seafood. LEB participant BL4, a pescatarian (but self-described vegetarian) and planned vegan,

addressed the connections between the environment and fish consumption directly: 'We're still eating it occasionally, fish and seafood, but I'm more concerned about the carbon footprint'.

Environmental motivation was linked to the lowest consumption levels when it was coupled with animal welfare. Within the three primary motivators, participants were two times as likely to report that animal welfare was their only primary motivator (6.9%) than the environment (3.1%). Consumers for whom the environment was their only primary motivation reported higher consumption for all AFP groups but fish than those who also included animal welfare (see Figure 7.15, p. 180). Of the groups with the environment as a primary motivator, the group that also included health (but not animal welfare) had the highest consumption rates in all categories, except for dairy.

Environmental motivation was also associated with higher successful reductions in all categories but fish. However, as with overall reduction rates, being a secondary, rather than primary, motivator was generally linked to higher success rates. As seen in Figure 7.16 (right), having environmental motivation as a primary, rather than secondary, motivator was only linked to slightly higher success for fish (91% for primary and 90% for secondary) and egg (86% and 83%, respectively) reduction. Instead, having the environment as a secondary motivator was related to the greatest probability of meeting all reduction goals (70% for primary, 75% for secondary and 50% for those not motivated by the environment), as well as in meeting reduction goals for red meat (83%, 84% and 78%, respectively), white meat (91%, 96% and 71%), dairy (65%, 69% and 50%) and total meat (70%, 75%

Figure 7.16 Successful reduction at six months within environmental motivator groups



and 50%). For fish, not being motivated by the environment was linked to greater likelihood in meeting reduction goals (90.6%, 90.2% and 100%).

The high degree of abstraction present in environmental motivation could partially account for why, of the three primary motivators, it was the most likely to change over time, with 55.1% indicating the same level of motivation at zero as six months. However, changes were generally small, with just over ten percent reporting a categorical change (e.g. secondary to primary motivator), though respondents were slightly more likely to report lower (26.7%) than higher motivation levels after six months (18.2%). Most participants (74.6%) also indicated the same level of awareness regarding the impact of meat consumption on the environment at zero and six months. In this area respondents were more likely to indicate a decrease (15.1%) than an increase (10.3%) in their perception of meat consumption's impact on the environment.

While environmental motivators were prominent within this group and related to lower consumption, greater reductions and meeting more reduction goals, these relationships were less straightforward than for animal protection. Reported motivation levels were less consistent over time, while those with lower (i.e. secondary) motivation levels were generally more successful in their reductions. For fish, not being motivated by the environment was linked to larger reductions. Across all areas the additional presence of animal protection motivation was strongly linked to greater reductions. These findings suggest that environmental motivations may generally be most effective in a supportive role, where animal protection is a primary motivator. The reliance on knowledge and high levels of abstraction may inhibit their effectiveness for many consumers, while connections with food's animal source may be more readily called to mind and personal, through the presence of a clearer 'victim'.

7.5 Health

Health-related motivation did not appear to be key to lower consumption or successful reduction for this group, including being inversely related to fish consumption and reduction. The

one exception was dairy, where consumption was lowest and reductions greatest for those most motivated by health. As is discussed further in 8.6, health motivation is likely to be closely related to preconceptions about health maintained not only by the reducer, but by friends and family. Thus, health may play a more important role not as a motivator but as a component of one's knowledge (i.e. psychological capabilities). Specifically, the recognition that it is not necessary to consume particular AFPs to be healthy was related to greater reductions and success (see 8.4), while being motivated by health was not. However, it is also important to note that health motivations were highest amongst the 30 Day Vegan campaign, which was specifically focused on food and had a larger focus on nutritional elements. If this sample had had a greater proportion of participants in this or other campaigns focused on food or health, this motivation may have appeared to be more directly linked to lower consumption or successful reduction.

Table 7.6 Average health motivation at zero months by planned dietary group

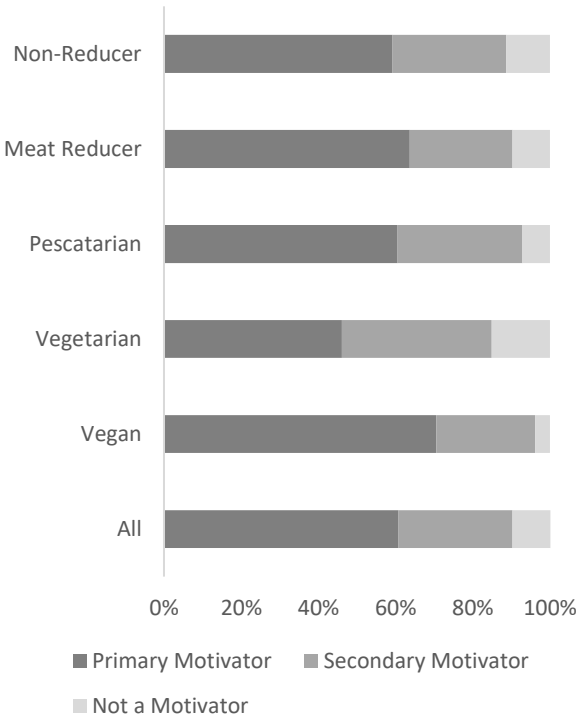
Vegan	Vegetarian	Pescatarian	Meat Reducer	Non-reducer	All
3.0	2.2	2.6	2.7	2.6	2.6

** Scaled from 0 (not at all important) to 4 (very important)*

Of the three principal motivators, health was less likely to be included as a primary motivator for every dietary group and within each campaign, while being the most prominent secondary motivator. Overall, while the environment and animal welfare were, on average, reported to be between 'very important' and 'important', health was between 'important' and 'somewhat important' (see Table 7.6, above). Nonetheless, 60.5% of participants ranked it as a primary motivator, with 9.8% saying that health was not a motivating factor (see Figure 7.17, below). Focus group participants were also less likely to mention health as a motivator than the environment or, especially, animal protection. Of the five participants who mentioned health (15.2% of all focus group participants), four described it as a primary motivator and one as secondary. This group included three meat reducers, a vegetarian and a vegan. Only one participant (vegetarian, planned vegan BL2) did not mention another motivator.

Health's role in motivating reducers may be one that often begins or strengthens after an initial transition, with many new reducers discussing the health benefits they experienced. BL5, a near-vegan of two years in her twenties, described having 'been sick for a while' before her transition. After becoming vegan, she felt healthier, explaining, 'it just makes you realise how much of that depends on food'. VI4, who had been vegan for six months, attributed 'cooking [her] meals from scratch' with 'automatically getting more fruit and veg', a sentiment that was echoed by others (i.e. MA5, VI2 and MA4). After participating in the GVUC as a pescatarian, vegan MA5 explained: 'I really felt the health benefits, amazingly'.

Figure 7.17 Health motivation at zero months within planned dietary group



Planned vegans were the most likely of the dietary groups to include health as a primary motivator (70.5%), with the average vegan indicating that it was 'important' ($\bar{x}$=3.0) but less important than animal welfare ($\bar{x}$=3.8) or the environment ($\bar{x}$=3.5). Vegetarians were the least motivated by health ($\bar{x}$=2.2) and meat reducers ($\bar{x}$=2.7) and non-reducers ($\bar{x}$=2.6) were more likely to include health as a primary motivator (63.7%) than were vegetarians (47.0%) or pescatarians (60.4%, $\bar{x}$=2.6). Meat reducers also comprised the majority of the health-only motivator group (71.0%), which also had the highest proportion of non-reducers (14.5%) of any group.

Variations in health motivation were also visible between gender and age groups. Men were more likely to indicate that health was a primary motivator (70.3% of males and 61.0% of females) and were more likely to include only health and not animal welfare or the environment (6.8% of men and 3.9% of women). The health motivator may, in particular, be used by men and others to combat vegan stigmas (see 8.3). One vegan focus group participant (VI4) who was

passionate about fitness and cross-training – but clarified that her only motivation to be vegan was 'the animals' – discussed her husband's own decision to become vegan three months after her transition: 'He doesn't really call himself a vegan. He tells people that he eats a plant-based diet, 'cause his primary motivation was health and he doesn't want to have a kind of stigma of people thinking he's kind of, you know, a hippie, doing it for the animals'. Thus, by emphasising the health benefits – generally a larger motivator for men than women in this sample and in previous research (e.g. Lee and Simpson 2016) – he distanced himself from a vegan identity (discussed in 8.3) that he may have associated with being emotional or feminine through having compassion for animal suffering (Adams 1990). Self-identifying as 'plant-based' – which may be associated with health rather than animal motivation – instead of veg*n could be utilised by those concerned about social perceptions of veg*n identities.

Others also used fitness as a way to combat veg*n stereotypes, such as vegan BN6 who stated, 'I have so much fun going to the gym wearing a vegan t-shirt and people are like, "You're a girl and you're a vegan? What are you doing?"' Though she had initially been concerned about getting enough protein on a vegan diet, she was pleased by improvements to her fitness since transitioning her diet: 'I've been going to the gym for years and I've made far more progress since going vegan than I did beforehand'.

Older groups were also somewhat more likely to indicate that they were motivated by health ($\bar{x}$=2.4 for 18 to 34-year-olds, 2.6 for 35 to 54-year-olds and 2.8 for those 55 and older). They were also more likely to indicate that health was a primary motivator (79.2% of 18 to 34-year-olds, 86.1% of 35 to 54-year-olds and 89.1% of those 55 and older) and less likely to indicate that it was a secondary motivator (14.7%, 11.4% and 8.9%, respectively).

Within the campaigns, iAnimal ($\bar{x}$=2.2) and Part-Time Carnivore ($\bar{x}$=2.2) participants were lowest on health motivation, while 30 Day Vegan participants ($\bar{x}$=3.3) were highest (see Table 7.7, below). Specifically, while nearly ninety percent of 3DV participants reported health as a primary motivator, fewer than fifty percent of iAnimal and PTC participants indicated the same. Just over 63% of GVUC and LEB participants categorised health as a primary motivator, while 55% of GVC

participants did the same. Overall, PTC and GVC each had the highest proportion of participants not motivated by health (just over thirteen percent).

Table 7.7 Average health motivation at zero months within campaign samples

GVC	GVUC	iAnimal	LEB	PTC	3DV	All
2.4	2.7	2.2	2.7	2.2	3.3	2.6

Scaled from 0 (not at all important) to 4 (very important)

With the exceptions of red meat and dairy, being motivated by health did not appear to be related to lower consumption rates at the campaign start (see Figure 7.18, p. 187). Having health as a secondary, rather than primary, motivator was related to lower consumption rates for red and white meat, total meat and total meat and fish. Fish consumption was lowest for those unmotivated by health and highest for those most motivated by it. Total meat and fish was also highest for the primary group. Dairy was the only area where having health as a motivator (and particularly as a primary motivator) was related to lower consumption. This could be related to common misconceptions about the healthfulness and necessity of consuming dairy, with those motivated by health potentially more likely to research and look further into the negative health impacts of dairy consumption.

The small group that indicated that health (but not animal welfare or the environment) was their primary motivator (n=63) had the highest consumption rates of any group for red, white and total meat (see Figure 7.19, p. 187). As discussed in 7.2**,** this group also had the highest proportion of planned non-reducers (14.5%). The health and environment group had the highest rates of egg, fish and total meat and fish consumption. Of the motivator groups that included health, the two including animal welfare generally had the lowest average consumption rates in each category, including eating a full serving less meat and fish.

Health motivation was most strongly related to successful reduction for dairy (see Figure 7.20, below) and somewhat related to red meat and total meat and fish reduction. In addition to being connected to lower consumption rates in the first wave, having health as a secondary, rather than primary, motivator was connected to more successful reductions for red, white and total meat, dairy, fish and total meat and fish to six months. Fish consumption was inversely related to health

motivation, with lower health motivation connected to greater success in meeting reduction goals (88% of those where health was a primary motivator, 93% where secondary and 98% where health was not a motivator). This could be related to beliefs that fish is healthy, necessary and/or healthier than red or white meat.

Figure 7.18 Consumption at zero months within health motivation groups

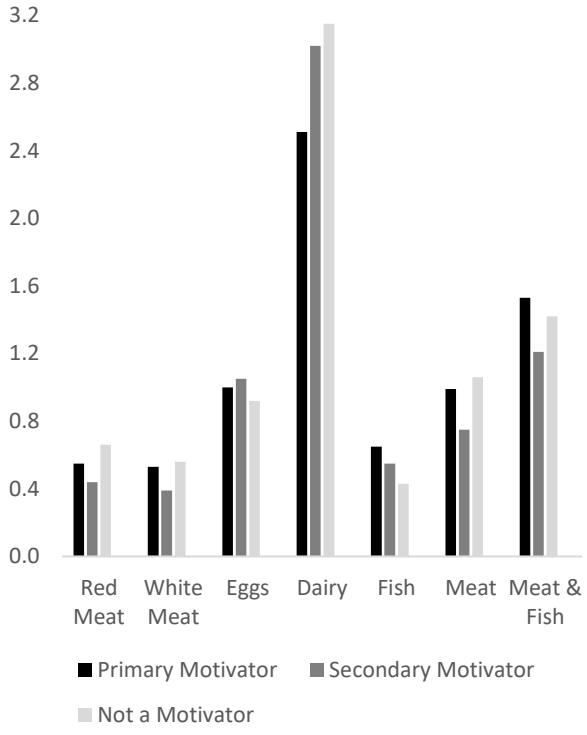
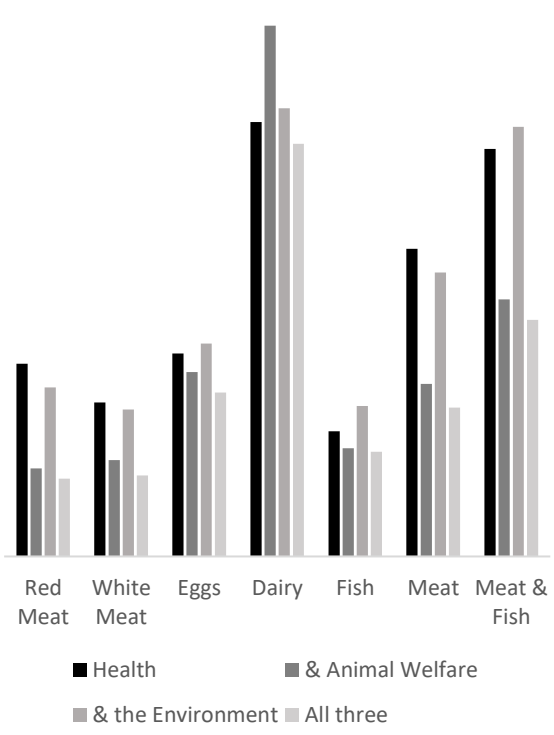


Figure 7.19 Consumption at zero months where health is a primary motivator

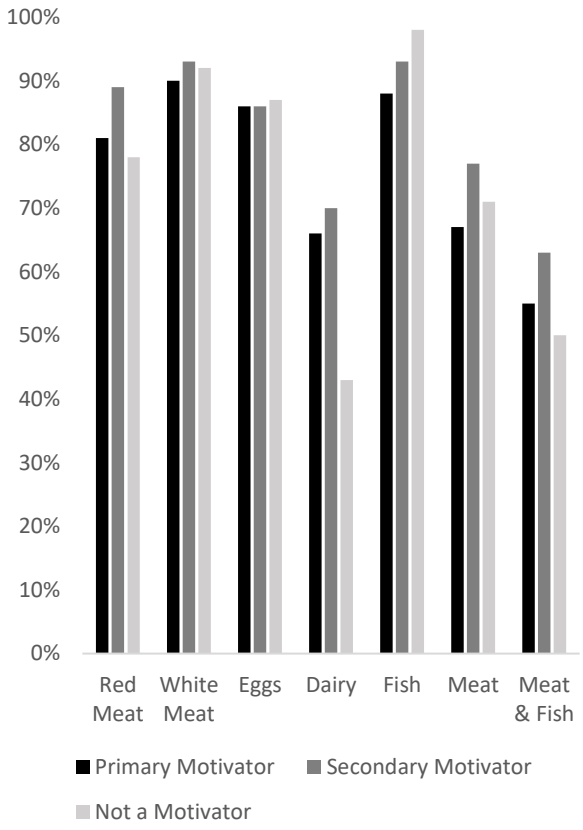


Health motivation was the most likely of the three principal motivators to change over time, with only 44.6% providing the same level of motivation at the start as at six months and nearly one in five indicating a change in type of motivation (e.g. primary to secondary motivator). Participants were slightly more likely to indicate lower (28.5%) than higher (26.7%) motivation levels after six months. While no focus group participants described a decrease in health motivations, positive changes could be due to health benefits after transitioning one's diet. For instance, vegan VI2 explained: 'I eat better than I ever did before', while meat reducer BL3 stated: 'I feel healthier'.

Increases in health-related motivation could also be due to heightened awareness after transitioning, while health misconceptions could present a significant barrier in reduction (see 8.4). Vegan VI4 described her need to accumulate information about the relationship between health and AFP consumption to combat others' misperceptions and questioning of her dietary decisions,

describing herself as 'armed … with information'. For others, however, social and cultural components (see 8.7) could cause lowered health motivation. Vegan VI4 described how she had continued consuming meat for years because she was 'still under the impression that we needed a certain amount of meat in our diet', not buying meat but eating it in social situations, such as at a friend's house.

Figure 7.20 Successful reduction at six months within health motivation groups



A lack of control or financial stability could also cause health concerns for reducers. BN1 had grown up in a small town in central Europe and struggled as a vegetarian child when her parents continued to make meat-focused meals: 'When my mum was cooking, … she would make pork with rice or something like that and I would just eat rice. I would just eat the side for years, so obviously my health just went down. … And then I … had a blood test and obviously my iron was down'. The new reducer may need to combat not only their own preconceptions of the necessity of consuming AFPs, but – particularly for children, young adults and those on a fixed income – that of those who directly control or influence the composition of their meals. As is discussed further in 8.4, within this sample health motivations served a variety of roles, having a positive, negative or mixed impact on reduction motivation and success.

7.6 Food safety

Of the remaining motivators (food safety, finances and religion), food safety was the most likely to be included as a motivating factor for participants, while religion was the least likely (see

7.8). Just over one-third of participants indicated that food safety was a primary motivating factor, with participants in the 3DV the most likely to do so. POC and those with degrees were also more likely to be motivated by food safety. Food safety motivation was inversely related to successful reduction in most AFP categories, with the only exception being eggs. It was also related to lower consumption of red and total meat, but with lower overall rates for those where it was a secondary, rather than primary, motivator.

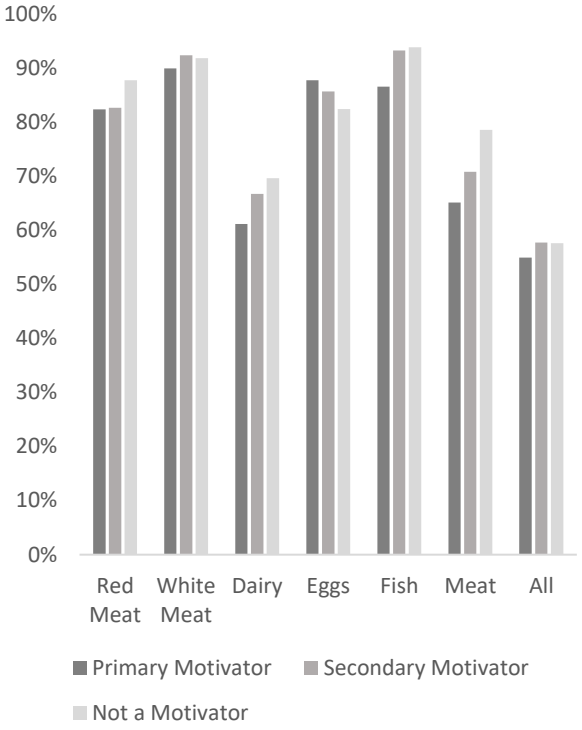
39.2% of participants categorised food safety as a primary motivator, while 33.2% indicated it was secondary and 29.7% that it was not a motivating factor. It was the least consistently reported motivator from zero to six months, with only 38.1% indicating the same motivation level at both points (though participants were no more likely to increase as to decrease their motivation level). Planned vegans ($\bar{x}$=2.4) and pescatarians ($\bar{x}$=2.2) had the highest motivation levels, while vegetarians ($\bar{x}$=1.5) and non-reducers ($\bar{x}$=1.3) had the lowest. Resultantly, this was the only motivator category where meat eaters ($\bar{x}$=1.9) and non-meat eaters ($\bar{x}$=1.9) had equivalent average responses.

Level of food safety motivation also had some variations between campaigns and sociodemographic groups. 3DV participants had the highest levels of food safety motivation ($\bar{x}$=3.3), while all other campaigns had average motivation levels between 2.2 and 2.7. White participants were somewhat less motivated by food safety ($\bar{x}$=1.9 for white individuals and 2.5 for POC), as were those with university degrees ($\bar{x}$=2.6 for those without formal education and 1.8 for those with Bachelor's or postgraduate degrees).

Being motivated by food safety, as with health and the environment, requires a prerequisite level of knowledge and awareness. Though not a common topic in focus groups, some participants demonstrated an awareness and level of concern about food contamination. For instance, a discussion emerged in one focus group about the practice of shipping chicken and prawn carcasses long distances to be bleached, with vegetarian BL2 stating: 'The fact they're treating it with all this stuff so that it lasts longer, so they can get it 7,000 miles away, … it makes you feel ill'.

Food safety was not generally connected to lower consumption rates or greater reduction success. It was not linked to the lowered consumption of either white meat or fish, though it was correlated with lower rates of red meat ($\bar{x}$=0.48 for primary, 0.44 for secondary and 0.71 where not a motivator) and total meat ($\bar{x}$=0.91, 0.84 and 1.07, respectively) consumption at zero months. Those who were motivated by food safety, instead, consumed the most fish ($\bar{x}$=0.63, 0.63 and 0.5). It was only linked to higher rates of successful reduction from zero to six months for eggs (see Figure 7.21, right). This may be a topical trend related to widespread recalls of eggs throughout the European Union in 2017, including 700,000 eggs across the UK that were contaminated with an insecticide (Gayle and Boffey 2017). Food safety's relationship to reduction may be likely to be related to contemporary issues when specific AFPs are linked to concerns about handling, packaging or contamination.

Figure 7.21 Successful reduction at six months within food safety motivation groups



7.7 Financial

Financial motivators were the only category where meat eaters, on average, had higher reported motivation levels than veg*ns and pescatarians. Levels of motivation also tended to be higher for POC and participants of environmental campaigns, as well as for younger individuals or those earning lower incomes. They were inversely related to consumption levels, with those reporting higher motivation levels eating more and being less successful in their reduction goals.

A slight majority (53.7%) categorised saving money as a motivator but participants were unlikely to indicate that it was a primary factor, with only 5.6% stating that it was very important

and 10% that it was important in their decisions to reduce. An additional 38.1% indicated that financial motives were 'moderately' or 'somewhat' important (i.e. a secondary motivator). Distinctions between level of financial motivation were most visible between those who did eat meat and those who did not. Those planning to be meat reducers ($\bar{x}$=1.4) or non-reducers ($\bar{x}$=1.5) had somewhat higher average motivation levels than planned veg*ns and pescatarians, with vegetarians having the lowest level of financial motivation ($\bar{x}$=0.6). 50% of those planning a pescatarian or veg*n diet were motivated by finances, compared to 64.9% (20.7% primary and 44.2% secondary) of meat reducers and 62.2% (28.9% primary and 33.3% secondary) of non-reducers. Overall, those planning to no longer reduce were the most likely to include finances as a primary motivation.

Though not frequently addressed, financial incentives were occasionally mentioned during focus group discussions, with only one participant stating that it was a motivating factor for her. Specifically, meat reducer LO4 included financial incentives in a list of reasons she would like to be vegan: 'from a perspective of animal care, affection for animals, the environment, cost, as well as health, I would like to be vegan immediately and never, ever touch anything [again]'. Others described finances as more of a barrier than an incentive (see 8.5), such as meat reducer BL1: 'Cost can be a factor. I mean, good vegetables are very expensive. And meat is cheap. Shouldn't be, but it is'.

Financial incentives were also linked to participants' age, ethnicity and income, as well as to specific campaigns. Animal protection campaign participants were less likely to be motivated by finances (40.0% of GVC, 50.0% of GVUC, 53.4% of 3DV and 48.3% of iAnimal participants) than were those in environmental campaigns (59.4% of LEB and 72.7% of PTC participants). Those in the youngest age groups were slightly more likely to list financial motivators (61.5% of 18 to 34-year olds, 49.9% of 35 to 54-year-olds and 50.7% of those 55 and older). Those earning lower incomes were also more highly motivated by cost (61.9% of low income, 60.4% of middle income and 43.6% of high-income groups) and to include it as a primary motivator (23.9%, 16.8% and 9.3%,

respectively). White participants were somewhat less likely to be motivated by finances (70.6% of POC and 52.9% of white participants).

Figure 7.22 Consumption at zero months within financial motivation groups

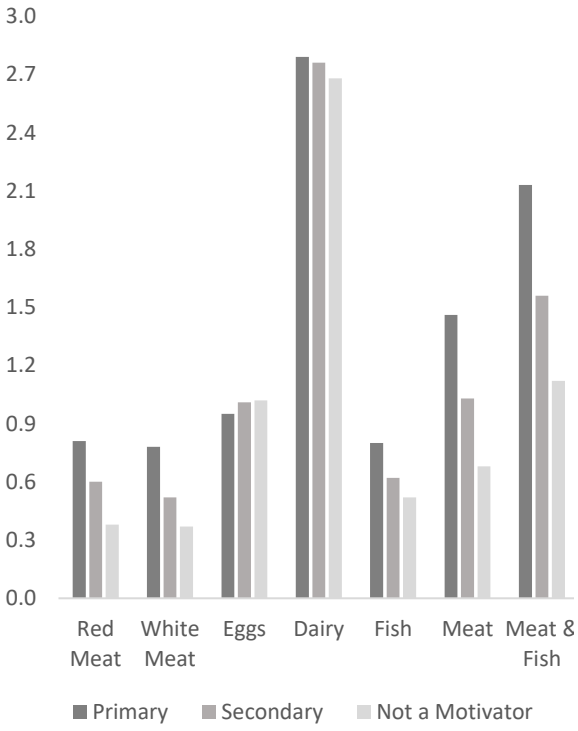
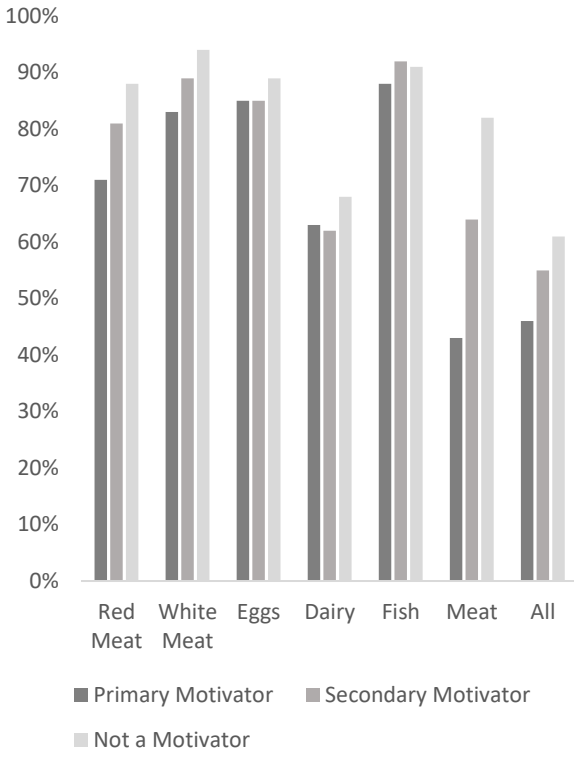


Figure 7.23 Successful reduction at six months within financial motivation groups



In many areas, financial motivators presented oppositional trends to other motivator categories. For instance, as previously stated, it was the only category where meat reducers and non-reducers had higher motivation levels than vegans. Along with food safety, it was also one of the only categories to be inversely related to consumption levels and successful reduction in nearly every category. Those for whom finances were a primary motivator consumed the most, followed by those for whom it was a secondary motivator, in all categories but eggs (see Figure 7.22, above). In particular, those where finances were a primary motivator were consuming more than twice as much red, white and total meat than those who were not motivated by finances. They were also less successful at meeting their reduction goals in every category (see Figure 7.23, above).

7.8 Religion

Religious motives were the least commonly reported motivator in each campaign, with the exception of participants in the CreatureKind Commitment (n=4), for whom three expressed that it was a major and one a minor motivator. POC (37.0%, compared to 11.1% of white participants) and those earning lower incomes (31.7% of low income, 27.2% of middle income and 18.9% of upper income participants) were also somewhat more likely to include religion as a motivator. Overall, fewer than 25% of participants were motivated by religion, with similar numbers indicating that it was a primary motivator as those who indicated that it was secondary. Despite its status as the least popular motivating factor, those who were motivated by religion, particularly where a primary motivator, consumed less in every category (see Figure 7.24, below) and were more successful at reducing in each area but fish (see Figure 7.25, below).

Figure 7.24 Consumption at zero months within religious motivation groups

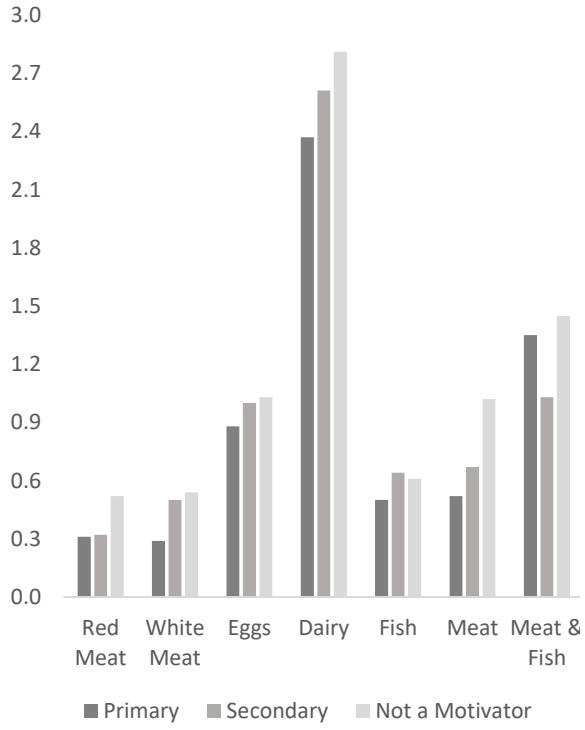
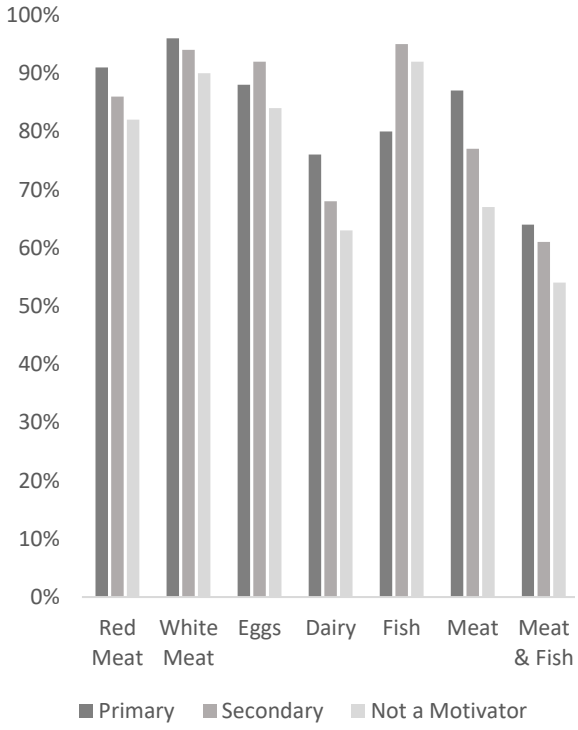


Figure 7.25 Successful reduction at six months within religion motivation groups



7.9 Conclusion

For this particular sample of reducers, animal protection and environmental motivations were the most prominent, followed by health. Financial, religious and food safety motivations were less likely to be seen as important in participants' decisions to reduce. Animal welfare was linked to lower consumption and a greater likelihood of meeting reduction goals when a primary motivator. Conversely, health and environmental motivations were, generally, most effective when they were secondary motivators. Health motivators did, however, appear to be linked to dairy reductions. Those for whom animal welfare was a primary motivator or health a secondary motivator generally consumed the least in each category throughout the research period (see Table 7.8, below).

Table 7.8 Consumption (in servings) within categorical motivator levels at six months

		Red Meat	White Meat	Eggs	Dairy	Fish	Meat	Meat & Fish
Health	Primary	0.36	0.31	0.71	2.01	0.51	0.61	1.03
	Secondary	0.25	0.25	0.58	1.94	0.31	0.47	0.7
	Not	0.51	0.18	0.68	3.14	0.18	0.66	0.84
Enviro.	Primary	0.34	0.28	0.67	2.15	0.41	0.57	0.89
	Secondary	0.32	0.24	0.64	1.72	0.51	0.52	0.98
	Not	0.55	0.4	0.7	3.73	0.4	0.8	1.2
Animal Welfare	Primary	0.28	0.24	0.63	2.07	0.39	0.48	0.79
	Secondary	0.72	0.52	0.95	2.21	0.63	1.2	1.69
	Not	0.8	0.56	0.89	4.6	0.38	1.22	1.5
	All	**0.35**	**0.29**	**0.66**	**2.16**	**0.42**	**0.59**	**0.93**

Though less common, other types of motivators did play a role for some reducers. Financial and food safety motivators were the only category to be inversely related to many or all consumption levels and reduction success. A desire to reduce in order to save money was more common amongst young individuals, those earning lower incomes, POC and those in environmentally-based campaigns. In other motivator categories, younger individuals reported lower average motivation levels. Food safety was also not related to reduction success for all categories but eggs, suggesting that it may be beneficial when topical issues arise.

While participants were highly likely to indicate multiple motivating factors, within this sample animal protection may be key. Other potential factors may be less prominent due to requisite levels of knowledge and comprehension, their lack of immediacy and widespread mis- and

conflicting information. Animal protection, however, can be highly personal and based on a feeling of moral duty to specific animals or animals in general. Connections between the once-living animal and the final food product may be most readily made for meat and fish through the consumption of flesh, whose absence may make such connections more difficult for other types of AFPs (i.e. eggs and dairy). While other motivating factors need a certain level of knowledge before they can be impactful, feelings of care or concern for animals can arise and grow from a young age. However, as with other motivators, the potential influence of animal protection may be stymied by internal (e.g. cognitive dissonance, see 9.4) and external (e.g. social or cultural elements, see 8.6) factors.

Table 7.9 Successful reduction to six months based on level of motivation: all motivators

		Red Meat	White Meat	Eggs	Dairy	Fish	Meat	Meat & Fish	All
Animal Welfare	Primary	86%	92%	86%	66%	91%	75%	57%	58%
	Secondary	65%	79%	85%	56%	93%	36%	51%	51%
	Not	80%	67%	75%	0%	80%	50%	50%	50%
Enviro.	Primary	83%	91%	86%	65%	91%	70%	56%	56%
	Secondary	84%	96%	83%	69%	90%	75%	59%	55%
	Not	78%	71%	80%	50%	100%	50%	50%	61%
Health	Primary	81%	90%	86%	66%	88%	67%	55%	55%
	Secondary	89%	93%	86%	70%	93%	77%	63%	63%
	Not	78%	92%	87%	43%	98%	71%	50%	50%
Food Safety	Primary	82%	89%	88%	60%	87%	65%	55%	55%
	Secondary	83%	92%	86%	67%	93%	71%	58%	58%
	Not	88%	92%	82%	70%	94%	79%	58%	58%
Cost	Primary	71%	83%	85%	63%	88%	43%	71%	48%
	Secondary	81%	89%	85%	62%	92%	64%	81%	55%
	Not	88%	94%	89%	68%	91%	82%	88%	61%
Religion	Primary	91%	96%	88%	76%	80%	87%	64%	65%
	Secondary	86%	94%	92%	68%	95%	77%	61%	62%
	Not	82%	90%	84%	63%	92%	67%	54%	55%
All participants		**84%**	**91%**	**86%**	**66%**	**91%**	**71%**	**58%**	**58%**

Chapter 8 Why (not): gaining knowledge and skills amidst continued social pressure against change

8.1 Introduction

This sample represents a highly motivated and aware group (Chapter 7) and, yet, many participants were unable to meet their reduction goals (Chapter 6). Meat reducers were particularly likely to become temporary reducers, while many focus group participants described a vegan goal and yet continued to consume meat. Raising awareness and motivation levels are, on their own, unlikely to be sufficient to promote widespread reduction (Wellesley, Happer and Froggatt 2015). Instead, through her research with campaigns, Han (2012) argues that interventions need to not simply increase the possibility of behaviour change occurring, but the probability that individuals will engage in new behaviours.

Barrier perceptions inhibiting dietary change present insights into present mechanisms that may not simply increase the possibility, but the probability, that behaviour change will occur. The Behaviour Change Wheel proves to be a valuable tool in categorising and analysing specific barriers. This chapter is structured around the COM-B categories of the BCW to analyse reduction barriers and opportunities (see 2.1 for an overview of the BCW and COM-B components). Within the framework, elements of psychological capabilities (e.g. knowing veg*n recipes or how to find or prepare veg*n food) and physical opportunities (e.g. access to or the cost of veg*n food) were generally described as key obstacles in initial transitions but easily addressed within a relatively short timeframe. However, social opportunities (e.g. reactions of friends and family or cultural influences) were described as inhibitive by many, particularly for veg*n participants.

8.2 Overview: more opportunities than barriers

Within the sample, there was a clear trend of viewing barriers as unobtrusive (i.e. as opportunities). As seen in Table 8.1 (below), every barrier question had an average response above neutral (where neutral is four, one is the most inhibitive and seven is the most supportive) and

almost all were viewed as less obtrusive over time, as exhibited by positive gains to one and six months. In general, barriers pertaining to meat were viewed as less restrictive than those that referred to dairy or eggs. Participants also reported high levels of awareness of the benefits of reducing AFP consumption for animal welfare and the environment ($\bar{x}$=6.3 for the three awareness questions), as discussed in 7.3 and 7.4.

Table 8.1 Means of barrier questions at zero months and changes to one and six months

		Change	
Barrier Question	0 months	to 1 month	to 6 months
A vegetarian or vegan diet is generally more expensive	4.3	none	+ .1
I worry about contamination in meat, dairy and eggs	4.6	- .1	+ .1
Dairy is an essential part of a healthy diet	4.7	+ .1	**+ .2***
Eggs are not an essential part of a healthy diet	4.7	+ .2	**+ .3***
I do not want to change my eating habits or routines	5.2	- .1	**- .2***
Some of my friends or family are vegetarian or vegan	5.4	none	**+ .1***
It is easy to find food without meat	5.5	**+ .1***	**+ .2***
I need meat to get enough protein	5.5	**+ .2***	**+ .1***
I have the skills to cook without using meat, dairy or eggs	5.5	**+ .1***	**+ .3***
I would not be able to find food if I did not eat meat, dairy or eggs	5.5	**+ .1***	**+ .2***
Reducing my meat consumption would affect my relationship with my family	5.7	- .1	- .1
I would feel comfortable telling people I was vegetarian or vegan	5.8	+ .1	**+ .1***
Reducing my meat consumption would affect my social life	5.8	**- .2***	**- .1***
A meal without meat doesn't taste as good	5.9	- .1	-.1
I know where to find vegetarian and vegan recipes	6.0	**+ .2***	**+ .3***
Eating less dairy and eggs is better for animal welfare	6.0	none	+ .1
Eating no meat or less meat is better for animal welfare	6.2	none	none
I like trying new foods	6.3	none	+ .1
Eating no meat or less meat is better for the environment	6.5	- .1	- .1
Eating more fruits, vegetables and whole grains is better for me	6.7	none	none

Answers are coded from 1 being the most significant barrier to 7 being the most significant opportunity, with 4 representing a neutral response.
** Confidence Interval (to 95%) does not include zero.*

Barrier responses and changes to barrier perceptions over time were closely related to current and planned dietary habits. The primary exception to this trend was in questions that did not specifically mention AFPs (i.e. the healthfulness of eating more plant-based foods or one's willingness to eat novel foods or to change one's eating habits). The largest discrepancies generally

emerged between those who consumed meat and those who did not. For instance, to the statement *A meal without meat doesn't taste as good*, veg*ns and pescatarians expressed strong disagreement ($\bar{x}$=6.8 and 6.7, respectively, where 7 is strongly disagree and 6 is disagree), while meat reducers ($\bar{x}$=5.4) and non-reducers ($\bar{x}$=5.1), on average, only somewhat disagreed. Current and planned vegans, followed by vegetarians and pescatarians, were the most likely to characterise barriers as opportunities, while meat reducers and non-reducers were the least likely. However, that some veg*ns and pescatarians viewed certain barriers as obtrusive – such as availability (8.3) and taste (8.5) – and yet still maintained their diet suggests that, for some, there may be a willingness or acceptance of making sacrifices in meeting reduction goals (9.4). This trend was most evident for health-based barriers (see 8.4), as well as for those regarding availability (8.5). Responses were generally less variable between campaigns than between dietary groups, though vegan campaign participants tended to view barriers as less obtrusive than did those in reduction campaigns.

Most reported barrier perceptions – particularly those around physical opportunities (8.5) and psychological capabilities (8.4) – decreased over time. Automatic motivation (8.3) increased slightly in terms of willingness to try new foods but other sources of automatic motivation were relatively stagnant, as was reflective motivation (see Chapter 7). Social opportunities (8.6) presented two contradictory trends, with reducers more likely to report having veg*n friends, yet more likely to view reduction as negatively impacting their social life and/or relationship with family. Those in vegan campaigns and/or not consuming meat also had greater reductions to barrier perceptions over time.

As touched upon in 7.3, amongst measured motivating factors, animal protection was most strongly correlated to changes in barrier perception. When a respondent indicated that animal welfare was a motivator and, in particular, a primary motivator, barriers were generally seen as less obtrusive and opportunities as greater. Other motivator categories were also related to barrier responses to varying degrees, particularly environmental and health motivations.

Those for whom animal welfare was a motivator, particularly those for whom the environment was also a motivator, generally had the lowest perceptions of barriers. Conversely, those who were motivated by health but not animal welfare or the environment generally viewed barriers as more significant than other groups. Of the remaining four motivators (food safety, religion, cost and other), financial motivation had the most areas of correlation (though generally with quite small variations) and, in opposition to other motivators, was generally negatively associated with barrier perceptions (as well as to reduction levels and meeting of reduction goals as discussed in 7.7). Food safety was only strongly related ($\Delta >= 1.0$ between primary, secondary and non-motivator groups) when asked about the subject ($\bar{x}$=5.6, 4.5 and 3.4) and only slight variations emerged when analysing religion as a motivator.

8.3 Automatic motivation: unconscious influences

Automatic motivation pertains to 'automatic processes involving emotions and impulses that arise from associative learning and/or innate dispositions' and 'involv[es] emotional reactions, desires (wants and needs), impulses, inhibitions, drive states and reflex responses' (Michie, Atkins and West 2014, pp.227; 63). Automatic motivation is distinct from reflexive motivation, the topic of the previous chapter, which pertains to 'reflective processes involving plans (self-conscious intentions) and evaluations (beliefs about what is good and bad)' (Michie, Atkins and West 2014, pp.227; 63).

Automatic motivation includes that which unconsciously structures internal dietary associations and motivations, including taste, novelty (a willingness to try new foods) and habits. Identity has also been included with automatic motivation, as while the act of identifying as a reducer or as a pescatarian or veg*n is reliant upon a conscious decision, understanding oneself as a meat eater is likely not to be. Reflexive reactions and initial associations with identity categories are based in unconscious processes and can thus serve as instinctive inhibitors. Each element of automatic motivation is also interconnected with emotional components, which, in conjunction

with their unconscious nature, can make this area particularly complex and resistant to change without repeated exposure and practice. Those considering reduction likely have to recognise and overcome pre-conceived conceptions of dietary norms, in addition to stigmas of related identity categories.

Relevant terms and identities could conjure unconscious, negative associations, affecting an individual's willingness to change their diet and, in particular, to embrace a veg*n identity. While some reducers (e.g. BL1) disagreed with veg*n and pescatarian ethics, others, including reducer BN5, described identity-based stigma as the primary barrier in considering adopting such an identity. Veganism, in particular, was universally described as a highly stigmatised lifestyle. Meat reducer BN5 struggled to voice her associations with the word vegan: 'It is power. It's a huge. … It conjures up a lot of image[s]. … It's very loaded and … for some people, it's too loaded'. She suggested that it would be easier if people could 'give things up without having to call it anything'. Vegan BN9 believed that vegan stereotypes could account for why some 'people are now saying plant-based diet' (e.g. vegan VI4's husband, see 7.5): 'It doesn't imply deprivation the way vegan does' (see 8.5). It may be that men – who were under-represented in the sample – were more likely to avoid a veg*n identity due to social perceptions that vegan men are less masculine (Thomas 2016).

Some reducers could struggle to embrace veg*n or pescatarian identities due to internalised stereotypes and stigmatisation. Near-vegan BL5 explained: 'I think … there's this tendency of seeing vegans as a very specific group of people'. Such stereotypes could result in some temporarily or permanently avoiding calling themselves vegetarian (e.g. BL7) or vegan (e.g. LO3). This was particularly true for near-vegans (e.g. BL5), who might have felt that they were not being strict enough or that though they were following a vegan diet, other components of their non-dietary consumption were not (yet) vegan, such as using cosmetic products that contained AFPs or had been tested on animals. For instance, vegan LO2 explained: 'I think it took me, probably, a coupla years after really becoming vegan to kind of be comfortable telling people I was vegan, 'cause I think that cultural thing was quite a big thing and what other people think'.

Various pre-conceived notions of veg*n and pescatarian identities could inhibit any or further reductions and tended to relate to four main themes. Firstly, as expressed by near-vegan BL5, was the common conception that 'vegans are hippies and they don't wash'. Secondly, veg*nism could be 'labelled as more a middle-class thing' (vegan MA3) that was associated with an expensive lifestyle and foods and pursued by individuals who are 'generally fairly educated' (BN5). When BN6 struggled to pronounce açaí and quinoa, she joked, 'I'm a very bad vegan. I can't say any of the words'. Meat reducer BN5 who, as previously discussed, believed veg*n stigmas to be a particularly important barrier, described those earning lower incomes or without university degrees as 'so far removed' from issues of veg*nism, where 'health doesn't even come into it' and concerns are more likely to be primarily about convenience and cost.

Thirdly, veg*ns and pescatarians could be viewed as 'fussy', 'awkward' or 'hard work' (near-vegan BN7). For instance, when requesting vegan food while traveling abroad with her family, LO7 described their response as one of frustration and annoyance: 'Are you really gonna make a fuss about this?' MA5 internalised such a sentiment in describing her own decision to become vegan: 'I'm gonna be awkward. I'm gonna try vegan'. Finally, a vegan diet and identity could be viewed as 'very extreme' (vegan LO7) or 'a bit radical' (vegan MA5). This could pertain to the perceived difficulty of the diet, with reducers potentially viewing veganism as excessively restrictive (vegan BN6). For LO3, despite following a vegan diet, the feeling that there were too many other components of a fully vegan lifestyle that she was not following prevented her from identifying as vegan: 'I'd say I'm a vegetarian following a vegan diet because— and you've given up all of your products and your things'. Thus, even some following a vegan diet and/or lifestyle may have felt uncomfortable identifying as vegan, either to avoid other's judgments or because they did not feel that they adequately fulfilled the requirements associated with a vegan identity. In addition to being potentially seen as extreme in difficulty, the conception of an extreme vegan could also refer to two oppositional elements of health, with vegans seen as either extremely healthy (vegan VI2) or under- or malnourished (vegan MA5).

Exposure to veg*n foods and individuals through campaigns could help in overcoming these stigmas, such as through connecting with other veg*ns over social media and discovering that 'quite a lot are fairly normal people' (vegan LO2). Similarly, encountering veg*n foods or meals could help overcome perceptions that such foods are extremely (un)healthy or difficult to access. It is possible that such experiences during the research period affected reducers' willingness to consider embracing veg*n identities, with an average increase from zero to six months of $\bar{x}$=0.31 (CI 0.08 to 0.54[9]). Exposure to information and values contradicting pre-formed omnivorous norms could help reducers along their journeys and, potentially, support their willingness to embrace a veg*n or pescatarian identity. However, overcoming the power of such stigmas may necessitate repeated exposures and experiences over a prolonged period.

In support of previous research (Lee and Simpson 2016; Lea, Crawford and Worlsey 2006; e.g. Kollmuss and Agyeman 2002), veg*nism was widely associated with being a woman, as exhibited by the higher prevalence of female participants in each campaign and within focus groups. Meat reducer and planned vegan LO4 stated: 'I have hardly ever met a single man that doesn't believe that he has to have meat'. From his research into meat and masculinity, Rothberger found that 'a primary reason why men eat meat: It makes them feel like real men' (2013, p.363). The reinforcement of the links between maleness and masculinity are influenced by cultural norms, such as in Calvert's analysis of the television show *Man V. Food* where, in one episode, the host 'calls in an effeminate voice: "ummm … I had the salad"' (2014, p.24).

The associations between meat and masculinity may contribute to negative social encounters by veg*n men, as reducing or eliminating its consumption may lead to perceptions of men as being less masculine (Thomas 2016). Pescatarian LO8 agreed with LO4, adding, 'anything to do with health, it's all women' (LO8). Men who did embrace a veg*n or pescatarian diet could experience stereotyping and negative reactions, as vegan LO7 described of a male vegan friend who 'just has so much trouble, just being a man and being a vegan. … He comes up with a lot of

[9] All confidence intervals are to 95%.

prejudice'. Both male participants – former vegetarian and current reducer BL3 and vegan BN9 – described negative social experiences around their veg*n identities, with BN9's friends commonly referring to him as 'the vegan'. Research suggests that, for some men, the rejection of meat through the adoption of a veg*n diet may be accompanied by or lead to the similar rejection of gendered roles and stereotypes (DeLessio-Parson 2017).

In spite of the multiple areas of stigmatisation raised, identity formation was not exclusively described as negative. Embracing a new dietary identity was depicted by some as a positive component of the transition process, as something that was empowering or providing a sense of purpose. Having a common commitment based in a dietary identity could be an important source of motivation and support, while pre-conceived stigmas around veg*n identities could both inhibit the embracing of such identities and cause difficulties for new transitioners. Vegan BN9 described a shift in his approach to requesting vegan food when eating out: 'This is almost a vegan and proud thing now'. Whereas he would have formerly considered stating he had an allergy or avoided using the word 'vegan' when requesting food, he explained that he now felt more confident directly asking for vegan food in restaurants, viewing a lack of options as 'not acceptable': 'I'm vegan. You've gotta do something about this'. This thinking may reflect a broader cultural shift in the UK as veganism and vegan food have become increasingly popular.

The passion associated with a vegan identity was described by many individuals and potentially provided a sense of purpose, the motivation to influence others or a feeling of solidarity amongst other vegans. VI2 described her vegan identity as a pivotal, positive element in her sense of self:

> I do feel like my identity has changed quite a lot 'cause … for a long time I've probably thought like I'm not very passionate about anything in particular. … Like, even politics, I used to hate the discussions when you were around people 'cause it was just like, oh my god, everyone's just gonna argue. Whereas now like I'm so much more aware of everything. Yeah and I'm actually like confident in my opinion like so politically, environmental factors as well as actual animal welfare, I feel like all of them have gone up. 'Cause my awareness has gone up for the animals, and the environment, and then the political situation, because that affects all of the others.

Veg*nism could become a core part of one's identity, with BN6 describing her vegan identity as 'really positively influenc[ing] [her] life'.

Embracing a new identity could support the creation of new habits and dietary norms, particularly for veg*ns and pescatarians. The act of practicing veg*nism could potentially help participants overcome initial difficulties formed in adopting new habits. Meat reducer LO1 described her first month after transitioning, during which she and her sister consumed no meat: 'It was so hard. I craved meat for ages, but then when you get to the point, it actually does become a habit. … It is relatively easy if … you can actually say, "Oh, this is what I'm gonna have to do"'. However, LO1 explained that, later, 'we got into [eating meat] again, slightly, which wasn't great'. By eating veg*n and pescatarian food full-time, those pursuing these diets could be further compelled to unconsciously embrace such habits. For instance, vegan BN8 stated, 'I find it really easy, really easy now. I don't even think about it'.

This differentiation could reflect the culturally shared dispositions underlying habit formation and maintenance (Southerton 2013). By practicing a new way of eating that never includes certain AFPs, each action may reinforce the formation of a new norm. These new practices 'imply certain routinized ways of understanding the world, of desiring something, of knowing how to do something' (Reckwitz 2002, p.251). They reflect the way one knows the world and their 'routinized mode of intentionality' (Reckwitz 2002, p.254). For the reducer, this 'knowing' may not shift due to the lack of clarity in intention. Specifically, the framework of meal creation and consumption still contains the same components through the maintenance of familiar, meat-centric meal constructs.

Even after fully transitioning, previous habits could lead to cravings. For instance, new vegetarian, planned vegan BL2 explained: 'Cravings for me are the barrier, but the taste is generally better'. However, there was large variability in reported cravings, including meat reducers who claimed they never felt the urge to consume meat (and yet may have continued to do so for other reasons, e.g. social pressure, convenience or a lack of psychological capabilities) and, for some, a continued desire for particular AFPs even after years of abstention. For instance, even after following a fully vegan diet for four years, BL6 stated: 'I still find it hard. … People talk about things

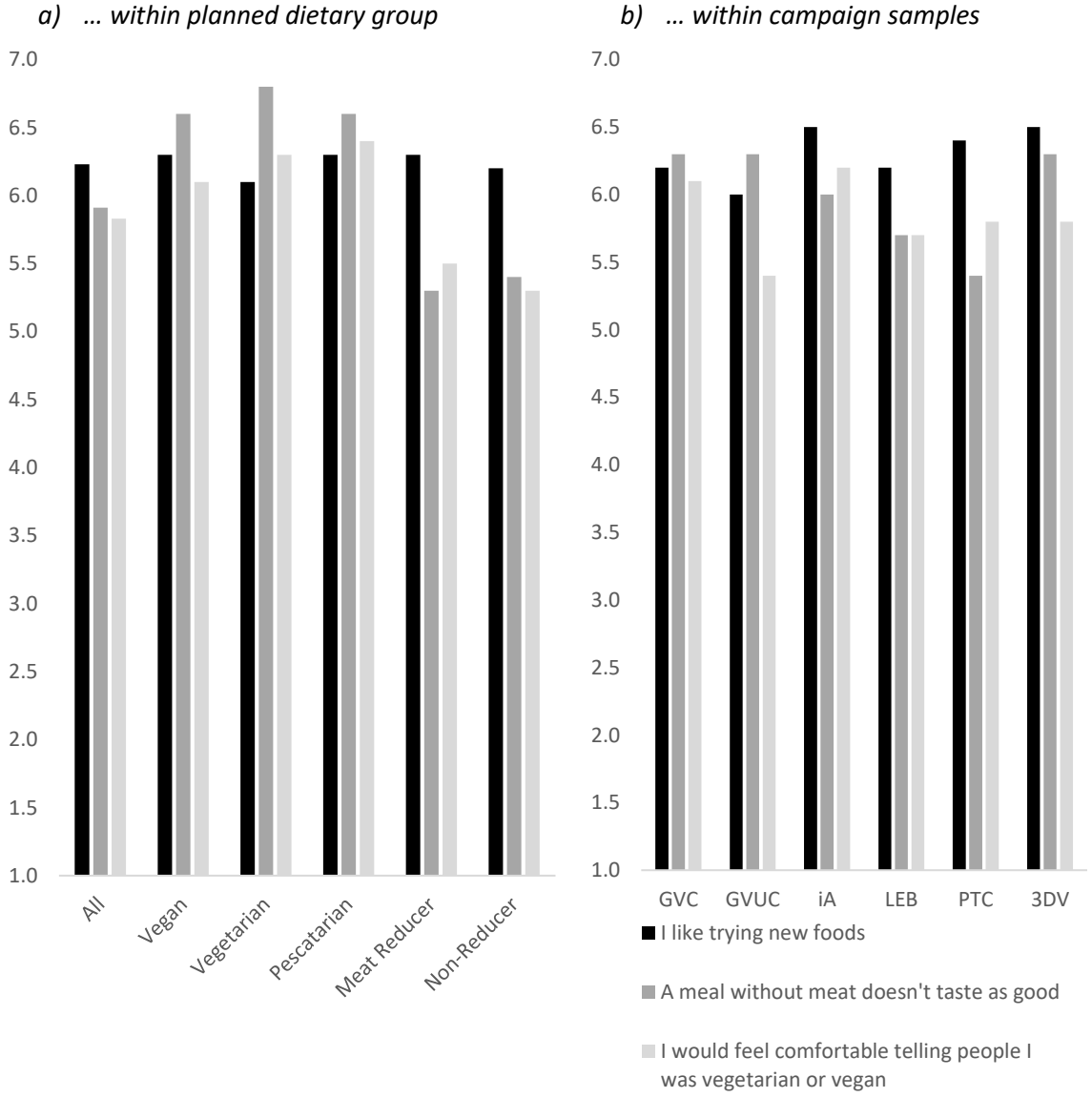
I want and I salivate'. Others described cravings as disappearing over time, such as vegan MA3: 'the first week is the most difficult', after which 'the cravings kind of subside'. She explained: 'I never miss the taste of meat. … The veggie and vegan alternatives I think are tastier'. While some meat reducers expressed a similar sentiment – the lack of a desire to eat meat – social opportunities (8.6) were often key in inhibiting this change. New meat reducer BN2 explained: 'I don't want any meat. … I can go by without no meat. I've got no problem. I don't miss it'. However, she struggled with family and friends not wanting meatless meals. Substitutes that mimic the taste and texture of familiar AFPs could help those with cravings and those still reliant on omnivorous dietary norms.

Craving a particular food could result in the consumption of AFPs. For some, giving into cravings served to reinforce their abstention decisions. Vegan MA3 described the times she consumed non-vegan food after her initial transition: 'You built it up in your head. … You're like, "I really, really crave it". And then when I did give into it, it didn't taste as good as I imagined anyway, like … I want proper cheese pizza. I need cheese and it's not actually that good. I prefer the vegan cheese anyway, 'cause I don't feel as bad'. These disappointing experiences helped MA3 commit to transition from '90% vegan' to fully vegan, with 'no cheating bits'. Vegan MA5 also described an experience with consuming non-vegan food as pivotal in her decision to be fully vegan. After deciding to participate in the GVC a few months after becoming a pescatarian, she planned to complete the challenge as a vegetarian. Once the challenge had ended, she felt disappointed after consuming pizza with dairy cheese. In particular, she was unhappy with how unhealthy it tasted: 'I was really looking forward to my first bite of pizza with proper cheese and I built it up so much and it just tasted wrong. It just tasted too greasy. … The taste just wasn't enough to hold it up anymore'.

For others, the taste of meat or other AFPs could actually be a key motivator in the decision to become veg*n or pescatarian, particularly as a child. Those who had become veg*n at a young age described an instinctual revulsion, often linked to a recognition of meat as flesh, as discussed in 6.1 and 7.3. MA1 – who now eats meat occasionally in social settings – had been a vegetarian from the age of eleven into her late twenties, having 'never liked meat as a child'. Similarly, vegan LO7 described having 'been a vegetarian, pretty much, as long as I can remember' after she 'tried

to eat [meat]' but quickly gave it up: 'It was a very visceral thing'. For those where this was not the case, taste perceptions could change through exposure to different foods when forming new habits. For instance, BL5 described how after transitioning to an almost fully vegan diet she now enjoyed previously disliked foods, such as aubergine and avocados. Vegan VI3 explained that she prefers the taste of her current vegan diet to her formerly omnivorous one: 'Taste has gone up with me. I'm surprised at how much I do enjoy my food'.

Figure 8.1 Automatic motivation at zero months



Taste perceptions were a key distinction between meat eaters and abstainers (see Figure 8.1a, above), as well as between those in vegan and reduction campaigns (see Figure 8.1b, above). Specifically, 95% of veg*ns and pescatarians disagreed or strongly disagreed that meatless meals do not taste as good, while only 61.3% of meat reducers and 54.0% of non-reducers indicated the

same, though few (5.6% and 8.3%, respectively) indicated that taste was a barrier. Being accustomed to meals where meat is the central component may contribute to meat eaters' perceptions of its superior taste. However, those who no longer consume these foods may have more opportunities or motivation to seek out new, enjoyable foods. For those where taste is seen as a barrier, the abstention of AFPs could be seen as a form of deprivation: 'For a lot of people it's a big thing, 'cause … you like the taste of certain things and think, "Why should I have to live without that?"' (vegan MA5). Habits and conceptions of what makes a proper meal could leave reducers feeling limited in their dietary options, causing them to seek out substitutes for foods that may have served a prominent role in their habituated omnivorous diets.

For the over 40% of meat eaters who were uncertain if meatless meals could taste as good as those with meat, early exposure to veg*n food that tastes good and, in particular, knowledge of how to find and prepare these foods (8.4) could be essential: 'I think it's fairly important in the beginning, because if you … cook recipes and they … taste awful, then you won't stick with it' (meat reducer LO1). Exposing friends and family to veg*n food was, for many of the vegan participants, a key mechanism to introduce people to enjoyable meatless and vegan foods, as with MA3:

> I found a kind of good way to kind of encourage people in a nice way, even to just sort of reduce their consumption a bit or eat less dairy is cooking for them. So, cooking a really nice meal and inviting them 'round and they're like, "Oh my god, this is really, really nice and it'd be easy to eat vegan if I could eat all this food all the time".

Twine refers to this practice as 'demonstrative veganism', whereby the preparation of food for non-vegans could serve to expose them 'to the sensual experience of vegan food' (2014, p.636). An initial positive experience with a meat-free meal could encourage further exploration and consideration of veg*n ethics and foods. In particular, replacing old habits and finding new ways of eating could result in more diversified types of meals, causing individuals to try a wider variety of foods. Vegan VI1 described how she and the two other people she had transitioned with 'have been getting quite into the cooking and finding new recipes, so probably it's made our diet more interesting'. However, changing habits and being exposed to veg*n meals could be more difficult for individuals who are resistant to trying new foods, a group largely absent from this sample (17.7%).

Even for those who enjoyed experiencing new tastes and textures, changing habits could be difficult. Pescatarian BL4 explained: 'You get used to it and [after] two decades and then you suddenly give [it] up and it's just, yeah, wasn't easy'. Food can be an important source of emotional comfort and mood improvement and eliminating foods previously seen as soothing or pleasurable could be distressing for reducers (Scheibehenne, Miesler and Todd 2007). Individual dietary customs and taste preferences developed over a lifetime of habits could present difficulties when trying to form new habits. Vegan BL6 described strong emotional attachments with specific foods:

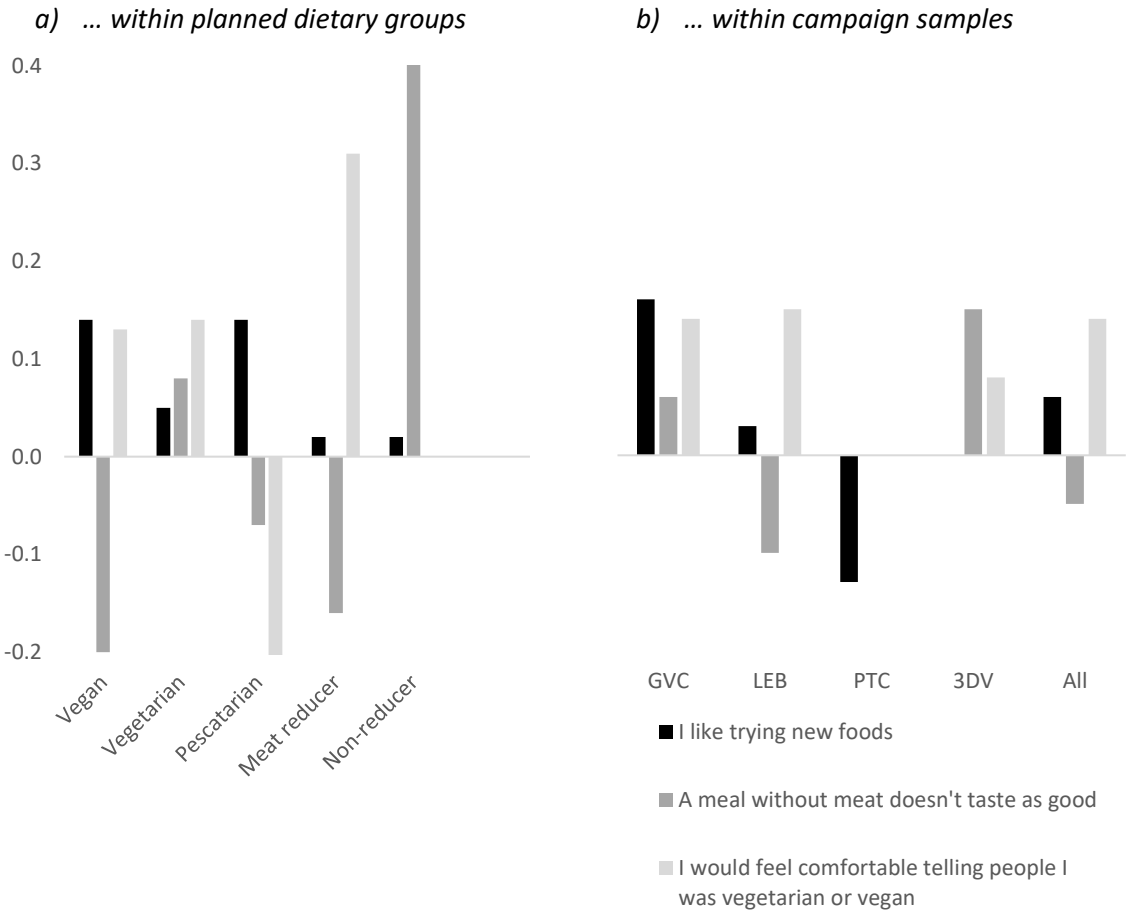
> BL6: *Whenever I was little and I was poorly I would have cloudy lemonade and Maltesers®. … That's what my mum would give me when I was sick and now when I'm poorly … I feel like it's the only thing that will actually ever help and then I get sad when I'm poorly 'cause I'm like: I can't have Maltesers. And like no other chocolate does it. … Like when I'm feeling something, something I would used to do, which I knew like makes you feel better I feel like I can't do now and it makes me more sad.*
>
> Moderator: *I think there's a vegan Maltesers.*
>
> BL6: *It's not the same.*

The elimination of such foods from an abstainer's diet could be experienced as a loss, particularly at times when they may have formerly been used as a source of comfort. As Stoll-Kleeman and Schmidt (2016) discuss, emotions are likely to be an extremely important though under-researched component of the reduction process.

The variety of mechanisms contributing to the maintenance of old habits or difficulties in forming new habits could be a significant challenge, particularly when reducers may have struggled with a lack of time or resources. In such instances, some meat reducers returned to former habits, as discussed in 6.3.4 with many near-vegans. MA1, a meat reducer and former vegetarian looking to transition to a vegan diet described her 'main issue' as 'preparation': 'When I'm busy and when I've got a lot of things going on, I end up resorting to just sort of convenient food and I'm not preparing things. I sort of default to old habits'. The formation of new habits may be essential for those struggling with ongoing motivation, but perhaps more easily accomplished for younger participants, whose habits may be less ingrained. Younger individuals may also be more willing to try new types of foods (87.6% of those 18 to 34-years-old, 82.5% of those 35 to 54-years-old and 77.4% of those 55 and over).

Those participating in a vegan month challenge may have been compelled to try new foods and embrace new dietary habits. In particular, those in the GVC had a slight increase in their willingness to try new foods from zero to six months ($\bar{x}$=0.16, CI 0.00 to 0.31), a trend that was not visible in other campaigns (see Figure 8.2b, below). Vegan and GVUC participant MA5 described how, after transitioning to a vegan diet, 'you get used to different sorts of foods as well. I never thought I'd like quinoa'. By changing their habits and embracing new ways of eating, those no longer consuming meat could come to appreciate and even enjoy novel foods. Overall, current ($\bar{x}$=0.11, CI 0.00 to 0.21) and planned ($\bar{x}$=0.10, CI 0.00 to 0.20) pescatarians and veg*ns had increases in their willingness to try novel foods over the six-month period (see Figure 8.2a, below). By completely eliminating some of the materials associated with eating (e.g. the ingredients), veg*ns may seek out new types of food (i.e. novel materials, Twine 2017).

Figure 8.2 Changes to automatic motivation from zero to six months



During the reduction process, the formation of unconscious habits is likely to be important in maintaining initial dietary changes. Simply being motivated to change is unlikely to be sufficient

if reducers continue to rely on familiar, unconscious habits and lack in essential skills (discussed further in the following section). The use of veg*n substitutes may help early transitioners in maintaining familiar meal constructs, textures and tastes but may inhibit the formation of new habits (see 8.4). Aside from the mention of cravings for meat or cheese, none of the veg*n or pescatarian participants complained about the taste of veg*n food and even some meat reducers felt that veg*n options 'taste so much nicer' (BL3). Cheese emerged as a particularly difficult item for some to fully abstain from, with VI2 stating: 'That was the hardest to get rid of. … I do really enjoy the taste of cheese'. However, for most of those who experienced cravings, the feeling subsided with time. Vegan LO7 anticipated struggling with ongoing cravings for dairy cheese but instead was 'surprised about how little I've really wanted cheese'. In order to formulate new habits and alter one's automatic motivation – an element inherently linked to subconscious processes – new reducers may need to focus on the conscious formation of new habits and ways of eating. This includes becoming competent in procedures related to veg*n eating and forming new dispositions through veg*n normalisation (Twine 2017).

As with other areas, the variety of types of consumers is likely to affect the nature of automatic motivation during the reduction process. For meat eaters who describe themselves as more than willing to give up meat (e.g. BN5 and BN1), other barriers (particularly social) are likely to be key, including identity-based stigmas. Meanwhile, some veg*ns and pescatarians maintained their diets despite having 'loved meat' (BL5). In spite of prior taste preferences, such individuals could still commit long-term to a fully veg*n or pescatarian diet, as with BL7 who still craved the taste of dairy cheese four years after first transitioning to a fully vegan diet. Thus, through exposure to tasty vegan and meat-free dishes and new ways of eating, even for a meat or cheese 'lover' taste need not be a prohibitive barrier.

The physical sensation of taste does, however, relate closely to social and cultural norms. Within his conception of an individual's habitus, Bourdieu (1996) described taste as based on one's social status and modelled on the habits of the wealthy. With the high valuation of increasing consumption within modern society (Smart 2010), eliminating certain foods may be construed as a

form of unnecessary deprivation or sacrifice. In particular, if reducers maintain conceptions of a 'proper' meal as reliant upon a meat component, the consumption of a meatless or vegan meal may fall outside of one's daily routine as a non-normative eating occurrence reliant on conscious planning (see 9.6).

8.4 Psychological capabilities: access to essential knowledge and cognitive processes

Psychological capabilities[10] – which include health perceptions and knowledge of how to find and create meat-free and veg*n food — emerged as a critical area for new transitioners. Michie *et al.* define this particular behaviour change component as 'the capacity to engage in the necessary thought processes – comprehension [and] reasoning', which include 'knowledge or psychological skills, strength or stamina' (2014, pp.226; 63). Of all barriers, those pertaining to psychological capabilities generally had the largest reported reductions during the research period. Variations between campaign samples' responses to knowledge-based questions were less pronounced than for many other barriers, with the two largest campaigns – GVC and LEB – having very similar average responses for both knowledge questions ($\bar{x}$=5.4 for cooking and 6.0 or 6.1 for finding recipes) (see Figure 8.3b, p. 212). Both campaigns also had a similar proportion of participants indicating that these areas were opportunities: 57.1% of GVC and 60.2% of LEB participants for cooking and 77.8% and 77.0%, respectively, for finding recipes.

As with nearly all barriers, vegans were the most likely to view these as opportunities (93.6% for cooking and 96.2% for finding recipes), while non-reducers (54.6% and 66.4%, respectively) and meat reducers (55.2% and 73.4%) were the least likely. Larger dietary group variation was visible when indicating one's ability to cook without AFPs (see Figure 8.3a, below),

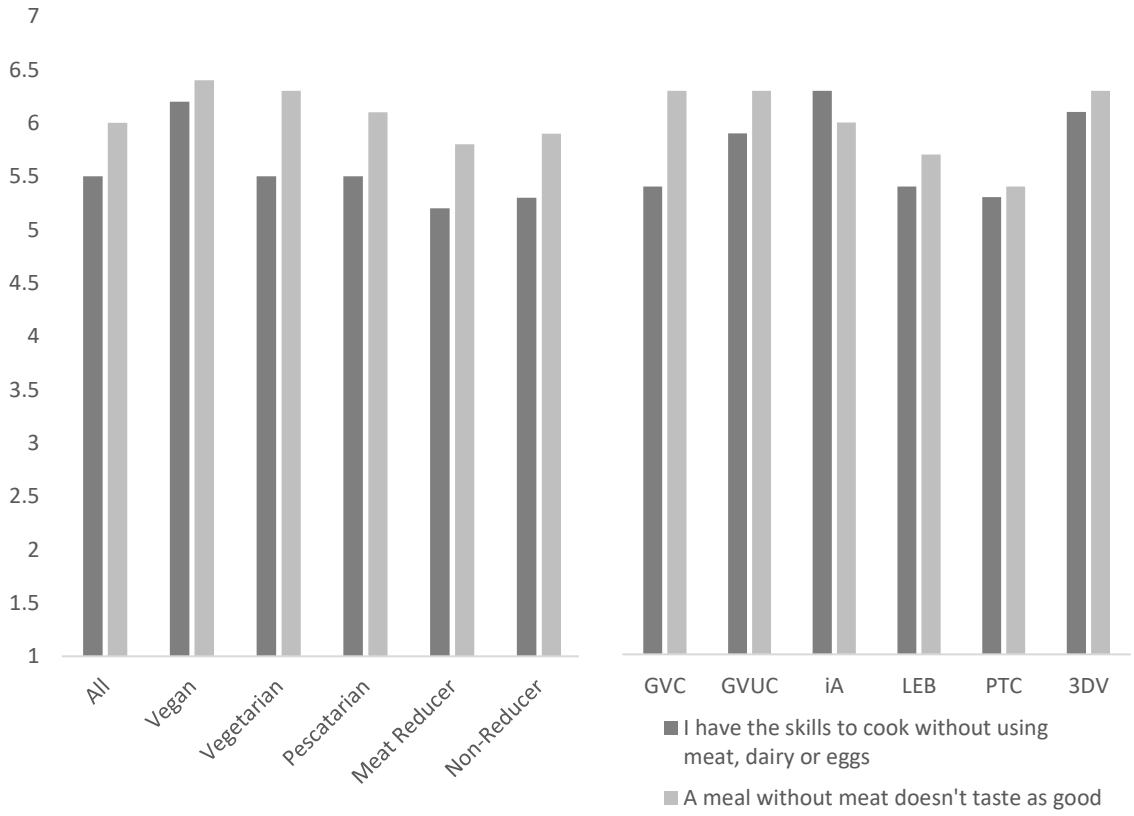
[10] Within the BCW, there is a second component of capabilities, physical capabilities, which includes 'physical skill, strength or stamina' (Michie et al. 2014a, 63). Though elements of this could be relevant to reduction – including physical abilities and skills regarding purchasing and preparing food – these would be included under the psychological capabilities questions. Though outside the scope of this research project, additional research could explore further links between physical (dis)abilities and veg*n cooking and food access.

with vegans much more likely to be confident in their skills. Vegetarians (66.3%) and pescatarians (60.1%) were, instead, more similar to the meat-eating groups in their reporting of cooking skills.

The perception that 'some vegan things are so complicated to make' (MA2) was described as a challenge by some meat reducers, with BN2 adding: 'I found it really difficult to find recipes'. It is possible that by cooking veg*n food less often and keeping some old habits, meat reducers rely more heavily on recipes, maintaining notions of the difficulty in following a fully veg*n diet. Meat reducer and 'part-time vegan' MA2 regularly participated in one vegan month a year and described her mindset during her first attempt as: 'I had this sort of siege mentality around kind of battening down, so I just ate stodge. I've gotta eat chips; I've gotta eat bread; I've gotta eat unhealthy'.

Figure 8.3 Knowledge barriers at zero months

a) … within planned dietary groups *b) … within campaign samples*



Since then she has 'found it easier', but still relies on conscious decisions to overcome pre-formed habits reinforced throughout the rest of the year, continuing to remain heavily reliant on recipes when preparing meatless meals:

> We're all so programmed. When you come home from work and you think, "What are we gonna have for tea?" And you put some slab of meat under the grill and you pour it over your potatoes. That's what you do. That's what we've done all our lives. That's kind of the British

> diet, isn't it? And then when you're a vegan and you've got your list of ingredients like this [long] and you've got to get out your Veganomicon cookbook and all these lists of ingredients and you have to try to substitute different things and you think, “Might this be a bit like this kind of [ingredient] I've never heard of and can't get in England?” and the habit, and the time and convenience, lead into each other.

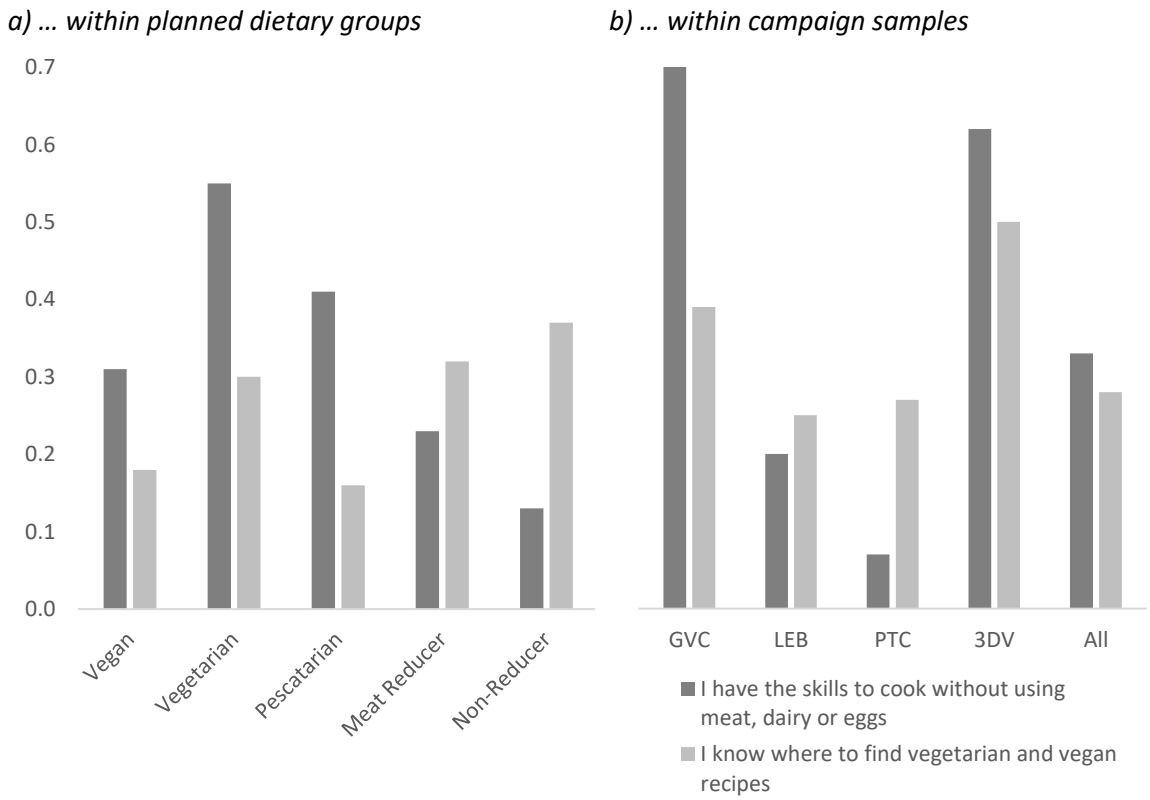
By maintaining omnivorous norms whereby a proper meal necessitates a central meat component, meat reducers and early transitioners may rely more heavily on outside resources and recipes. For a transitioning veg*n who must form new conceptions of a proper meal, the abandonment of previous tendencies may make it easier to assimilate to new habits. However, where these new routines are not formed and the consumption of a veg*n meal requires conscious planning, the reducer may struggle to fit veg*n eating practices into their daily routines.

For those whom taste is an important factor (see previous section), the ability to make and find tasty veg*n food could be a crucial component in changing habits: ‘It’s like taste is what you can create yourself and it goes against habits and you can change your habits if you know how to cook right and tasty. Otherwise, you can’t change your habits’ (meat reducer and planned vegan, LO3). Several vegan participants described needing to cook more due to a lack of convenient food options. While veg*ns may have had more opportunities to acquire essential knowledge by regularly enacting these skills through the consumption of veg*n meals, reducers may more easily avoid cooking, potentially inhibiting further development of essential competencies. Nonetheless, some veg*ns did rely on ready-made and convenience foods and avoided cooking. For instance, vegan LO3 identified herself as ‘a terrible cook’ and ‘lazy’: ‘If I couldn’t find anything to eat, I’d eat toast or something’. Near-vegan BN4 described ‘being lazy’ as leading her to consume more non-vegan convenience foods, ‘eat[ing] more vegetarian when I’m out’ and was, for her, the main barrier in her ability to follow a fully vegan diet.

Participants appear to have grown in their knowledge of preparing veg*n foods, with these barriers having some of the largest reductions during the research period. Initial average responses of $\bar{x}$=5.5 for cooking and 6.0 for recipes at zero months changed by $\bar{x}$=0.1 and 0.2, respectively, to one month, 0.2 and 0.3 from zero to three months and 0.3 for both to six months. Many participants described knowledge as a potential barrier during the initial stages but stated that ‘you build that

[knowledge] over time' (BN9). For instance, near-vegan BN4 excitedly described one of her favourite resources: 'Have you seen this site? It's called BOSH! ... And what it does is it just shows you how to make something, but it's speeded up. … It's just amazing. Everything, when it goes "BOSH!" you think, "I want that now!" … That's such a brilliant website'. Resource sharing was a recurring element in every focus group, with participants readily offering and discussing their favourite resources. Finding easy resources that match one's lifestyle could be a key source of initial knowledge formation. Overall, after six months participants were more likely to report having the skills to cook plant-based foods, including 95.8% of planned vegans, 78.8% of planned vegetarians, 72.5% of planned pescatarians, 65.5% of meat reducers and 63.8% of planned non-reducers.

Figure 8.4 Changes to knowledge barriers from zero to six months



Reported knowledge increases were most prominent amongst those in vegan campaigns, while within dietary groups increases varied between types of knowledge gained. While veg*ns and pescatarians had larger increases to reported cooking skills ($\bar{x}$=0.31 for planned vegans, 0.55 for vegetarians, 0.41 for pescatarians, 0.23 for meat reducers and 0.13 for non-reducers), meat eaters had larger increases to recipe-finding skills ($\bar{x}$=0.18, 0.30, 0.16, 0.32 and 0.37, respectively). The participants of vegan campaigns, all of which included regular e-mails with recipes and information

about finding vegan foods (Chapter 4), had greater gains in knowledge during the research period than did those in reduction campaigns (see Figure 8.4b, p. 214). Discrepancies were most noticeable for cooking skills, with a 0.71 average increase amongst GVC participants and 0.62 amongst 3DV participants, compared to 0.20 for those in the LEB and 0.07 for those in the PTC (see Figure 8.4a, above).

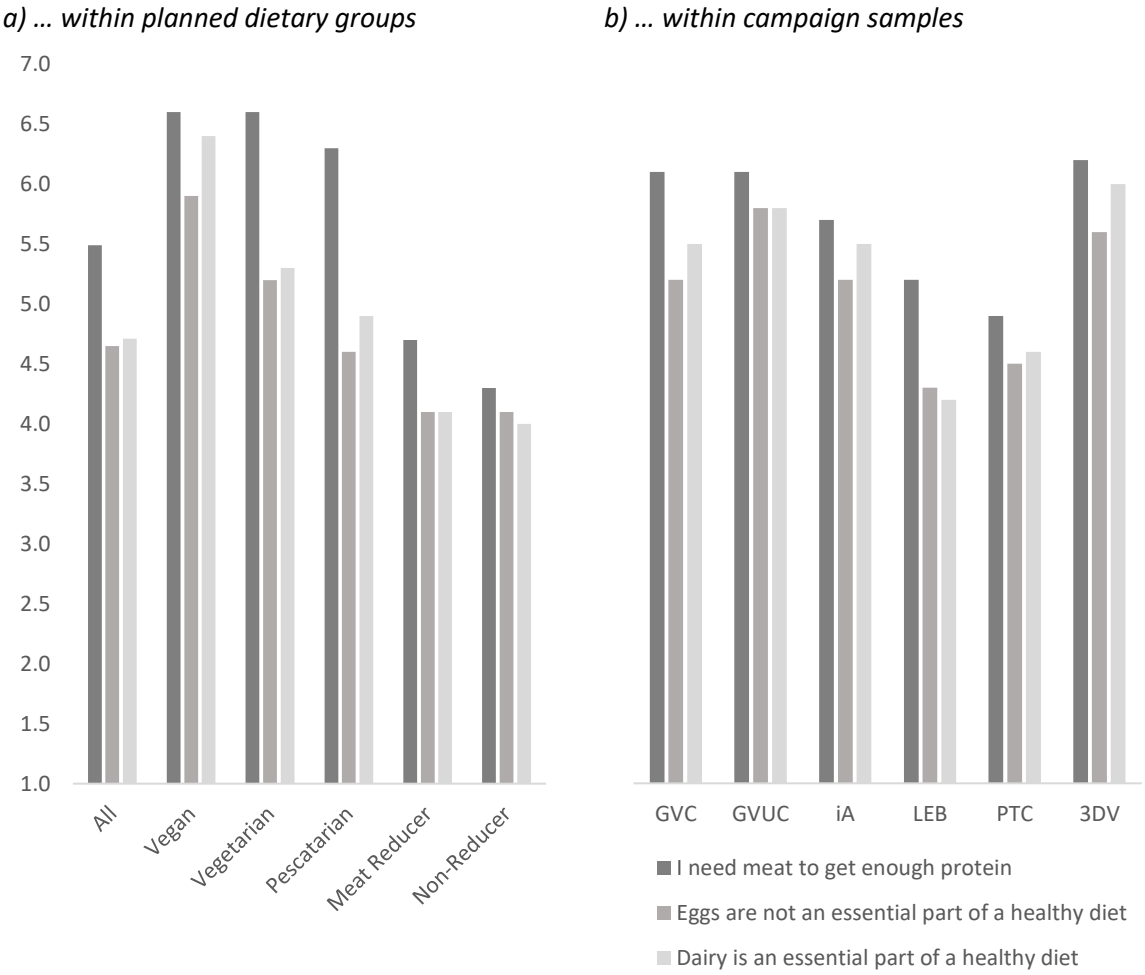
Campaigns were cited as a key source of essential veg*n knowledge by many participants. Vegan LO3 described regular campaign communications from the GVC as indispensable in her and her husband's transition, as neither enjoyed cooking. They struggled in the first few weeks of their transition to find the time, information and motivation for daily food preparation:

> If you do one of those campaigns, they … give a daily thing where they will e-mail … and say, "These are things to eat today, things to eat this week". That's quite useful. I think that's probably how we managed to continue with it 'cause … those first few, couple of weeks it was really difficult and I said, "I think we're gonna slip back", but we didn't. And now I don't think we ever will.

In this initial phase, LO3 and her husband were able to reduce their need to seek out additional information by relying on the provided recipes to prepare their own meals.

Another area where campaigns could provide vital information was in health perceptions, an addition component of psychological capabilities. Compared to knowledge-based barriers, questions about the necessity of consuming AFPs exhibited larger initial and ongoing variations between campaign samples and dietary groups. Animal protection campaign participants tended to be less likely to view AFPs as essential. For instance, when asked about the necessity of consuming eggs, GVC participants had an average response of 5.2, while GVUC participants had 5.8, iAnimal 5.2, LEB 4.3, PTC 4.5 and 3DV 5.6 (see Figure 8.5b, p. 216). Current veg*ns and pescatarians almost universally agreed that meat was not an essential source of protein (93.6% of vegans, 94.9% of vegetarians and 88.5% of pescatarians), while meat reducers (45.6%) and non-reducers (33.8%) were more likely to be uncertain than to agree (see Figure 8.5a, above). The differences were more apparent between each dietary group for eggs (79.2%, 58.9%, 50.0%, 29.5% and 24.6%, respectively) and dairy (93.6%, 62.2%, 49.4%, 28.4% and 22.3%) being nonessential dietary components.

Figure 8.5 Health barriers at zero months

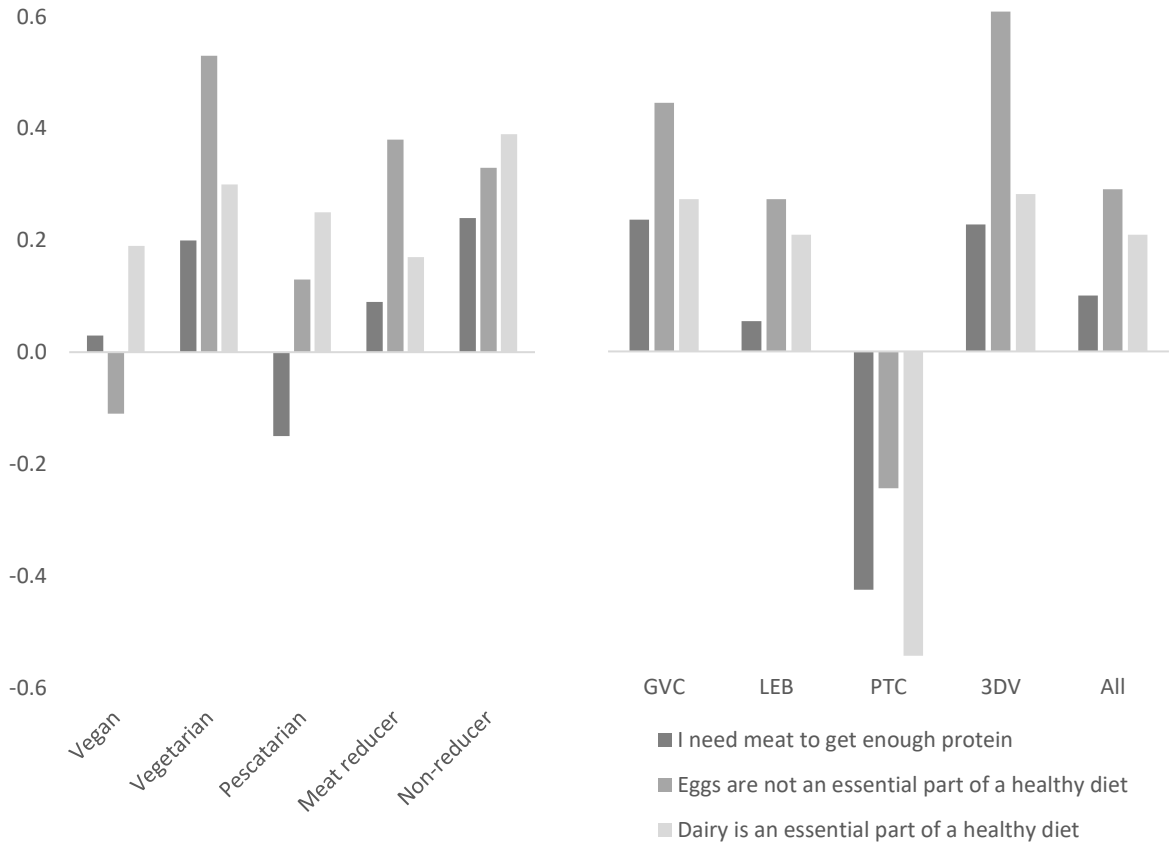


Perceptions of health barriers could be closely linked to social and cultural elements, as vegan VI1 explained: 'It's so ingrained that you just think that you must need it'. After transitioning, the social element was a prominent barrier for many new vegans (see 8.6). A lack of information or misinformation about health and the necessity of consuming AFPs could lead new transitioners to feel that 'suddenly, everybody's some kind of medical expert and really concerned about your health' (VI1). To address others' concerns, vegan VI4 'armed [her]self with information to give [her friends and family]'. However, the prevalence of misinformation and contradictory information could cause problems for new transitioners when faced with health-related questions. In her studies, LO7 described the pervasiveness of misinformation about health and food as concerning: 'I'm a medical student and … where there's probably the most misinformation is with diet. … It's actually confusing in the medical profession itself, as in you can talk to different consultants and they'll say completely different things'.

Health concerns were, for some, a key barrier in their transition. For instance, vegan VI3 continued to consume meat occasionally for several years because she 'was still under the impression that we needed a certain amount of meat in our diet'. Vegetarian and transitioning vegan BL2 stated: 'The thing that was holding me back from going vegan was the B12 thing', thinking that she needed to consume AFPs in order to avoid a deficiency. Accumulating such knowledge leading up to or after a transition could empower reducers (e.g. VI3 and BL2) to combat misinformation and feel more confident in their dietary decisions.

Figure 8.6 Changes to health barriers from zero to six months

a) … within planned dietary groups *b) … within campaign samples*



Along with both knowledge questions, the necessity of eggs for a healthy diet had the largest decrease to barrier perception (Δ=0.32, CI 0.17 to 0.47) during the research period, followed by the perception that dairy is essential (Δ=0.23, CI 0.12 to 0.34). Decreases were more noticeable in the vegan campaigns, with PTC participants, on average, being more likely to view these foods as essential after six months (see Figure 8.6b, above). Overall, 38.3% of participants reported a decreased perception of eggs as essential, which included 35.7% of GVC participants, 39.8% of LEB

participants, 33.3% of PTC participants and 41.7% of 3DV participants. In addition, 33.3% of participants reported a decreased perception of dairy as essential, which included 33.1% of GVC, 34.9% of LEB, 13.3% of PTC and 23.1% of 3DV participants.

A lack of access to information or resources could inhibit the development of psychological capabilities. Those without any formal education had the most significant reported deficiencies in both knowledge-based measures ($\bar{x}$=4.8 for cooking and 5.4 for recipes), while those with Bachelor's ($\bar{x}$=5.5 and 6.1, respectively) or postgraduate degrees ($\bar{x}$=5.6 and 6.2) were more likely to feel capable of cooking and finding vegan recipes. 52.8% of those without any formal education, 75.0% of those completing secondary education, 75.2% of those with vocational qualifications, 78.6% of those with Bachelor's and 82.4% of those with postgraduate degrees described themselves as having the skills to cook veg*n food. For finding recipes, those with a degree – particularly those with a postgraduate degree – were the most confident in their skills (55.6%, 58.6%, 56.0%, 60.2% and 64.0%, respectively). Conversely, for health barriers, younger participants and those without a degree were more likely to believe that eggs and dairy are not essential dietary components.

Psychological capabilities, including accumulating health-based information and the skills to identify and prepare veg*n foods address the 'how' for a pre- and early transitioner. Being uncertain about or encountering others concerned about the healthfulness or adequacy of a veg*n diet can inhibit dietary change and cause doubts for new transitioners. However, particularly for new veg*ns, by acquiring knowledge about healthy veg*n diets and the negative health impacts of AFPs, they may feel more empowered in and committed to their decisions. Similarly, a lack of knowledge about cooking and finding recipes can cause difficulties in the initial phases of a transition. If not compelled to replace formerly omnivorous dietary norms by continuing to consume meat, reducers may be more likely to default to old habits and to rely on recipes. This can shift dietary temporalities, which are used to hold practices stable within the daily rhythm (Southerton 2013). Vegans were most likely to report cooking skills, suggesting that those unmotivated to cook may need additional sources of support to transition to a vegan diet. Non-

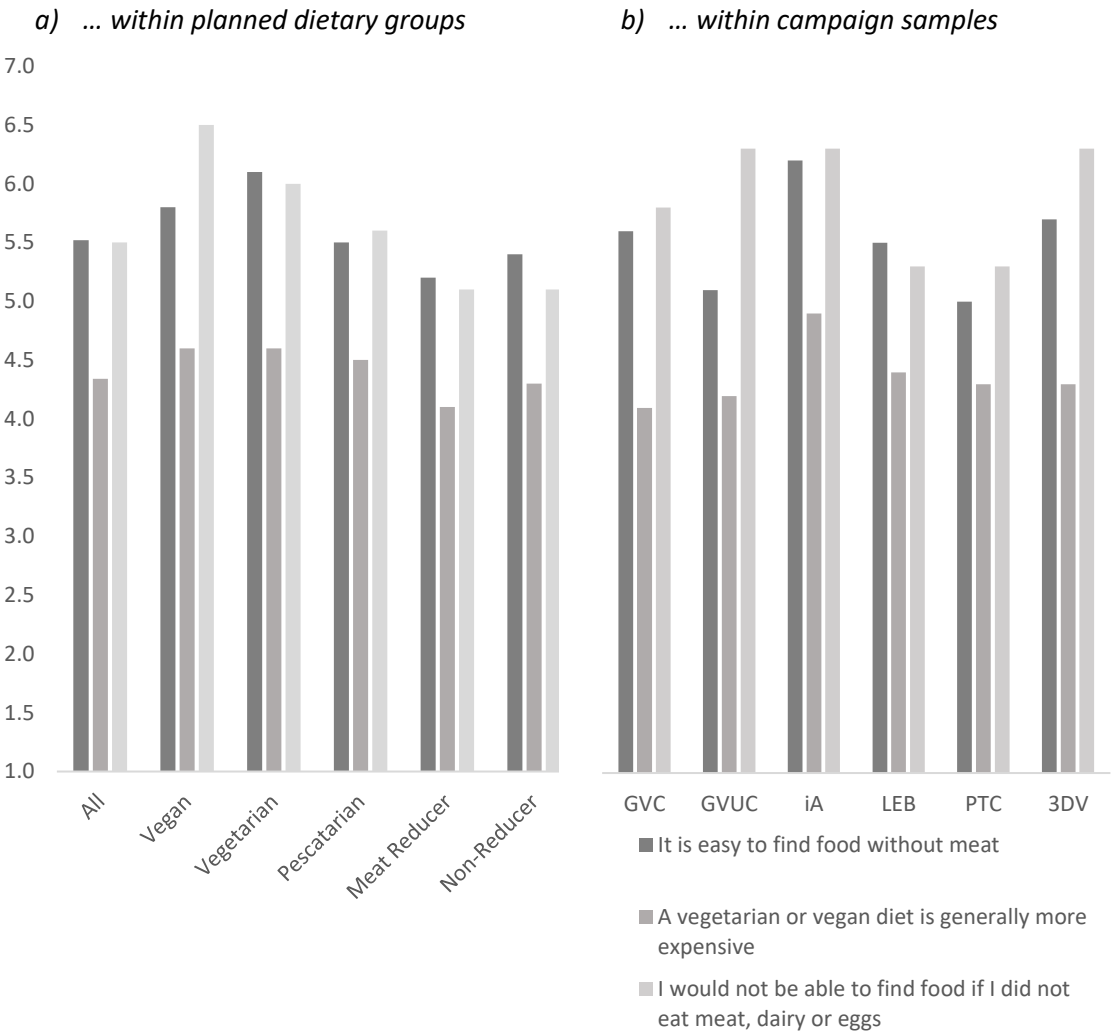
vegans may also need support in developing skills to decrease their reliance on recipes. Juggling preparing and finding convenient foods could prove a struggle for those unmotivated to cook, particularly causing some near-vegans to continue to purchase vegetarian convenience food.

8.5 Physical opportunities: availability and access to essential resources

Physical opportunities were regularly described as an important, and in some cases the most important, barrier for reducers' abilities to meet their dietary goals. This particular area addresses 'opportunit[ies] afforded by the environment involving time, resources, locations, cues, [and] physical "affordance"' (Michie, Atkins and West 2014, p.63). In the survey, the perception that a veg*n diet is more expensive was the largest reported barrier ($\bar{x}$=4.3 at zero months), while the two availability questions were seen as less obtrusive ($\bar{x}$=5.5 for both) but still more prominent than the majority of barrier questions. Cost was also one of the largest barriers for every campaign population and dietary group (see Figure 8.7, p. 218), with average responses between 4.0 (neutral) and 5.0 (somewhat disagree) in each group.

The cost of veg*n food was commonly cited as a barrier within survey responses, in addition to being a frequent source of disagreement within focus groups. More than one in six participants (17.4%) reported that veg*n diets are more expensive, including 14.1% of vegans, 15.2% of vegetarians, 17.1% of pescatarians, 17.6% of meat reducers and 20.5% of non-reducers. Participants were, however, more likely to be uncertain (52.2% of participants), including 37.2% of vegans, 44.6% of vegetarians, 47.2% of pescatarians, 55.7% of meat reducers and 60.4% of non-reducers. In focus groups, some, including meat reducer BL1, argued that 'cost can be a factor'. She explained: 'Good vegetables are very expensive and meat is cheap. Shouldn't be, but it is'. Others believed a veg*n diet was either comparably or less expensive than an omnivorous one. For instance, vegan LO3 stated that a vegan diet is 'not expensive. I don't know where that came from'.

Figure 8.7 Physical opportunity barriers at zero months



The lack of consensus could, in part, be related to perceptions of cost within cultural norms constructing AFPs as more valuable than plant-based foods. Thus, paying the same amount for a meat-free option may be perceived as paying too much, as one participant expressed: 'I don't wanna pay that amount of money for a salad, but I would pay the same amount of money for something that I felt was more substantial' (MA1). This could reinforce notions that a veg*n diet is reliant upon sacrifice, such that perceptions of physical opportunities, including cost, may be linked to reinforced pre-conceptions of what foods are the most valuable in a meal.

Perspectives on whether a veg*n diet was more expensive were generally divided around the balance between cooking (which could be associated with healthy eating), time and cost. Meat reducer BN5 explained: 'I think it depends on if you're … a cook or not, 'cause I know someone who's gone vegan recently who's not a cook, so she buys a lot of the processed vegan stuff', which, she explained, could cost more than comparable AFPs. This particularly included vegan cheeses,

veg*n meats and other ‘vegan alternatives’, which near-vegan BN4 described as ‘ridiculously expensive’. She argued that the high price of substitutes is the reason behind perceptions that veg*n diets are more expensive, but stated that ‘overall, I’m spending the same’. Thus, those more reliant on convenience foods and AFP substitutes may perceive the diet as more expensive, as LO3 clarified: ‘The vegan cheese is expensive, isn't it?’ Pescatarian LO8 clarified her perception on the topic by saying a veg*n diet is expensive ‘only if you're using the substitutes, I guess, because they've manufactured the substitutes. Whereas, if you're using the natural things, that can't [cost] any more’.

Perceived and actual cost are likely to be related to the availability of and reducers’ reliance on AFP substitutes and veg*n convenience foods, while being inversely related to their propensity to cook. As a result, time can be an additional barrier, as discussed in 8.3, with reducers having to balance preparing and cooking food with access to convenient food items and cost. For those uninterested or without the time or knowledge to cook, the availability of ready-made meals and AFP substitutes may be essential. New transitioners may struggle between incorporating vegan practice into their daily schedules through cooking or relying on convenience food. MA1 described convenience and a lack of control over her food choices as key to her now eating meat after over a decade as a vegetarian: ‘About five years ago I started eating meat again. It was sort of a situational thing. I was travelling a lot and I was staying with people and it was sort of a convenience thing. And it just kind of led on from that’.

Availability barriers, along with those about the healthfulness of dairy and eggs, had some of the largest variations between dietary groups. In particular, 82.3% of vegans, 76.1% of vegetarians, 68.6% of pescatarians, 56.9% of meat reducers and 49.3% of non-reducers believed that it was easy to find food without meat. Discrepancies were increased when participants were asked if they would be able to find food if they did not consume meat, dairy or eggs (96.2%, 81.6%, 63.6%, 53.2% and 43.6%, respectively). This supports notions that some (but not necessarily most) veg*ns and pescatarians think finding appropriate foods is not easy, but continue to follow such a diet, perhaps potentially creating a feeling of sacrifice.

For those with the resources, time and motivation to find and prepare meat-free meals, the increased variety and healthfulness of one's diet could be perceived as a positive. Vegan VI4 stated: 'It is kind of time consuming, but it's more rewarding, 'cause I've never really liked cooking before and now I've gotten into it and I really enjoy it, and it's something that me and my husband do together. That's something that's been really positive. So even though it does take longer, it's been good'. Cooking presented social opportunities for VI4 and her husband through a bonding experience around a common interest. LO4 added that having 'less convenience options' means 'automatically getting more fruits and vegs', making her diet 'overall much, much healthier'.

However, availability could be further hampered if reducers were concerned about other components of sustainability or consumer ethics. The act of becoming a more conscious consumer could lead some reducers to encounter new ethical dilemmas around food consumption, such as issues around worker treatment, environmental degradation or greenhouse gas emissions. Thus, additional considerations could become important in purchasing decisions, potentially further limiting availability and convenience, while increasing overall cost. Planned vegan, current pescatarian BL4 described additional components of ethical consumption as central to why she thought price was a significant barrier for reducers:

> After you become vegetarian or vegan and you start to [be] more conscious about how it's produced and where it's produced, who produce[s] it and all this elements and then you not only buy veggies and to just buy the cheapest and then you think about, "Oh, organic and Fair Trade and everything". [The price] just go[es] up and then become[s] more expensive.

The necessity of reflecting on ingredient sources and production inherent within the reduction process could create new types of psychological capabilities and ideals for consuming ethically. However, this could negatively impact physical opportunities and increase perceptions that such diets are difficult when consumers are confronted with further dietary restrictions (e.g. organic).

Other concerns included the ethics of buying food from non-veg*n businesses and balancing price with convenience, availability and each individual's (possibly shifting) sense of morally justifiable dietary behaviour, as with current vegetarian, transitioning vegan BL2: 'I don't like Tesco's and … they haven't got any ethics or morals, … but … I might have to switch from Sainsbury's to Tesco's to be able to get the things that I need to keep going with this journey'. Some

participants expressed discomfort with having to go to large supermarket chains that may not have aligned with their own ethical stance in order to purchase specialised veg*n alternatives (e.g. vegan cheeses and vegetarian meats) at a lower price.

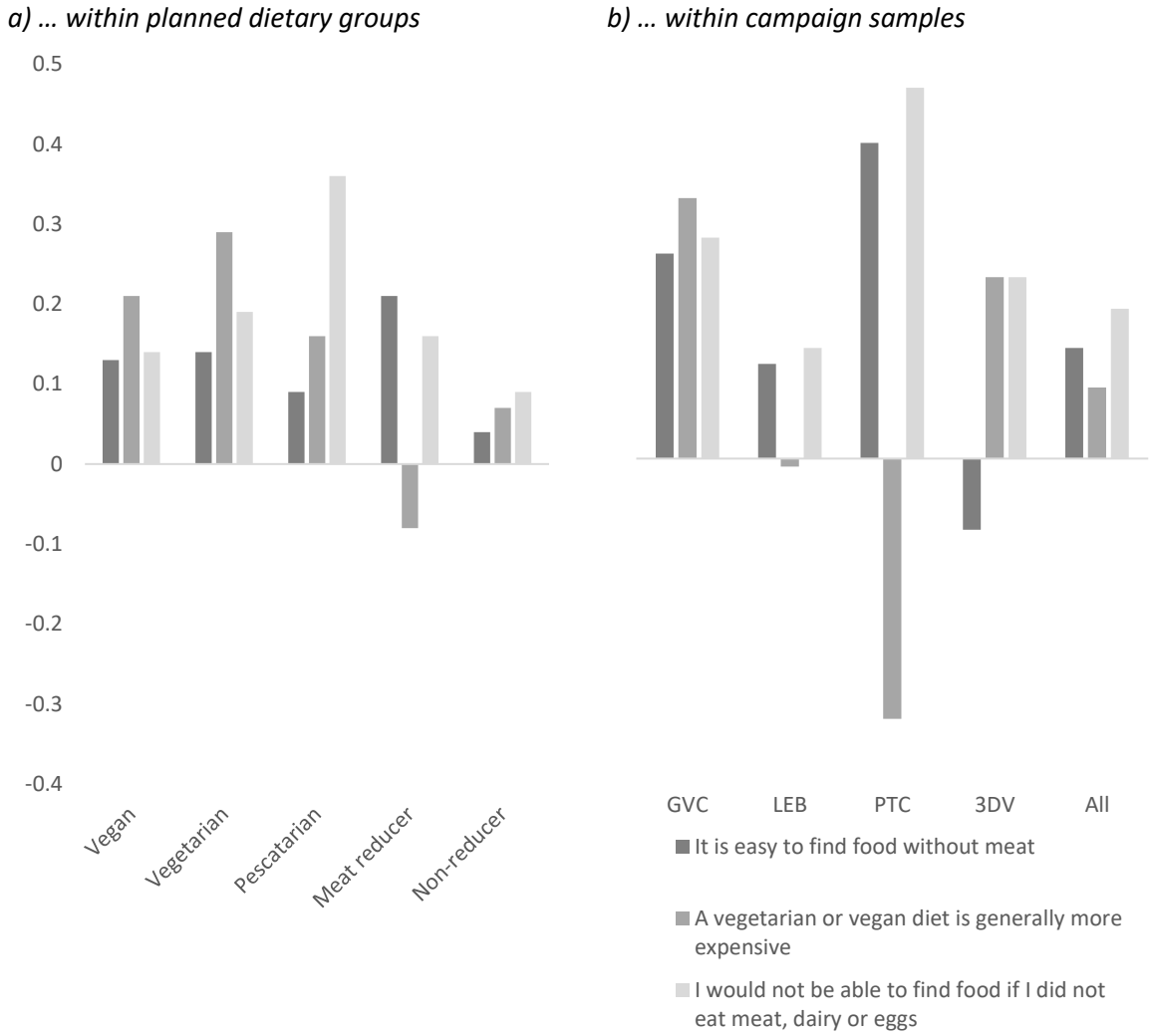
Reducers reported various strategies to manage conflicting values, ethics and desires. Some reducers who felt morally obligated to consume a veg*n diet described a willingness to make sacrifices, particularly around taste when cost or availability were prohibitive. This could result in more flexible notions of an adequate meal. For instance, vegan LO3 described a willingness to simply eat toast if she did not have the time or money to prepare what may be more commonly construed as a full meal, while fellow vegan VI3 explained, 'I don't think I've found the convenience thing too much of a problem. If I haven't got anything, I just buy fruit'. However, many cited convenience as a key inhibitor of becoming full veg*ns or pescatarians: 'But if it was easy, … if it was readily available everywhere you went, most people would do it' (near-vegan BL4).

Having kids could also decrease physical opportunities, particularly if lacking in information about plant-based nutrition for children. The transitions of two mothers and planned vegans, BL4 and BL2, were at least partially hindered by their children's continued consumption of AFPs. By having AFPs readily available and using them in food preparation for their families, they found themselves consuming these foods: 'I still struggle with a bit o' cheese 'cause my kids love it so much and I love halloumi, so it's gonna be a hard transition for that bit' (BL2). BL4 did not want to make her son feel deprived, describing how he 'loves sausages and if I tell him he could never have another one, he would cry'. This created 'a dilemma', as she did not want to 'throw [meat] away' that her son did not eat, explaining, 'so I will eat it'. In addition, having dependents could reduce a reducer's resources, with lifelong vegetarian and vegan of one year MA4 explaining: 'When you speak to people and you're asking them, "What's stopping you from going vegan?", for me it's always been people saying time and convenience, especially if they've got a young family'.

Fiscal flexibility, time and access to affordable convenience foods could be prominent issues for those on low incomes or with families, potentially leading some reducers to be more likely to report not having the necessary psychological capabilities or physical opportunities to prepare and

cook their own vegan meals. Resultantly, a lack of available resources could decrease physical opportunities when individuals were less able to afford pricier convenience foods and AFP alternatives. This could, however, cause an increase in required time when having to prepare more meals at home and could account for why financial barrier perceptions were linked to multiple sociodemographic categories. Specifically, perceptions that veg*n diets are more expensive were related to income ($\bar{x}$=4.1 for the lower three income deciles, 4.2 for the middle four and 4.6 for the highest three), educational attainment ($\bar{x}$=4.5 for those with a degree and 4.1 for those without) and ethnicity ($\bar{x}$=4.4 for white participants and 3.9 for POCs).

Figure 8.8 Changes to physical opportunities from zero to six months



During the research period there were increases in perceived physical opportunities, particularly for veg*ns and pescatarians and, for cost, for vegan campaign participants (see Figure 8.8b, above). Veg*ns and pescatarians were less likely to view veg*n diets as more expensive after six months (Δ=0.2 for vegans, 0.3 for vegetarians and 0.2 for pescatarians from zero to six months),

while meat reducers were somewhat more likely (Δ= -0.1) (see Figure 8.8a, p. 224). For abstainers, the perception may be worse than the reality. It could also be that those who do not consume meat may be less likely to rely on substitutes or other more expensive specialised items. Some veg*n participants (i.e. BN4, BN9, VI3 and BN6) described convenience as a significant issue during the initial transition but afterward, once they had acquired the necessary knowledge: 'It's difficult. … It's got easier to work out, 'cause once you've established a certain brand, … then you just go straight for that' (vegan VI3).

Changes are also likely to be related to a theme that emerged in each focus group discussion – the increased availability of veg*n alternatives around the UK. For instance, vegan BN9 explained that 'it has got[ten] a lot easier' to find veg*n foods in recent years. Many veg*ns (e.g. LO3, BN3 and BN5) echoed the sentiment, with near-vegan BL5 describing her transition as 'a lot easier than I thought, because the alternatives are just so many'. BN9, one of two male participants and the focus group participant who had spent the most time following a fully vegan diet (eight years), described his early transition as 'completely different' and 'a bloody nightmare'; 'you had Linda McCartney [vegan] sausages and that was it'. Now, he explained, 'it's a lot easier'.

Even with substantial improvements in availability (Chiorando 2018), an element of control could still be necessary, with reducers describing difficulties when traveling or eating out with omnivorous friends, family or colleagues. Vegan VI1 described needing to travel for work as challenging: 'A lot of the time at train stations and stuff, when it's just pasties and sausage rolls and sandwiches and there's nothing vegan and I find that really difficult'. Vegan BN6 struggled when she 'went skiing recently', describing encountering a lack of food options as 'quite hard'. She clarified that this was not her usual experience: 'I find traveling is a lot easier now than it was when I first went vegan and I've been vegan two and a half years'. For some reducers (particularly those continuing to consume meat) travel could be associated with deprivation if unable to try local (non-veg*n) cuisine, such as meat reducer BL3, who explained, 'If I work away, chances are I'm gonna have a fry up in the morning for breakfast'.

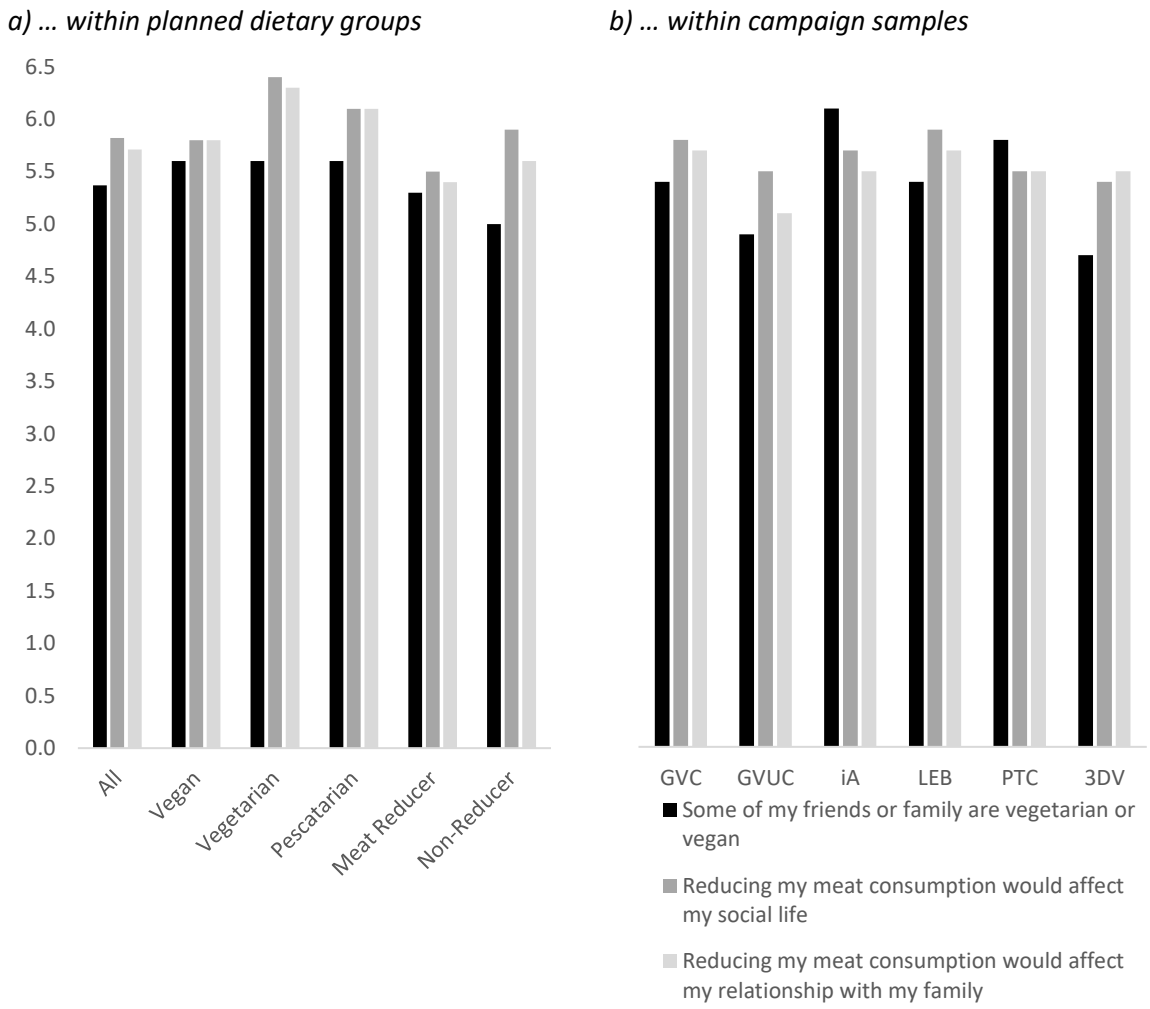
The availability and cost of meat-free and veg*n foods can create feelings of ease or difficulty in the transition process, depending on one's psychological capabilities. For instance, a wide variety of items may be available but if individuals do not know where or what they are, availability can remain an issue. However, decreases in reported barriers and repeated statements that accessing these foods has become 'a lot easier' (BN9) suggest that for many reducers – particularly those who do not have the option of purchasing foods containing meat or other AFPs (i.e. abstainers) – a steep initial learning curve may be necessary to gain the skills to find appropriate foods. Availability and convenience were also closely linked with a consumer's priorities, including health and taste, as well as their financial and temporal resources, particularly their dependence on cooking and/or on AFP substitutes. However, as veg*n foods become more prevalent, availability may become less of a barrier in the future.

8.6 Social opportunities: community support and social isolation

Social opportunities are those 'afforded by the cultural milieu that dictates the way that we think about things' and includes those 'by interpersonal influences, social cues and cultural norms' (Michie, Atkins and West 2014, pp.228; 63). Of the barrier categories, social opportunities were the most likely to worsen during the six-month period. Specifically, participants were more likely to perceive their social lives and families as being negatively impacted by reduction practices after six months than at the campaign start, with 25.1% reporting a higher perceived barrier and 17.8% lower. Of the BCW categories discussed, reported social opportunities were also some of the most consistent across campaigns and dietary groups (see Figure 8.9, p. 227). However, LEB and GVC participants were the most likely to disagree that reducing their meat consumption would affect their social life (74.8% and 72.3%, respectively) or their relationship with their family (71.2% and 70.9%). Having veg*n friends or family exhibited somewhat more variation between groups and was more likely to decrease as a barrier over time, though those participating in vegan campaigns were not necessarily more likely to have veg*n friends or family. Specifically, participants in iAnimal and PTC – both of whom targeted university students – were the most likely to report having veg*n

friends or family (78.1% and 74.1%, respectively), while those in the GVUC (57.9%) and 3DV (53.2%) were the least likely.

Figure 8.9 Social opportunities at zero months



The first social barrier addressed in the survey – having veg*n friends or family – was closely related to dietary category, with vegans the most likely to respond affirmatively (78.5%), followed by vegetarians (72.3%), pescatarians (70.4%), meat reducers (67.5%) and non-reducers (54.8%). Some reducers indicated that a lack of individuals sharing similar experiences and dietary decisions led to feelings of isolation, such as vegetarian and transitioning vegan BL2 who stated, 'I don't really know anyone [veg*n] close to home'. Similarly, vegan VI2 admitted: 'I actually don't have any vegan friends in [my town]' and 'I have felt really lonely actually at times'. Vegan BN6 described social barriers as more or less prominent depending on 'who you're surrounded with', such that after facing difficulties while living with her omnivorous family, she now lives in an environment where

'it's so normalised'. The social context and changes to social opportunities could inhibit or support a sense of normalcy around one's dietary choices.

For new reducers or those who have already transitioned, access to other reducers could be a vital source of information and increased motivation, while potentially combatting feelings of isolation. With multiple campaigns specifically targeting university students (i.e. GVUC, PTC and iAnimal), this was commonly described by campaign staff (e.g. AA1, PTC1, AE1 and AE2) as a key time to transition and be a part of a veg*n community. AE2 explained: 'University is ideal, because they're on their own for the first time, cooking their own meals. So, they're at that stage where they're in control, … where they can make a decision to stop eating meat'. Educational attainment was related to having veg*n friends or family, with those with a degree more likely to report such acquaintances (70.6%) than those without one (62.9%).

Though most focus group participants made their transitions alone, 21.2% did so with a friend or family member. The experience was universally depicted as helpful. VI1 decided to sign up for the 3DV and invited her sister, VI2, and friend, VI4, to join her. All three were still maintaining a vegan diet five months later and described the change as permanent. BN3 and her husband – both already vegetarians – had participated in a vegan month together to support a planned permanent transition. LO1 also made the decision to reduce her meat consumption with her sister, primarily 'for health reasons'. While BN8 made the transition from a vegetarian to vegan diet on her own, she had the support of her boyfriend (BN9), a vegan of many years.

MA5's decision to become vegan and her ability to maintain the diet for the two years since was closely linked to positive and negative social interactions. Shortly after transitioning to a pescatarian diet, she signed up for the GVC as part of her university's animal welfare society. For MA5, her university experience was pivotal in her transition: 'I really wanted to be vegetarian. But then I met some vegans at university and I thought, "Okay, for a month, I'll give it a go. It's gonna be a challenge". I thought it was a bit radical, so I never wanted to stay vegan'. During the month she 'really did feel the health benefits' but at the end of the November challenge did not feel that she could continue a vegan diet. Specifically, she 'didn't want to put the pressure on [her family]'

during the upcoming Christmas holidays, so instead committed to maintaining a vegetarian diet. Concerns about making things more difficult for her family and their perceptions about her commitment to a vegan diet were, for MA5, a key inhibitor: 'If your parents don't approve and just don't take it seriously, I think that's really hard'.

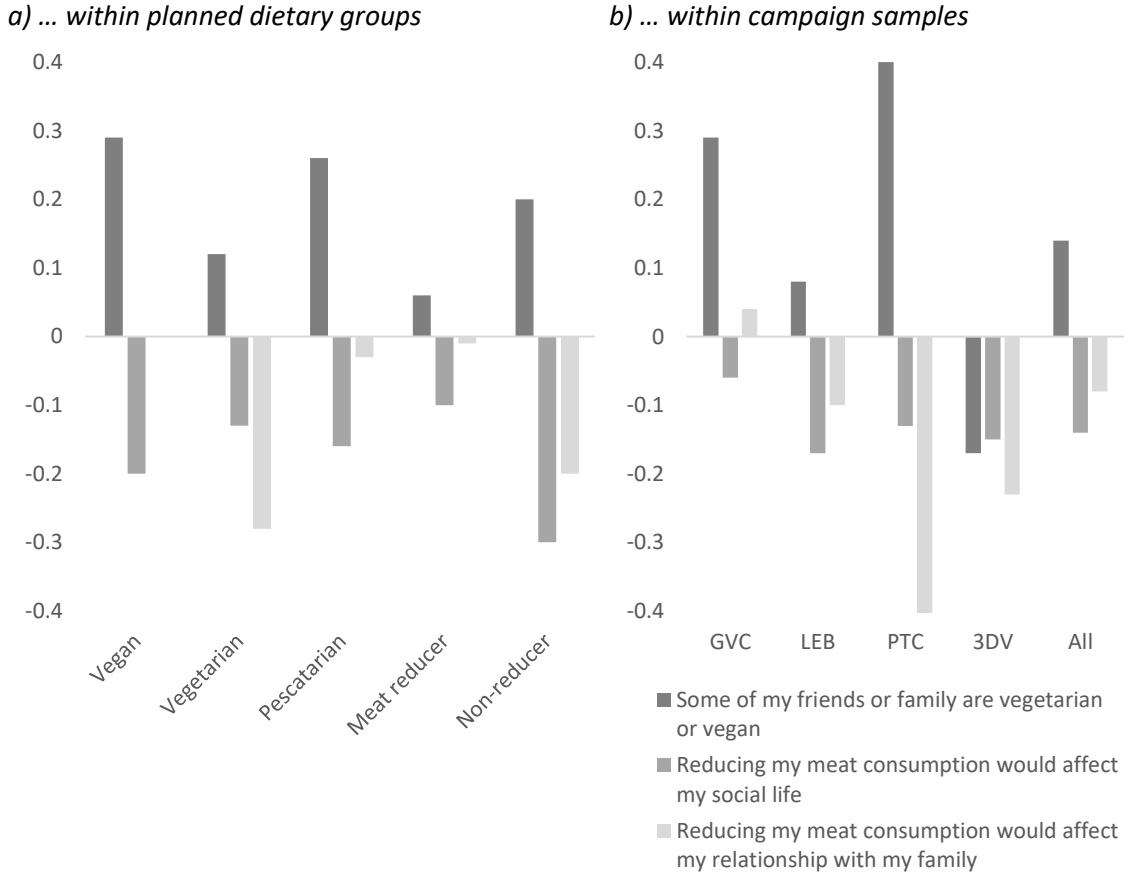
Concerns about her family's perceptions may have initially impeded MA5's decision to become vegan, but social opportunities were key in her decision to return to the diet a month later. She stated: 'It's important to have a community. Otherwise, you feel like you're the strange one'. She explained that by the end of the month, 'I did consider other people, but I guess I got a bit selfish. I was like, "No! I'm gonna be awkward. I'm gonna try vegan". And having a vegan community at my university. … I found it really easy to do it as a group'. MA5's decision was constrained and steered by two oppositional forms of social pressure and support – feelings of guilt and being 'difficult' with her family and a desire to be part of a community she found supportive – while coming to terms with her sense of what was right for herself.

While having friends or family to practice veg*nism and share information with could be a helpful resource and source of support, the decision to transition could result in other social difficulties, particularly for transitioning and new vegans. As with MA5, who felt comfortable going home a vegetarian (partially because a close family member was already vegetarian), returning as a vegan may seem too 'radical'. For instance, the perception that reduction would impact one's social life ($\bar{x}$=5.8 for planned vegans at zero months, 6.4 for vegetarians, 6.1 for pescatarians, 5.5 for meat reducers and 5.9 for non-reducers) or relationship with family ($\bar{x}$=5.8, 6.3, 6.1, 5.4 and 5.6, respectively) was more prominent amongst vegans than vegetarians or pescatarians.

Social opportunities were the most likely of the barrier categories to worsen over time. Though participants were more likely to have veg*n friends or family after six months, they were also more likely to feel that reducing their meat consumption would negatively affect their social life or relationship with their family (see Figure 8.10, p. 230). Planned vegans and non-reducers were the most likely to report an increase in the perception that meat reduction would affect their social life, with Δ=-0.14 for all participants and -0.20 for planned vegans, -0.13 for vegetarians, -0.16

for pescatarians, -0.10 for meat reducers and -0.30 for non-reducers. For impact to family, vegetarians and non-reducers had the greatest barrier increase: Δ=-0.09 for all participants and 0 for vegans, -0.28 for vegetarians, -0.03 for pescatarians, -0.01 for meat reducers and -0.20 for non-reducers.

Figure 8.10 Changes to social opportunities from zero to six months



Negative social reactions, often to a decision that reducers may feel passionate or excited about, were a common theme in every focus group, with most vegan participants sharing feelings of guilt, anger or frustration when engaging with family or friends after transitioning. MA3 described this dilemma:

> I think at first, you're like, right; it's new. I'm gonna do it. And you've got that mindset. Then, you've got people that you know and you're close to pushing against it. So, it makes something even harder. It's like when you're trying to eat healthy and obviously that's a habit that you need to form and then other people are telling you, making it so much more difficult as well.

If people the reducer is close to respond negatively to their dietary lifestyle, this could be prohibitive, eliciting negative thoughts and experiences around a decision that may have previously been viewed positively.

New reducers could also be inundated with questions and disagreements around health and ethical elements of consumption. BN6 explained:

> You're constantly having to fight your battles and you're having to defend what you're eating. That was exhausting. When I was back at home and that was almost like a – do I really wanna do this anymore? And I had to keep continuously reminding myself of why I was doing it because … I felt a lot of pressure to educate myself on having the right answers when people asked me questions … It's just very stressful. You don't wanna have to have a deep, quite heated argument every time you have a meal and I think that would be something that would push people to not do it so much anymore, … if you have to defend your food choices all the time.

This 'explaining and debating' (MA3) led VI1 to perceive that: 'since going vegan I've kind of learned food is as evocative a subject as religion or politics. People get so passionate and angry about it, particularly if you're a vegan and they're a meat eater. You're kind of contradicting everything about their belief system. So, they get very defensive'.

The cultural connotations of a meal can be particularly emotive, as Douglas explains: 'the ordered system which is a meal represents all the ordered systems associated with it. Hence the strong arousal power of a threat to waken or confuse that category' (1972, p.80). If 'each meal is a structured social event which structures others its own image', as Douglas theorises (1972, p.69), a veg*n meal can threaten the systems and symbols underlying normative mealtime constructs. As consumption and lifestyle have become increasingly important in determining social identity (Wilska 2001), changing dietary habits may also contribute to social distancing and rejection from groups where one no longer follows assumed consumer behaviour.

Embracing a vegan identity that may cause non-vegans to experience dissonance around their continued consumption of AFPs could cause feelings of isolation for vegans. As with MA5's vegan transition while in university, having a supportive community when facing negative responses from non-vegan friends, family and acquaintances could be significant for vegans. BN9 described having social support as essential to a positive transition: 'You have to have a community of people. You have to have other vegans behind you'.

In addition to creating and enforcing veg*n norms that could help generate new understandings of food and consumption, campaigns could also provide social opportunities, as

through GVC's Facebook group and annual retreat. This may partially account for GVC participants' greater likelihood of having veg*n friends or family after six months (72.9% of participants, compared to 69.1% at zero months), in addition to the slight decrease in feelings that reduction could negatively affect relationships with family (Δ=0.04). The only group with a larger increase in the former was PTC (Δ=0.4), where the opportunity to join teams may have granted favourable circumstances to meet other veg*ns. BL6 described her motivation to participate in the 3DV and Veganuary after having already fully transitioned to a vegan lifestyle as 'to be part of this nice vegan community where people share ideas and they send you fun facts'.

Encounters with other veg*ns could also serve to overcome stigmas, as LO7 experienced when joining vegan social media groups: 'There are actually some other vegans out there and quite a lot are fairly normal people!' Finding community and commonality through social media was a common theme, with LO7 explaining: 'There are quite a lot of good on-line communities as well now, to make people feel more welcome, and I started to discover these vegan Facebook groups'. These could present valuable opportunities to share experiences and resources. Meat reducer LO9 explained, 'You need to have someone. It can be one other person … and that's the great thing about Facebook and all that kind of stuff, is that you know you're not alone'.

The potential for feelings of isolation and social distancing from omnivorous and non-vegan friends could arise through conflict over one's new lifestyle choices, a discomfort with the continued dietary practices of non-vegans or the appeal of joining or forming veg*n communities with those who may have similar ideals and experiences. The decision to be vegan was described by V13 as being perceived as 'a judgment. As soon as you say you're vegan, immediately they feel judged'. As a result, non-vegans could criticise vegans' dietary and ethical decisions: 'They start trying to find faults in your lifestyle' (MA4). To manage and address potential conflict some described needing to increase their psychological capabilities by acquiring additional knowledge (e.g. VI4, see 7.5).

Most vegans described conflict with non-veg*ns as 'really difficult' (MA3) or, for MA5, 'really hurtful', 'especially if it's someone you're close to'. BN9, who had transitioned to veganism

overnight nearly ten years prior, described the social component after transitioning as 'exhausting … battling all the time'. Family and friends could also become frustrated with feelings that veg*ns were 'awkward' (VI2) or 'fussy' (MA5). For some, this resulted in the loss of or weakening of certain relationships. For instance, near-vegan BN7 recounted a negative experience early in her transition, when a friend 'accidentally put a comment on Facebook that I saw. … We met up in London for a weekend with a group of ours and obviously breakfast — I had to check it was vegan food, and so I think she found me a bit of hard work, but I wasn't wanting to draw traction to myself. I just had to make sure'. While other friends defended her in the situation, this particular friendship was damaged by the encounter, with BN7 explaining, 'I'm not really that bothered about arranging to meet up with her again'.

Dietary ethical commitments could also cause discomfort when maintaining relationships with those not making similar decisions. As vegan VI2 explained: 'Other people's reactions and other people's behaviour and also my opinions of other people have changed because of their reactions, so that's quite difficult as well'. The reconciliation of cognitive dissonance through changing one's dietary habits could also result in the realisation that others may still experience such dissonance when their ethics do not align with their habits. This could lead to feelings that omnivores' dietary behaviour contradicts their beliefs or that it is unethical, either on the part of the vegan or the non-vegan. Near-vegan LO3 mimicked the perceived contradiction in ethics and practice of meat eaters, joking: '"Oh, I love animals, but I love meat". Oh, shut up!'

Reducers could struggle with family and friends who continued to practice dietary habits now seen as unethical, creating a performative and influencing element in their dietary choices: 'I only really splash out on vegan food when I'm trying to impress my non-vegan friends, 'cause I'm not fussy and I'll have beans and rice and I'll be fine. But when I'm trying to impress people I will be like, "Okay, I have to get the best of the best now", which can be pricey for sure' (vegan BN6). Performing one's veg*n lifestyle could create added pressure in social situations, with the desire to be able to counter criticisms and concerns, while showing one's dietary choices in a positive light. Vegan VI4 described the daily need to present veganism positively through her actions and

mannerisms: ‘You do feel kind of like you're representing veganism … and then you want more people to go vegan obviously, so you don't— you wanna be like a really positive role model for it and like if people ask you questions you wanna have all the right answers that will convince them to go vegan as well’.

While initial or ongoing conflict could lead to social distancing it could also abate with time, which was also found in Twine (2014, p.629)’s research, either as people grew accustomed to the reducer’s dietary choices or as the reducer was able to diminish the emotional or psychological impact of negative reactions and comments. For BN9, his decision to be vegan became a core part of his identity in his friendship group, and he recounted ongoing questioning about his choices and their impact: ‘I was known as “the vegan one”’. This was not a universal experience, though, with vegan LO3 stating: ‘I've never had a negative response, EVER, even when I was a child, being vegetarian’. For those who did experience initial conflict and difficulties, the feelings or dynamic could eventually improve. Vegan sisters VI1 and VI2 described their parents’ initial disapproval of their dietary transitions, not knowing how to make vegan food and worrying about their daughters’ health, with VI2 quoting her mother saying, ‘“Oh, gosh, this is just too drastic!”’ Health issues also brought up concerns about their diets: ‘Anything that went wrong, if I was like, “Oh, I’m really tired today, ‘cause I worked a fifteen-hour day” or something, my mum would be like, “Oh, I don’t think this veganism’s working for you, darling”’ (VI1). However, over the few months that VI1 and VI2 had maintained a vegan diet, their parents’ responses had dramatically improved, now purchasing and consuming vegan foods and even planning a vegetarian month. Exposure to veg*ns may lead to increased acceptance that such a diet can be healthy, while vegan eating practices may become increasingly normalised.

Some may have either been or have become less concerned with negative social responses. Vegan VI4 described overcoming initial discomfort with people’s negative reactions to her vegan identity: ‘I suppose I just got to the point where I think if other people think it's stupid or I'm just being difficult, I don't really care’. Reducer LO4, who also described no longer being as concerned with others’ opinions, attributed this to getting older, in addition to the growing societal acceptance

of veg*nism: ‘I think it's easier being vegan and vegetarian not just today but when you don't care what people think. I couldn’t care less if somebody criticised me now whereas, when I was a teenager, I really cared a lot’. Those 55 and over (70.1%) were also more likely to have veg*n friends or family than 35 to 54-year-olds (68.4%) and 18 to 34-year-olds (62.7%).

For others, concerns about being seen as awkward, difficult or judgmental could lead them to tailor their behaviour in an attempt to avoid potential conflict, instead focusing on meeting the real or perceived desires of omnivorous friends and family. This could include purchasing and preparing foods they personally did not consume. Pescatarian and transitioning vegan BL4 described her husband’s and her discomfort with the idea of not providing houseguests with foods they desired: ‘For us, sometimes [we] feel like, we have people over – they eat meat we know – and then when we make something [with meat] … but then we feel guilty, “Oh we don't want to buy this sausage, but we have to buy because we are making party and want to welcome non-vegetarian people”’.

When meat continues to be conceptualised as a crucial component, such that a meatless meal is inherently lacking, abstainers may feel pressured to provide these items or feel discomfort when they do not. However, where omnivores did engage in veg*n practices, such experiences had the potential to support new conceptions of such meals as tasty and sufficient. Vegans, in particular, may utilise ‘oppositional strategies to reinvent the meanings of veganism [to] focus on pleasure, health and naturalness, and attempts to erode the symbolism of meat as definitional to, and constitutive of, a meal’ (Twine 2017, p.209). However, for some the focus was instead on avoiding being seem as awkward or difficult (see 8.3). BL4’s primary concern was not wanting to make omnivorous people uncomfortable when going to their homes: ‘If we are invited, if they don't ask if we are vegetarian or not, then we will just eat whatever we are offered. We don't want to be, “Ah, we are vegetarian. We don't want to eat your meat”. So, we just go with the flow’.

Social barriers and situations could thus create situations whereby near-veg*ns and pescatarians continued to consume AFPs. This could include a desire to not be perceived as difficult or awkward, such as MA5 initially choosing to be vegetarian instead of vegan or BL4 and her

husband eating meat in social situations. Living and working in settings dominated by omnivorous social norms could also be a source of temptation and social pressure to consume AFPs. Along with availability and convenience, social opportunities were often depicted as the final obstacle for those striving for a fully veg*n or pescatarian diet. For instance, vegan MA3 had continued to consume non-vegan pizzas and cakes at work and in social situations after initially transitioning:

> It was easy to cut out the dairy and cheese and eggs, 'cause I just didn't do it at home and I got the vegan alternatives, but then … when I was at work and there was cake … and the chocolate and … it was just kind of like, it was there. I weren't buying it, everyone else was buying it, and I was still eating it. And then it was like, now and then again, social, I was eating cheese. Like if someone bought a pizza and I was hungry, I'd eat the pizza with cheese on, kind of thing.

Situations where the social norm is to consume AFPs, where they are readily obtainable and alternatives may not be, could force new transitioners to navigate complicated and potentially sensitive social situations and dynamics. Thus, the decision to continue consuming otherwise uneaten foods in certain social situations could be a coping strategy to avoid creating awkwardness or conflict. It could also be an opportunity to experience the shared pleasure of consuming foods that they may have previously enjoyed.

Another mechanism to avoid conflict and social discomfort could arise through relationships with other veg*ns and involvement in veg*n communities, which could be an important source of support and a chance to reinforce veg*n norms. Vegan VI1 explained: ‘Surrounding myself with as many people like that has been the most helpful thing for me. You kind of lose your tolerance for people that aren’t vegan’. Through the reinforcement of veg*n norms and ethics and the potential further integration into veg*n communities, some veg*n participants described a further lack of understanding for and tolerance of omnivorous habits and practices. MA4, a vegan activist who had been a vegetarian since she was a child, described her struggle ‘coming across people who don’t understand and like just dealing with their ignorance’. Vegan VI4 echoed this sentiment but specified that it was not omnivorous behaviours that she struggled with but the decision to consume AFPs when knowing their impact: ‘I think lack of awareness is easy to understand, but it’s when people are aware but they just don’t care enough to change’. Through a combination of push and pull factors, reducers and, in particular, vegans, could become or feel

distanced from omnivorous friends and family, while potentially feeling a sense of belonging and comfort in veg*n communities.

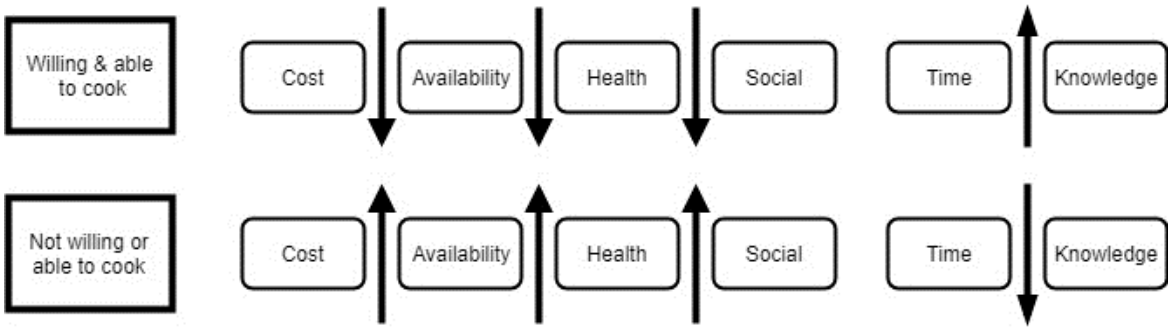
Social opportunities are a key component of a reducer's transition, particularly for veg*ns, though generally under-discussed in research. Social barriers were the most likely to increase during the research period and were the only area where, for impact on one's social life, current and planned vegans reported higher increases than other dietary groups. Social distancing could arise through a number of areas, including: stigmatisation, negative responses by omnivores and difficulties with seeing others consume AFPs. Access to communities and other reducers could help to overcome stigmas, provide opportunities to acquire essential skills and information and create supportive settings around common norms and ethics. However, social distancing from omnivorous norms and individuals, in conjunction with the formation or growth of veg*n communities, could further contribute to difficulties encountering omnivorous behaviour. Ultimately, the social component is closely connected to automatic motivation through the formation of habits, taste perceptions and associations with identity categories, while being a key influencing factor on psychological capabilities and physical opportunities. Addressing this element of behaviour change could have far-reaching effects on the way consumers categorise and consume foods.

8.7 Conclusions

An examination of reduction barriers using the Behaviour Change Wheel reveals both the applicability of the Wheel in analysing these categories and the inability for these areas to be addressed in isolation. Each element affects and is in turn influenced by other components. For instance, as seen in Figure 8.11 (p. 238), one's willingness and ability to cook can impact a variety of other barriers. An inclination to prepare one's own food can improve the healthfulness of one's diet and provide social opportunities, while decreasing costs and reducing the need to access convenient or specialised veg*n products. However, cooking generally takes more time and depends on food preparation knowledge. A change to one type of barrier (e.g. financial resources) could have an impact on a variety of other barrier perceptions (e.g. availability).

In designing interventions each barrier cannot be considered or addressed in isolation and strategies may need to be more individualised to acknowledge the diverse types of consumers and their personal circumstances, preferences and needs. For instance, when providing veg*n recipes it is likely that some participants do not have the time or motivation to cook, while others may have to prepare food for omnivorous family members unwilling to eat meat-free meals. Taste preferences can also vary greatly, with the majority of this sample willing to try new foods, while other consumers prefer to generally maintain familiar habits and foods (Warde 2000). While some veg*ns may miss the taste of meat, cheese or other AFPs, some meat eaters may feel that veg*n food is equally or even more tasty than omnivorous meals.

Figure 8.11 Relationship of cooking with other reduction barriers



That participants were more likely to see potential barriers as opportunities rather than obstacles is a critical finding, suggesting that reducers may not view transitions as particularly difficult; however, the struggles faced by many in meeting their reduction goals (see Chapter 6) suggests that barriers may be more prohibitive than the survey results would suggest. For instance, while only 5.8% of participants agreed that meat is essential for protein (while 61.9% disagreed and 33.3% were uncertain), 55.3% of participants planned to continue eating meat (see 5.4) and 29.4% of participants did not meet their meat reduction goals, including a majority of meat reducers (see Chapter 6).

In the early transition, reducers may experience a steep learning curve in developing the skills and knowledge to identify and prepare veg*n meals. Those enacting these skills and using this knowledge on a regular basis may have further opportunities to develop them and, importantly, to

integrate them unconsciously into their daily lifestyle. Month-long challenges seemed to present one opportunity to practice veganism and create unconscious skills, with a steady growth in current and planned vegans in both the GVC and 3DV campaigns. However, for those unready or unmotivated to completely abstain from particular AFPs, a reduction pledge may be an opportunity to expose oneself to new ways of eating and overcome pre-conceived stigmas about veg*n foods and lifestyles. For this group simply preparing and consuming a meatless meal may be a radical act, one that defies previously accepted notions of the necessary components in a meal.

Reducers may ultimately need to make a variety of changes in their dietary habits to successfully transition and those who only partially embrace a new lifestyle, in the form of reduction, may be less able to fully assume new habits, as is discussed further in 9.6. Research suggests that the unconscious nature of habits and other elements of automatic motivation requires the practicing of new ways of eating repeatedly for over two months in order to fully form a new habit (Lally *et al.* 2010). Reducers may also more easily slip into old habits when facing a lack of time or available convenience foods or when confronted with omnivorous social situations.

The social and cultural role of AFPs may make it particularly difficult to overcome old habits when facing stigmatisation, social pressure and a lack of support in one's dietary choices. This can include ideas of the value of particular food items (8.5) and the adequacy of combinations of foods in forming a sufficient meal (6.3.1). AFP substitutes (e.g. 'mock' meats) may help in transitioning by replicating familiar tastes, textures and meat-centric meals but may contribute to the maintenance of omnivorous norms (Hoek *et al.* 2017; Hoek *et al.* 2011; Twine 2018). The ability to cook vegan food seems to be a key distinction between vegans and other dietary groups, while meat reducers may have been most likely to rely on recipes (8.4). After becoming vegan, eating practices may change as consumers could be more likely to cook from scratch, eat fewer processed foods and seek ways to be creative in meal creation (Twine 2018).

External and internal supports are needed for reducers to feel positive about their dietary lifestyles. The idea that not consuming certain AFPs is a sacrifice is likely to reflect social hierarchies prioritising meat and other dietary foods (Twigg 1981). This sense may be heightened for certain

social groups, as these foods also tend to be associated with masculinity and wealth (Adams 1990; Fiddes 1991). Adams, in particular, describes deeply-embedded historical links between meat and manhood, strength and virility, explaining that '[p]eople with power have always eaten meat' (1990, p.26). Men may fear being seen as less masculine if they do not consume animal flesh (Ruby and Heine 2011), with Rothgerber arguing that interventions need to acknowledge 'a primary reason why men eat meat: it makes them feel like real men' (2013, p.363).

For some, being highly motivated may be sufficient to accept barriers and sacrifices (9.4). For instance, vegan BN6 described struggling with regular negative responses to her vegan diet from friends and family as particularly prohibitive during her early transition. Focusing on her motivation (animal protection) allowed her to maintain her commitment. A high degree of motivation – and in particular motivating factors related to animals – may help support reducers in overcoming and accepting reduction barriers, while the acceptance of new, veg*n dietary norms may help form and maintain new ways of eating that reject previously-held omnivorous norms.

Chapter 9 From reflective to reflexive: developing a new way of eating

9.1 Introduction

Findings discussed within this dissertation support a view of a varied reduction process that tends to occur gradually, suggesting the need for more targeted interventions. The absence of target populations within campaigns may contribute to the lack of diversity identified within their populations (5.2 and 9.2). Reduction is not simply about what one eats but how one eats and with whom. The social and cultural elements of consumption, in particular, have been largely unaddressed by this group of campaigns (Chapter 4 and 9.3) but emerged as particularly impactful in the reduction process (Chapter 8 and 9.3).

Reducers are likely to need to change not only what they eat but their overall relationship with food in a way that fits with their social and cultural habitus. The gradual nature of reduction commonly embodied by participants may help them develop new habits and experience new ways of eating through the incorporation and acceptance of meatless or vegan meals (Chapter 6 and 9.6). However, gradual changes can inhibit overall reductions when following the reduction hierarchy and focusing on eating less red meat while maintaining familiar, omnivorous norms. The formation of new unconscious habits and sustained reductions may require approaches to dietary change that focus on transforming the reflective into the reflexive through the incorporation of eating patterns that de-centre a meat-type element and re-centre the animal source (Chapter 8 and 9.6). Amongst this group of reducers, animal protection was generally key in predicting successful reduction, through the potential reconceptualisation of AFPs as representative of suffering and death (Chapter 7 and 9.4). This mindshift may, ultimately, support the formation of a commitment to a fully vegan diet. However, such a mindshift may not be possible for those more concerned with pro-self elements; here, the creation of health-focused campaigns may be most important, at least in triggering initial motivation.

9.2 A lack of diversity amongst campaign participants

In order for campaigns to reach more potential reducers, they are likely to need to consider individual characteristics, dietary trends and goals. Otherwise, campaigns may be unable to promote the widespread social and political change necessary for future sustainability. A lack of sociodemographic diversity within the sample (5.2) suggests that campaigns are reaching overlapping populations but with a disproportionate percentage of female, white, high income and university-educated individuals. The group was also likely to be already reducing and aware of the benefits of meat reduction for the environment (89.3%) and animal welfare (85.3%), as well as motivating factors for egg and dairy reduction (70.6%). Vegan campaigns drew a large proportion of vegetarians and pescatarians (61.2% of GVC, 55.0% of GVUC and 38.3% of 3DV participants), while reduction campaigns generally contained a high proportion of meat reducers (52.3% of LEB and 45.5% of PTC participants).

The lack of male participants in surveys (19.8% of participants) and focus groups (5.9% of participants) is likely to reflect a lower proportion of men within reduction populations, as exhibited by previous research (Lee and Simpson 2016; Stoll-Kleemann and Schmidt 2016; Kollmuss and Agyeman 2002) and self-reported campaign demographics (see 3.4.4). Men and those without degrees also appear to be less likely to consider reducing their AFP consumption (Latvala *et al.* 2012; Tobler, Visschers and Siegrist 2011). These findings support the wealth of literature linking meat-eating habits with masculinity (Adams 1990; Rothgerber 2013; Thomas 2016).

The focus on animal protection and environmental motivators within campaigns may be a contributing factor to some of the lack of participant diversity. For instance, men may be less likely to question the consequences of meat production and consumption, while placing less value on reduction motivators and more on barriers (Cordts, Nitzko and Spiller 2014). In support of previous research (e.g. Lee and Simpson 2016), this study also found that men may be more likely to be motivated by health reasons (primary motivator for 66.1% of men and 59.2% of women). Men were also more likely to not be motivated by animal welfare (6.2% and 2.7%, respectively) or the environment (5.1% and 4.1%). Conversely, an awareness of environmental motivators was highest

amongst women and those with degrees, as has been found elsewhere (Stoll-Kleemann and Schmidt 2016; Lee and Simpson 2016; Mohr and Schlich 2016).

Pro-social factors may also be less likely to motivate non-reducers. Meat eaters within this sample were more likely to report pro-self motivators than abstainers, including health (90.3% of meat eaters and 74.0% of abstainers) and financial (73.5% and 38.0%, respectively) factors. Meat eaters were also more likely to not be motivated by the environment (6.0% and 2.5%, respectively) or animal welfare (5.3% and 0.8%). These findings support existing research, such as Corrin and Papdopoulos (2017)'s meta-review, which found that health was a larger motivator for semi- than full vegetarians.

The lack of campaigns addressing health reflects the broader population of organisations contacted, with only one of 48 focusing on health motivators. Most participating campaigns, however, did include health components in messaging and communications. By focusing more on pro-self-elements (i.e. tasty food), the 30 Day Vegan campaign may appeal more to health-motivated individuals, with their participants having the highest rate of health motivation (7.5**)**. Nonetheless, health was reported as a primary motivator by more than one-half of survey respondents and emerged as influential for several focus group participants, with MA3 describing it as 'a really, really big motivator' in her decision to go vegan.

That almost every member of this sample reported being largely motivated by altruistic or 'pro-social' (as opposed to 'pro-self') (Verain, Sijtsema and Antonides 2016) elements is unlikely to reflect the greater population and, potentially, many reducers who are motivated by health, price or taste. In particular, findings that the environment ($\bar{x}$=3.2) was almost as significant a motivator as animal welfare ($\bar{x}$=3.4) and higher than health ($\bar{x}$=2.6) is in contradistinction to previous research with more general populations where health has typically been identified as a more common motivating factor (Dibb and Fitzpatrick 2014; Lee and Simpson 2016; Latvala *et al.* 2012; Tobler, Visschers and Siegrist 2011; Izmirli and Phillips 2011; Lea, Crawford and Worlsey 2006; Corrin and Papadopoulos 2017). Lower environmental motivations amongst the broader UK population may be partially due to a general lack of awareness, as well as the difficulty in understanding

environmental issues that are easily abstracted from dietary choices (Tobler, Visschers and Siegrist 2011; Gardiner 2011; Bailey, Froggatt and Wellesley 2014).

The high reporting of environmental and low reporting of health motivators within this sample may be due to a variety of factors. It may be that previous research generally undervalues environmental and overvalues health motivations, though this is unlikely due to the wide volume of research supporting health's important role as a motivating factor (see Table 2.2, p. 41). Alternatively, those drawn to campaigns may be more likely to report pro-social motivators. This could partially or wholly be due to the focus on pro-social elements within this sample of campaigns and campaigns in general, while those emphasising pro-self elements may draw a distinct, more health-focused population that is less motivated by pro-social components and appears to generally be absent from this sample.

However, it is unclear how effective health motivators are in promoting reduction, as they were linked to lower reduction rates and success. Twine (2017), for instance, argues that emphasising the positive elements of veganism (i.e. its healthfulness) may inhibit the development of ethical vegan meanings, whereby consumers create direct links between AFPs and the suffering and death of animals. The health motivation may, instead, be most effective as a secondary motivator, when animal protection is a primary motivator. This could include the provision of information that supports the healthfulness of a plant-based diet and contradicts potential preconceptions about the necessity of AFP consumption. It may also be that those for whom health motivators would lead to greater reductions were generally absent from this sample. Future research addressing the potential influence of health-based campaigns and health-based motivators could be extremely beneficial in answering these questions.

Another potential contributing factor to a lack of diversity within campaign participants may be the influence of veg*n stigmas, including that vegans (and potentially vegetarians as well) are 'really extreme' (VI2) in their lifestyle choices, a highly privileged group, 'fussy' eaters (BN7) or 'hippies' (BL5) (8.3). Such beliefs may deter participation in reduction campaigns by individuals not wanting to be associated with such stereotypes. Individuals may be more likely to join or feel

committed to a campaign if they feel that it reflects their values (Han 2012). A lack of diversity within campaign populations, in junction with the notion that veg*n diets are expensive or the domain of white, wealthy and/or highly-educated individuals could make the lifestyle seem inaccessible. During one focus group, vegan BN9 stated: 'I would assume we're all probably middle class, a certain kind of education bracket'. Such assumptions were also discussed in a 2018 documentary highlighting the lack of visibility of vegans of colour in the United States, describing common views that the lifestyle is 'a white thing' (*The Invisible Vegan*).

Associating veg*n diets with expensive foods and lifestyles may make reduction seem inaccessible for low income individuals, particularly when combined with policies that have enabled the mass production of cheap AFPs (Vinnari and Tapio 2012; Johnston, Fanzo and Cogill 2014; Gill *et al.* 2015; Garnett *et al.* 2015). This is exacerbated by meat prices being deliberately kept low in ways that are invisible to the general population (see 2.4), such that '[w]hat the consumer sees is cheap and abundant meat' (Fuchs *et al.* 2016, p.303). This is likely to contribute to notions that a veg*n diet is more expensive, the largest reported barrier within the sample (Chapter 8).

The findings discussed within this dissertation support previous research where cost was found to be a significant obstacle to consumers' perceived abilities to consume sustainably and have freedom of choice (Food and Agriculture Organization 2010). Financial factors are a primary component in general consumer decision making and malnutrition, undernutrition and an inability to access nutritious foods are likely to become increasing global issues (Morley, McEntee and Marsden 2014; Verain, Sijtsema and Antonides 2016). Assumptions or perceptions that veg*n diets are more expensive are likely to make reduction campaigns seem even more inaccessible to those in low income communities. Ethical dietary trends, when linked with the growth of consumerism, can be used by wealthy consumers 'as a mark of social or cultural distinction: as a form of consumption used to discriminate against the less culturally or financially endowed' (Littler 2011, p.34).

Those earning low incomes may have less flexibility when choosing food items and be more likely to consume lower quality diets with higher quantities of fatty meats (Darmon and

Drewnowski 2008). Further restricting one's dietary choices – with participants commonly relating reduction to sacrifice (Chapter 8) – may thus be seen as a privilege for those with more time, resources and financial power. Greenebaum, however, describes 'mindless eating [a]s both a privilege and a detriment' (2017, p.361), such that it is not the act of being vegan that is the privilege but the ability to choose one's food without witnessing the exploitation of animals and workers within the modern food system. Nonetheless, common beliefs in the value of AFPs can be powerful inhibitors in reduction and, in particular, in fully abstaining from these foods.

The lack of representation of POC within mainstream animal protection and reduction organisations has been raised as a concern by some researchers and advocates (e.g. Harper 2010), as discussed in Chapter 2. The manner in which human oppression has been addressed by certain organisations promoting reduction may also ostracise certain groups and communities by ignoring these issues or using them as tools in campaign messaging (Wrenn 2016; Harper 2010; Ko and Ko 2017; Singer 2016; Broad 2013). For instance, Singer describes campaigns using stereotypical masculine notions to appeal to men, stating that 'productive alternatives include messages appealing to variability across masculinities, to gender-neutrality and androgyny' (2016, p.15). Associations with such campaigns and messaging may contribute to feelings that reduction is only for privileged individuals or that certain communities would not be welcome within the movement. Though outside of the scope of this research project, it would be extremely valuable for future research to identify further strategies to make reduction and veg*n communities more welcoming and inclusive of those from minority sociodemographic backgrounds.

This research project is the first to look at a large sample of participants from different reduction and vegan campaigns and, as such, the lack of diversity identified is an important finding for those within the movement and researchers seeking to understand strategies for reduction promotion. The demographic characteristics identified can also be used by those seeking to promote greater representation within segments of the animal protection, environmental, reduction and/or vegan movements.

9.3 Social elements are key but unaddressed

While reduction journeys are personal decisions and experiences, they exist within a broader social context. One does not simply consume food but consumes culture and, in doing so, positions oneself in the social world. According to Douglas: 'The mind is tied hand and foot, so to speak, bound by the socially generated categories of culture. No other alternative view of reality seems possible. … Anomaly is abhorrent' (2007a, p.153). The reducer and, in particular, the abstainer, exist in direct opposition to the culturally accepted and thus invisible norm of carnism (Joy 2011). As such, the personal decision to reduce can have wider implications on one's social and personal life. Social elements are likely to be key to the reduction process, though generally unaddressed by campaigns (see Chapter 4). They repeatedly emerged as significant barriers within focus group discussions and as impacting a variety of other components of one's dietary choices. As illustrated by Figure 9.1 (below), social elements commonly emerged as key within focus group discussions.

Figure 9.1 Sample focus group ranking of barriers



In this example, cost was identified as a non-barrier, personal health as neutral and social (other people) and awareness were classified as the most significant barriers.

Reduction campaigns face the challenging task of changing behaviour at an individual level when daily dietary decisions are inherently tied to social elements. Campaigns tended to primarily focus on psychological capabilities and reflective motivation, with allusions to social supports and community formation infrequent (Chapter 4). While some barriers within the Behaviour Change Wheel framework can be addressed through joint strategies, interventions to raise social

opportunities are almost entirely distinct from those addressing psychological capabilities or reflective motivation (see Appendix 3) (Michie, Atkins and West 2014, p.116). The GVC did provide some occasions for community formation or social support by offering participants a group trip to an animal sanctuary and the chance to engage with a GVC Facebook group (4.2). These features could account for why, compared to participants in other campaigns, those in the GVC were less likely to report an increase in social barriers over time.

This reality of campaigns targeting a consumer's behaviour – that they focus exclusively on the *individual* without addressing the wider context within which the consumer operates – is a key limiting factor in their potential effectiveness. Campaigns may be able to increase their effectiveness if they incorporate social elements, potentially through working to shift dietary norms within specific areas, by supporting the creation of supportive veg*n communities or through initiating political change.

As discussed in 8.6, a lack of social support in conjunction with negative reactions from friends and family was commonly cited as a cause of distress and a key barrier in maintaining reduction goals, particularly for abstainers. Unsupportive or hostile responses to reduction commitments and practices are likely to reflect unconscious cultural norms that reinforce the consumption of meat and other AFPs as natural and that interpret lifestyles that reject normative omnivorousness as abnormal. When a veg*n's presence serves as a reminder of dietary ethics, underlying cognitive dissonance stemming from the meat paradox can lead to defensiveness for struggling consumers who remain conflicted about their continuing omnivorous habits (Onwezen and van der Weele 2016; Bastian and Loughnan 2017). The result can be social distancing for veg*ns, who may in turn find solidarity and support in others with similar ideals.

Unlike abstainers, meat reducers may be able to more easily shift between situations with varying dietary norms by continuing to consume meat in omnivorous settings, such as meat reducer BL3 who had 'the meat sweats' after a relative's wedding where 'the food [was] basically a meat feast'. Those no longer continuing to reduce may, however, have less access to veg*n norms and feel more concerned about social impacts, while fully situated in socially omnivorous settings. Apart

from non-reducers, vegans – who may be the most likely to receive negative responses to their dietary choices – had the greatest increase in feelings that meat reduction would affect their social life.

Dietary acts are repeated multiple times a day, often in social contexts. Decisions to consume or not consume meat can reflect underlying carnistic defences and components of one's identity (Carfora, Caso and Conner 2017; Monteiro *et al.* 2017). It can also signal membership in certain social groups or be a mark of social distinction (Rogers 2004; Bastian and Loughnan 2017). With meat consumption (particularly that of red meat) a culturally esteemed act (Rogers 2004; Fiddes 1991), veganism can be seen as too far removed from culturally accepted dietary norms. Focus group participants universally agreed that veganism was a highly stigmatised category, a diet that is seen to be 'so weird and out there' (near-vegan BN4). Previous research has briefly touched upon some of the stigmas identified through this research (see 8.3), including perceptions of vegans as 'picky eaters' (Joy 2017), 'hippies' (Greenebaum 2012), 'awkward' (Twine 2014), 'privileged' (Greenebaum 2017) or 'extreme' (Twine 2014). While discussion participants agreed that veganism is a highly stigmatised category, there was less of a consensus on vegetarian stigmatisation.

The presence of a veg*n who has embraced conscious consumption may disrupt and undermine a reliance on unconscious dietary practices. Thus, the non-reducer may feel guilt when seeing in the abstainer their own potential to become a conscious consumer. The 'vegan killjoy' can therefore be viewed as a negative element during social eating situations, a source of discomfort and 'awkwardness' (Twine 2014).

In the presence of negative emotions, vegans may feel they have to 'perform' veganism to minimise discomfort, highlight the positives of their dietary choices and curtail potential conflict (Twine 2014). Vegan MA5 described consciously shifting her responses in order to avoid potentially stereotypical behaviour:

> There is that stereotype of the vegan being really fussy and when I first became vegan I was a bit like that, because when I first went to a restaurant and I was like, "Oh what can you do that's vegan?" and they were like, "Oh, you can have the salad", I'd be like, "WHAT?" and kept getting annoyed, but now I've become really conscious of that, and I'll try to be the most helpful person: "Oh, I'll just have a plate of vegetables. Whatever you can do me I'll be happy

> with". Because I think it's really important to show restaurants and places that we're not awkward, this is just our choice, and we're happy for what you can give us. Anything that they can do that's going out of their way, that's great.

The individual consumer's actions and dietary choices thus become constrained by the opinions of those around her. She feels she cannot state her preferences or disappointment in the food options offered and instead enacts pleasure and joy at receiving substandard food. The presence of a veg*n is therefore constructed as burdensome when meat-based meals are the social norm, such that those meeting her need for vegan food are 'going out of their way' in rejecting normative omnivorous options.

As Twine (2014) found in his interviews with British vegans, they may feel pressure to perform not only veganism but happiness itself. Avoiding conflict and minimising the potential for others to feel they are 'mak[ing] a fuss' (LO7) could mean veg*ns are not able to be true to their own emotions and reactions in uncomfortable or confrontational situations. This could, in turn, contribute to social distancing and, potentially, feelings of isolation from omnivorous friends and family.

A desire to avoid conflict could also inhibit a willingness to openly discuss one's veg*n identity. Vegan MA3 explained: 'Sometimes you'll happily say [that you're vegan] and be quite proud of it. … I think you have to pick up on the vibe, if they're gonna be defensive or not about it'. Vegan BN6 described how after struggling in an omnivorous household her university was an environment where veganism was 'so normalised'. As she explained, one's experience of veg*nism can depend on 'who you're surrounded with'.

Concerns about social pressure and letting down those who share similar values may also lead to a hesitancy to identify as veg*n or pescatarian. Meat reducer and former vegetarian BL3 described how his experiences after he stopped being a vegetarian made him reluctant to abstain in the future: 'If I give in, I'm gonna face everyone, say, "Actually, I eat meat again now", which I did thirty odd years ago. Yeah, you've gotta just take it as it is, you know, keep your options open'. The fear of eventually abandoning a shared commitment could, in this context, inhibit making an initial pledge.

Where one does commit to abstain from particular foods, seeing those one cares about and respects continuing to engage in behaviour now construed as immoral could be a struggle and a source of further social distancing (Twine 2014). Vegan MA5 described her frustrations with a close family member continuing to consume meat: 'It's the thinking of it as just steak on her plate, with pepper sauce, not as part of an animal, and she can do that disconnect'. The presentation of AFPs can further this disconnect and hide the animal source, while making it easier for consumers to unreflexively consume these foods (Kunst and Hohle 2016), as pescatarian LO8 expressed: 'I think there is a definite disconnect between what they see all nicely wrapped up in the supermarket and the fact that there was once a living animal with fur'.

For those who have made this connection – where a meal can embody an animal's pain and suffering (see 9.4) – it can be difficult to witness others consuming such foods. The perceived and (potential) discomfort veg*ns feel with the consumption of non-veg*n foods may further contribute to veg*n social distancing. Assumed mealtime norms can suddenly be questioned or even threatened by those who may partially or fully reject AFP consumption as natural, normal and necessary (Joy 2011). Resultantly, as Bastian and Loughnan (2017) argue, in such experiences omnivores may be confronted with a negative sense of self through the conflict between their dietary choices and feelings about animal suffering (i.e. the meat paradox). Non-veg*ns can therefore feel they must justify their dietary decisions to vegans through what Twine (2014) refers to as the 'omnivore's defensiveness'. This includes the use of humour and the labelling of vegan practices as 'extreme' to defend one's continued omnivorous habits.

A variety of factors can contribute to feelings of isolation and social distancing for the new reducer, while community-building can be a crucial source of support in achieving one's planned dietary changes. Engaging in collective actions toward a common purpose can enhance one's commitment to behaving compassionately and contribute to this becoming a central component of one's identity (Han 2012). The creation of values-based relationships through collective action can strengthen individuals' commitment to a cause, particularly at times when they might be feeling less motivated (Han 2012). Collective experiences can help connect an individual's goals to the

common good and, in doing so, may support the maintenance of reduction practices. MA4 described her participation in joint actions for a common cause as pivotal in her decision to become vegan: 'It's different when you're surrounded by people that have these opinions. Suddenly, it's not okay anymore. Like, when you're surrounded by people who eat meat and dairy you just kind of push it to the side. You know it's bad, but because everyone else does it, it's okay'. Social pressure and support could also be important in preventing and moving past dietary slip ups, such as vegan BN6 explaining her unwillingness to purchase dairy milk for non-vegan friends and family: 'I have a reputation to uphold. I can't be seen holding cow's milk'. A collective identity may, ultimately, be stronger than an individual one.

The opportunities for support and community-building provided by campaigns can be an important avenue for managing or overcoming feelings of isolation, as well as negative responses from friends or family. Long-term vegan BL6 described signing up to the 3DV and other vegan campaigns to be 'part of this nice vegan community' and try to encourage others to participate with her. Through community-building and motivation-raising, campaigns may play a vital role for some individuals' decisions to sustainably change their diets and in their ability to do so. Meat reducer LO1 explained: 'I'm not sure if we would have changed without [the Let's Eat Better Pledge], because we knew that there were campaigns and they were really supportive'.

Another area of support could come from one's local community, with participants describing an urban environment as helpful for meeting other veg*ns and in creating positive associations with such individuals and lifestyles. Pescatarian and planned vegan BL4 described her transition as 'very easy, and in the big city, and in a more progressive city, it's easier of course'. Conversely, recent vegetarian, planned vegan and mother BL2 lived in a rural setting where she did not know any other veg*ns or pescatarians. Her transition was slowed by a lack of knowledge, particularly around vegan sources of B12 vitamins and concerns about the healthfulness of meat-free diets for her children, resulting in the continued consumption of non-vegan foods she prepared for them. Vegan VI2 also described not knowing any other veg*ns in her rural town and feeling like the 'awkward vegan' in social settings. Meanwhile, her sister (VI1) lived in an urban environment

and actively participated in local vegan groups. She described community membership and support as a key source of self-assurance: 'I've stopped apologising and … I'm a bit more confident in myself to say, "I'm vegan, what can you do?"' (VI1). Pride in one's identity could be supported by others with similar perspectives and dietary identities.

Changes in one's social environment can have positive (or negative) impacts on one's dietary norms, feelings of isolation or support and access to essential knowledge (i.e. how to find and prepare veg*n food). However, being around those who are also following a similar diet may not be essential for a sustained veg*n transition. One additional source of support could come from 'non-practicing practitioners' (Twine 2014). By consuming or preparing shared foods and potentially adopting some veg*n habits in their own lifestyles, sympathetic friends and family members could reinforce the normalisation of vegan dietary practices and support transitioners in feeling less isolated. Thus, a single vegan transition may lead to dietary changes in other individuals as dynamic norms shift (Sparkman and Walton 2017).

Over time, family and friends may adopt more veg*n habits and become increasingly sympathetic to a veg*n lifestyle. Vegan MA3 described an improvement in her interactions with friends and family: 'I think after the initial kind of debate, everyone has been really supportive. They kind of got into it and they even go out of their way to buy me a little vegan chocolate basket for Christmas and everything like that'. Some also described friends and family who had subsequently adopted a veg*n diet or begun reducing themselves, such as VI1, whose parents were planning a meat-free month. BL6 described how since becoming vegan four years prior, 'most of my friends have either turned vegetarian or vegan', even though, she explained, 'I don't push it on them'.

Social support can be particularly helpful in the formation and support of dietary norms, as habits are formed in social contexts where the consumption of AFPs is normalised (Bastian and Loughnan 2017)**.** For instance, while MA5 previously thought a vegan diet was 'radical' and something her family would not support, by meeting and forming a supportive community with others interested in or pursuing a vegan diet, she came to embrace the lifestyle. Those without access to such communities may struggle more to form new habits. However, they could potentially

find new sources of support through social media and other on-line resources. Participants were eager to share their favourite websites, vloggers, Facebook groups and blogs with each other and many described these sources as extremely helpful and influential in their dietary decisions. For instance, after becoming vegan as a teenager and continuing to live in an omnivorous household, BN6 explained: 'One thing that really helped me was social media. I was a big Twitter, Instagram kind of person already and I kind of found this world of veganism on Instagram and it's massive. … If I was stuck for something to eat, I'll literally just scroll and be like, "I'm gonna make that for dinner"'.

Social support and being in the company of others who are questioning normative consumption practices may also strengthen one's dietary identity and result in a willingness to decrease further. Planned meat reducers, who were more likely to have veg*n or pescatarian friends at the campaign start (65.5%) than non-reducers (56.0%) were also more likely to increase their willingness to identify as veg*n after six months (Δ=0.31, CI 0.08 to 0.54) than non-reducers (Δ=0). As previously stated, they also had the lowest average increase to perceptions that meat reduction would impact their social life: Δ=-0.20 for planned vegans, -0.13 for vegetarians, -0.16 for pescatarians, -0.10 for meat reducers and -0.30 for non-reducers.

Exposure to the counter-normative consumption settings formed and embraced by veg*n communities may enable meat reducers to more readily adopt new dietary norms. Such communities may provide access to vital information and support systems. These settings may also serve to support the creation and strengthening of new dietary norms, including through the practice of creating and enjoying new types of foods. Abstainers, in particular, may have 'used foods to communicate with non-vegan friends and family about veganism, to draw omnivores into the material, sensual experience of vegan food' (Twine 2018, p.177). For those not consuming meat, particularly vegans, community formation may be extremely important when facing negative stereotyping and responses from friends and family. However, for this group in particular, social distancing, in conjunction with newly formed communities, could further contribute to isolation from non-vegans.

9.4 Achieving a vegan mindshift through a concern for protecting animals

The formation of new dietary norms can distance the reducer not only from omnivorous individuals but from pre-formulated routines of habituated consumption. By re-thinking and consciously consuming, veg*ns may be more likely to connect meat with its animal origins (Kenyon and Barker 1998). Conscious consumption can form through re-situating the animal source within food products previously unconsciously consumed. Newfound awareness, coupled with a commitment to completely abstain from the consumption of meat or AFPs, can serve as tools for constructing animal-derived foods as inedible or embodied representations of suffering and death. The act and decision to consume becomes a reflection on one's ethical values: 'Why would I want to change my beliefs for a piece of cake?' (vegan VI2). The formation of 'perceptions of moral relevance' for AFPs and their animal sources can be hindered by the 'highly routinized' nature of consumption, such that 'individuals often face a motivational conflict when the damage of their behavio[u]r becomes salient' (Graça, Calheiros and Oliveira 2016, p.362). Reflections within a social setting where previously unrecognised normative practices are addressed and called into question may support the creation of a new way of eating that recognises the hidden animal source.

Many vegan participants, in particular, expressed having reached a new view or understanding of AFPs from which there was no return, a *mindshift*:

> There's no going back, ever. Once you've done it, you just cannot, can you? Because I cannot even look at an egg or at milk now without thinking what it is. – LO3
>
> The taste just wasn't enough to hold it up anymore. – MA5
>
> I think once you connect the dots, you can't undo it. And I wouldn't want to; I wouldn't want to go back to not caring. – VI2
>
> Once you've seen it, you can't un-see it. – LO3
>
> I think that if you're committed to [a vegan diet] because of other things then you kind of accept all [the barriers]. – LO7
>
> You can't see the meat the same, I think, after you see some videos. – BL5
>
> [Being vegan] was quite hard at the beginning but because I had the ethics were what was behind my decision, I couldn't see myself going back, so I was like, "I'm just gonna have to make the most [of it]". – BN6
>
> Once I made that connection, I couldn't unmake it. – VI1

The process of achieving a mindshift could be gradual, with meat reducer LO5 describing how her daughter's veganism had 'changed my way of thinking. ... I'm in the process of changing'. It could also be sudden, triggered by a 'conversion experience', as with overnight vegans BN6 and BN9 (Beardsworth and Keil 1992). However, the latter was much less common (see 6.1 and 9.5).

The achievement of a total shift in perspective regarding AFPs and their edibility is unlikely to be achieved through a single exposure or experience, nor is the adoption of a new dietary identity (Chuck, Fernandes and Hyers 2016). Social and cultural norms, a lack of physical and social opportunities and the need to acquire a variety of psychological capabilities can impede even those highly motivated and aware from changing their dietary habits. Meat reducer MA2 demonstrated the potential to feel that one's dietary behaviour is unethical, even while continuing to engage in it, stating:

> [Animals] still feel pain. I mean, to me, they feel pain and they feel fear, and to me that is the thing that makes them no different at all. And if you wouldn't do it to a child or you wouldn't do it to a dog or cat, why should you do it to any other animal? You know, to me that's the bottom line and I don't know how anybody can step over that line. Says the person who does eat meat occasionally.

The inherent contradiction in this sentiment – that a behaviour crosses an ethical 'line' that one, nonetheless, continues to engage in – hints at the complex psychological components and social and cultural norms underlying the consumption of animal flesh and secretions. Ultimately, 'meat consumption is not simply a gustatory behaviour, but also an ideological one' (Monteiro *et al.* 2017, p.51).

When a shift in perspective has not been fully internalised, as appears to be the case with MA2, reducers may slip back into previous, omnivorous habits. Goals are a key component of any behaviour change model (Michie *et al.* 2005; Michie *et al.* 2014) and while meat reduction can present a dietary goal, this may need to be clarified, as meat reducers were more likely to consume the same or more meat than to consume less or none after six months (6.3.1). For some, particularly those who may not currently be interested in campaigns that include a veg*n goal (e.g. BN5, BL1, BL3 and LO1), a clear meat reduction goal may be most effective. Such goals could help overcome negative stigmas and create positive associations around veg*n foods and identities. This may then

increase the potential for participants to later pursue a veg*n or pescatarian goal through a stepped approach with increasing goals.

LEB participant BL1 emerged as a reducer who would currently be unwilling to participate in a campaign with a veg*n or pescatarian goal. She described her meat reduction as 'not a conscious decision', simply 'find[ing] I want meat less now' (BL1). In addition to disagreeing with ethical arguments for eliminating certain or all AFPs from one's diet presented by other participants, she stated: 'I don't think total vegetarianism is the right direction'. Instead, she repeatedly emphasised the importance of purchasing higher welfare and/or local AFPs: 'Choosing good quality meat, … I don't have a problem with that'. Prioritising animal welfare improvements over reduction or elimination, she described multiple experiences with vegetarian family members and colleagues in negative terms (see 9.3).

BL1's negative opinion of abstention diets (i.e. pescatarianism and veg*nism) is a perspective that may have been underrepresented within focus group participants and perhaps within campaign populations. Such individuals are an important group of current and potential reducers who may, in spite of a high level of awareness, be unwilling to pursue a veg*n diet. BL1 may be understood as 'a disengaged meat-eater' who regularly substitutes meat for fish or other alternatives, but remains relatively unmotivated to reduce (Dagevos and Voordouw 2013). For this particular group, the key to further (or any) reduction may arise through an increase in their motivation. However, amongst meat reducers in focus groups a more common perspective was what may be categorised as that of a 'conscious flexitarian', who is driven by specific motivations to actively reduce their consumption (Dagevos and Voordouw 2013). While reducers with lower motivation levels may not be receptive to a veg*n goal, conscious reducers may be more open to a stepped approach leading toward increased reductions and eliminations or a clear veg*n objective, such as that described by Animal Equality's 'Make a Difference' leaflet (see 4.3).

Particularly for conscious flexitarians, spending time as a meat reducer may make individuals more likely to then consider a veg*n or pescatarian goal (see 9.3). The act of consciously consuming could, ultimately, lead to occasionally consumed foods eventually becoming categorised

as inedible through a re-connection with its animal source. Consciously eating less meat may be the first step for many in the creation of not only a new way of eating but a new perspective on the food items themselves.

Through a total shift in perspective (i.e. *mindshift*) animal-derived foods are re-categorised as inedible, leading to a commitment to a fully vegan lifestyle. For some, this may occur through feeling personally responsible to specific animals one has encountered. For instance, after witnessing a goat being slaughtered, LO1 stopped consuming goat meat but continued to eat other types of flesh, describing her behaviour as 'a disconnection'. Meat reducer LO4 also characterised her continued consumption of AFPs as 'a disconnect', conveying how she had previously followed a vegetarian diet for several years after witnessing a truckload of cows taken to a slaughterhouse.

Initial considerations of animal suffering were most commonly described for mammalian companion or farm animals (i.e. dogs, cats, pigs, goats or cows). Once reducers begin to connect meat consumption with living animals through a recognition of the 'meat paradox' (Korzen and Lassen 2010), they may be open to and begin to seek out information about the external impacts of other types of AFPs. This could account for instances where certain types of dietary changes were likely to lead to further reductions. For instance, instead of increasingly relying on dairy and eggs as substitutes for meat and fish, vegetarians consumed fewer of these foods than meat eaters and pescatarians (6.3.3). This suggests that they are using plant-based foods as substitutes for animal-based components at higher rates than those still relying on meat and/or fish and could indicate a conscious reduction of these foods. This could also suggest that the act of abstaining, in particular, is more likely to lead to additional dietary changes.

Vegan participants generally described having overcome the disconnect associated with the meat paradox. For instance, vegan MA3 described her frustrations with non-vegans:

> I think when you go vegan … for me, I saw how awful it was with how they're slaughtered, with the veggie side and the vegan side, and then how the dairy and the chicks and all that from the egg industry. It's so upsetting and then you get annoyed with people that they're not doing the same, even though you're trying to tell them, but then I think: Well, no, 'cause I was in their position.

The vegan mindshift for those motivated by animal protection may inhibit recollecting one's previously held omnivorous beliefs and opinions and, in doing so, serve to further disconnect oneself from the perspective of meat eaters (9.3). When food items may come to represent suffering and death, witnessing their consumption can be a disturbing or even painful experience. By connecting with the animal source vegans may become disconnected from their previous omnivorous self and, in doing so, with omnivorous culture and individuals.

This potential mindshift through a commitment to animal protection appears to be the most important motivator and cause of negative emotions and feelings of responsibility amongst this sample, particularly for those pursuing a veg*n or pescatarian diet (see 7.3). While these findings emerged within a specific population (i.e. the participants of meat reduction and vegan campaigns), they depict the potential power this motivator may have in achieving sustainable reductions.

Despite the majority of respondents having participated in an environmental campaign, animal welfare was the most popular motivator and was most strongly connected to barrier perceptions. In terms of promoting and successfully achieving dietary behavioural change, environmental impacts suffer from what Gardiner has coined 'the perfect moral storm', whereby the 'dispersion of causes and effects', lack of personal accountability and 'fragmentation of agency' abstract environmental consequences from consumable items (2011, p.24). The connection between a steak and the environmental degradation inherent in its production may remain immaterial and lack in a single or clear victim. Conversely, a steak can be more clearly linked to the flesh of a once-living animal and, perhaps, to a particular cow or animal one has seen or known.

As discussed in 2.4, prior research has generally supported the particularly impactful nature of animal protection as a reduction motivator (Stoll-Kleemann and Schmidt 2016; Janssen *et al.* 2016; De Backer *et al.* 2014). Taft describes animal protection as advocates' 'strongest and most defensible argument' (2016, p.83). The findings presented in this dissertation build on this work through theorising that a commitment to animal protection may result in a vegan mindshift, such

as has been identified amongst this sample. This change in perspective may be key for many consumers' abilities to successfully meet or exceed initial reduction goals.

To change behaviour, participants first need to be motivated to do so. With 85.4% of participants agreeing that reducing meat consumption is beneficial for animal welfare and 70.6% acknowledging the same for dairy and eggs, this group was predominantly aware of the negative consequences of AFP consumption on animals (though less so for dairy and eggs) and motivated by this knowledge (85.0% of participants as a primary and 11.6% as a secondary motivator) to change their behaviour. Nearly all (89.2%) were also aware of the benefits of meat reduction on the environment and, again, nearly all were motivated by this knowledge (80.8% as a primary and 14.9% as a secondary motivator). This separates this sample from the wider UK population, who are generally not aware of these potential benefits and are more likely to be uncertain or disagree about AFP consumption's negative impacts on the environment or animal welfare (Lee and Simpson 2016; de Boer, de Witt and Aiking 2016; Wellesley, Happer and Froggatt 2015; Tobler, Visschers and Siegrist 2011; Pohjolainen *et al.* 2016; Corrin and Papadopoulos 2017).

While awareness in the group was generally higher than for the broader public, not all participants may have actively sought out such information. Some reducers may continue to engage in strategic ignorance – the experiencing of negative emotions while remaining willing to ignore information and feelings of personal responsibility (Onwezen and van der Weele 2016). For this group strategies may need to be developed to raise awareness and feelings of responsibility. Nonetheless, this research project's sample may largely be composed of those who are either struggling or coping with the cognitive dissonance commonly associated with consuming these foods (Graça, Calheiros and Oliveira 2016). Thus, they may be feeling negative emotions about AFP's impacts and unwilling to ignore this information, yet unsure of their own personal responsibility (the struggling group) or they may seek to change their dietary behaviour to combat feelings of responsibility (the coping group). Without the re-centring of animals within daily consumption individuals may have difficulties fully committing to their planned dietary changes.

Struggling participants were evident within focus groups, with many individuals expressing feelings of guilt at seeing animals suffering and yet not changing their dietary behaviour. For instance, BL6, a vegan of four years, had experienced a previous failed transition, while, as discussed in 8.3, one meat reducer described 'g[etting] into [eating meat] again, slightly, which wasn't great. Wish we hadn't' (LO1). While a successful transition could be a mechanism to alleviate guilt-inducing cognitive dissonance, failing to achieve one's reduction goals could be a source of anxiety or disappointment (6.1). Thus, an unsuccessful transition could potentially have a negative impact on one's desire to change in the future, as with ex-vegetarian BL3.

Prioritisation and the feeling that one will maintain their diet no matter what may be helpful in continuing to reduce and in reducing further. The feeling that reducers could and would follow a veg*n diet no matter the situation or obstacles prevailed for many who felt that the ethical underpinnings of their dietary decisions were too strong to be discounted: 'I think that if you're committed to them because of other things, then you kind of accept all of that stuff' (vegan LO7).

Where one is fully committed to a veg*n diet, old habits may be abandoned and the total maintenance of such a diet becomes a priority. Depending on the situation, meat reducers could increase their consumption when there were no meat-free options, while others maintained a more flexible dietary attitude. For instance, near-vegans may have maintained some familiar habits to avoid a feeling of sacrifice, particularly when dining out or in a hurry (see 6.1, 8.5 and 9.3). Those still in transition or who have not yet achieved an attitude of sustaining one's diet at any cost as is encompassed by the vegan mindshift may maintain specific exceptions, as with near-vegan BN3: 'If we're out and there's nothing there vegan that I like, we'll just go back to vegetarian'.

For those who have achieved a vegan mindshift, consuming AFPs may no longer be seen as an option, as with LO7: 'When you're out with other people, … you can be put in a situation where you don't really have very many options and you just have to go hungry'. Others also expressed a willingness to eat meals that to others may have been deemed inadequate, such as toast (vegan LO3) or fruit (vegan VI3) (8.4). The recognition of meat as the physical embodiment of the suffering and death of a once-living animal may inhibit any thoughts of consuming flesh. For some, this

perspective may be readily adopted while, for others, repeated reminders of this connection or the practicing of veg*n habits may help them to form.

However, not all may achieve this change in perspective or feel willing to make such sacrifices. While the mindshift identified within this research sample appears to be a particularly impactful mechanism in achieving a fully vegan diet, other mechanisms are likely to be necessary for individuals for whom animal protection is not a significant enough motivating factor. For such individuals, other strategies may be needed and be more impactful in promoting sustained reductions.

9.5 Diversified campaigns to address an individualised process

The decision to reduce and the reduction process can vary widely between individuals. For some, it may be 'all about the animals' (vegan VI1), 'global environmental issues' (pescatarian BL4) or a desire to be healthier (e.g. meat reducer LO1). While a commitment to animal protection appears to be linked to the greatest levels of reduction and reduction successes for most of the sample population, for some that may not be the case. In addition, varied social and physical contexts can have a significant impact on barrier perceptions and motivating factors.

Signing up to and participating in a specific reduction or veg*n campaign can serve a variety of significant and non-significant roles in the process of deciding to reduce and the reduction process. While some viewed the campaign as a tool or source of information in achieving a desired goal, others described campaigns as the initial motivator or something fun to try out. By better understanding the motivations and needs of their participants, campaigns may be able to maximise effectiveness. While some may be most affected by frequent reminders of the connection between animals and AFPs, others may most need help with psychological capabilities.

For some, signing up to a campaign may not be particularly significant in the reduction process. A few focus group participants struggled to remember the campaign they participated in (e.g. BL3 and LO3) and signing up could be more symbolic, perhaps as an indication of a desire to

change or to show support for an organisation. This could potentially be linked to the small minority of participants whose main motivation(s) did not match the campaign's content (e.g. those primarily motivated by animal welfare participating in an environmental campaign) (see 7.3 and 7.4).

For those who do not plan to make a significant change following the campaign, it may simply be something fun to try out or a test of one's willpower. MA5, who had participated in the GVC month through a university group, described it as 'a challenge': 'I thought it was a bit radical, so I never wanted to stay vegan. I thought, I'll just try it'. LO3, a long-time vegetarian, described signing up to the GVC as 'a bit of a whim. … I just was a bit bored and thought, "No, I can do this"'. For both MA5 and LO3 this resulted in a lasting dietary change, suggesting that such individuals may still be open to the messaging and content of campaigns.

Others may participate in campaigns not to change their own habits but to influence others. Many described sharing information on social media and raising issues around AFP consumption in conversations. After initially participating in campaigns for the community element, vegan BL6 described now using the campaigns as a way to encourage others: 'Now I do it so I can join in and I can share on social media and I'm like, "Guys, look at this! Everybody join in!" … Last year five people did it with me'.

Campaigns may also serve a more practical purpose in an individual's attempt to change their diet, as a tool or a step toward a particular goal. For instance, participation could help those who have a desire to change their habits, but 'don't know where to even begin' (meat reducer LO1). MA2 used annual vegan and vegetarian months as mechanisms to reduce her total annual consumption, even while continuing to eat AFPs for the remainder of the year.

For others with a clear goal in mind, the campaigns may be a source of essential information to assist in their transition. The 3DV, in particular, seemed to serve this role for many of its participants, with the majority planning to be vegan in six months (68.1%, compared to 21.9% of GVC and 31.6% of GVUC participants). The campaign's focus is not on specific pro-social motivators

but rather on pro-self elements, showcasing how to create and find tasty vegan food, primarily through their provision of four daily recipes. A staff member explained: 'By providing these recipes on a daily basis … we're hoping to convert people or at least open people's minds in a short period of time to veganism' (Viva1). One participant in the campaign described signing up for 'a bit of information and maybe a bit of motivation, … just to sort of remind me why' (VI2).

Others may feel a deeper connection to a campaign, as their source of initial motivation, instigating a new perspective or a desire to change one's lifestyle. iAnimal, in particular, provided an opportunity for an initial exposure to the treatment of animals raised for food in modern intensive systems. This could account for why several iAnimal focus group participants were particularly passionate about the campaign, which could be a source of new information through a more immersive medium: 'I think that's why stuff like iAnimal works so well, because once people watch it, they can't un-see it. They can't unknow what happens' (vegan MA4).

Dietary goals and habits can be instrumental in the decision to participate in a certain campaign. Nonetheless, a significant amount of variation within campaign samples is likely to indicate a need for a variety of different types of campaigns. For instance, while some in vegan campaigns were already consuming a vegan diet (5.3%), two times more were vegetarians planning to become vegan (11.5%) and six times more were meat eaters with no plans to become vegan in the next six months (30.5%). Ultimately, just over one-third of participants in vegan campaigns stated a plan to follow a vegan diet, suggesting that most participants may not initially perceive all of the dietary changes occurring during the campaign as permanent. However, by participating in campaigns, they may then be more likely to consider a veg*n diet (8.3) and some may view a vegan campaign as an opportunity to try a veg*n lifestyle. Some may ultimately continue with a vegan diet afterwards, even if that is not what they initially planned, as with both MA5 and LO3.

As discussed in 5.4, some participants in reduction campaigns may see veg*nism as an eventual (more long term) goal. For instance, during focus group discussions three of ten meat reducers expressed a desire to follow a fully vegan diet in the future: 'Ideally, I'd like to move toward a vegan lifestyle, but I just feel like I'm in this sort of slow process' (meat reducer MA1). Many

participants may be interested in following such a lifestyle but feel they are unable to do so or are scared of making a permanent change that may seem drastic, particularly one that may be associated with deprivation.

Planned shifts generally involved maintaining current types of reductions or the achievement of further abstention for those already abstaining. For instance, while 22.2% of current vegetarians planned to pursue a vegan diet, only 4.3% of meat reducers and 1.1% of non-reducers indicated the same. Over-night transitions to a veg*n diet were uncommon (3.3% of meat eaters planned a vegan diet and 9.1% of planned vegans in focus groups had achieved such a transition). However, meat reducers were more open to a veg*n or pescatarian diet after six months than at the campaign start and a period of reduction may assist in shifting perspectives and habits. This again supports the use of a stepped approach with increasing goals.

Reducing the consumption of foods that may serve as an integral part of one's identity (Lewis and Potter 2011), and as mechanisms for communication (Douglas 2007a; Douglas and Isherwood 1996) may allow one to maintain a sense of self in a way that individuals could fear losing when abstaining. As a series of increasing reduction and/or abstention goals may support the formation of sustained dietary changes, the formation of a new dietary identity is likely to be one that occurs gradually. Specifically, research has found that politicised identities (including veg*nism) are generally formed through a series of encounters that may include a variety of different sources of new information (Chuck, Fernandes and Hyers 2016). The initial decisions to abstain may be the most difficult component of a shift toward a fully vegan diet, which could be best facilitated by a vegan mindshift or gradual, increased reductions and abstentions. One of the primary reported planned shifts was vegetarians aiming to become vegan, where the previous exclusion of high status, core food elements may make it easier to abstain further.

While reduction may generally occur gradually, this may pose challenges to the achievement of effective dietary change (see 6.3.1). After six months, most (53.1%) meat reducers were not consuming less (or no) meat (6.3.1). When including fish, this proportion grew to 55.8%. It may be that many meat reducers were using white meat and/or fish as replacements for red

meat, as 64.1% successfully reduced their red meat consumption. Red meat consumption rates were, in fact, the only clear dietary distinction between current meat reducers and non-reducers.

Red meat reducers – those who plan to reduce their red meat consumption without also planning to decrease that of white meat or fish – were even less likely to decrease or not consume meat (35.6%) or meat and fish (39.3%). In addition, more red meat reducers were consuming more or the same amount of white meat (58.1%) than those who were eating less or none. This group may be most reliant on white meat as a substitute for red meat, while pescatarians ate the most fish and may be the most likely to rely on it as a replacement. Campaigns may increase their effectiveness by providing targeted information to red meat reducers, focused on increasing their motivation to reduce their white meat and fish consumption and helping them understand that a meal does not require meat. This group may also be more likely to use meat substitutes and information about plant-based products that mimic the taste and texture of meat could be particularly helpful. However, as the use of substitutes may inhibit the development of new eating practices and conceptions of a meatless or vegan meal, targeted information could develop over time to support the formation of new habits and eating practices.

An understanding of the reduction process and common trends within particular groups of reducers may help campaigns and researchers to prevent the increased consumption of animal-based substitutes. Fish consumption, in particular, was commonly viewed as innocuous. While the abstention from fish generally followed that of red and white meat for veg*ns, fish may be commonly considered a component of a vegetarian diet (Mulle *et al.* 2017). As discussed in Chapter 6, two of five self-identified vegetarians in focus groups consumed fish and neither expressed this component as in contradiction to their dietary identity. 21.4% of pescatarians and 24.6% of meat reducers reported eating more servings of fish at six than zero months. Along with eggs and dairy, these foods may be most likely to seem innocuous to reducers. 12.5% of meat eaters also planned to consume more eggs. Campaigns should explicitly provide information about fish and clarify that fish is not a component of a vegetarian diet.

Continuing consumers may, in maintaining familiar meat-centred meal constructs, view meatless meals as less adequate. Individual habits formed through 'ordinary consumption, that which is both 'culturally *common* and socially *taken-for granted*' (emphasis original) (Lai 2001, p.81), may continue to reinforce AFPs' perceived role as normal, necessary and natural (Joy 2011), while veg*n meals continue to be categorised and conceptualised separately. To avoid unfamiliar meal-time constructs, new reducers and meat reducers may substitute red (or white) meat with 'lower status' (e.g. cheese, eggs or fish) AFPs that are still considered 'sufficiently high in the [food status] hierarchy to support a meal being formed around them' (Twigg 1979, p.17).

In their research, Chuck, Fernandes and Hyers describe the process of adopting a politicized dietary identity (e.g. veg*nism) as generally occurring gradually through a 'Series of Encounters'. Thus, just as the reduction hierarchy was an emergent trend, it may be that beginning the process of questioning and recognising one's cognitive dissonance regarding meat or red meat consumption may lead to the questioning of other types of AFP consumption. However, within this sample meat reducers were more likely to not reduce than to do so. It could be that reduction is more likely to be maintained if it leads to abstention, while only 39.6% of planned meat reducers who continued to consume meat could be classified as long-term reducers (see 9.4).

Within this sample, an emphasis was commonly placed on red meat reduction. Red meat's disproportionately high carbon footprint (Berners-Lee 2010) and the increasing recognition of red meat as unhealthful (e.g. World Cancer Research Fund 2018) have made it a common topic of concern in sustainability literature (e.g. Carfora, Caso and Conner 2017). However, the environmental impacts of other types of AFPs are less commonly discussed (e.g. Macdiarmid, Douglas and Campbell 2016), while research demonstrating negative health impacts of their consumption – such as the high level of mercury and other contaminants in fish and seafood (Clement 2012) – is generally less well known. Increased fish consumption, in particular, is still commonly encouraged as healthful (e.g. Cumberledge, Kazer and Plotnek 2015), including UK national guidelines still promoting eating 'at least two portions 2 x 140g of fish a week' (Public Health England 2016, p.5). A meta-review by Farmery *et al.* found that fish and seafood are

generally neglected in sustainable diet literature (2016, p.607). Though egg and fish consumption incur larger carbon footprints than the majority of plant-based foods (Berners-Lee 2010), many researchers have continued to neglect these areas (e.g. Wellesley, Happer and Froggatt 2015), potentially contributing to their status in the reduction hierarchy.

Individual traits and characteristics are likely to impact dietary choices and reduction goals, including the reliance on certain animal-based substitutes and the adoption of veg*n habits. Sociodemographic characteristics are one element that may help in increasing understanding of reducers (Corrin and Papadopoulos 2017), though strategies to target specific groups should ensure the avoidance of reinforcing or pre-supposing generalised or stereotyped perceptions.

The use of varied, targeted strategies may help reach a greater proportion of the population and provide information most relevant to individuals' lifestyles, values and attitudes (Schösler, de Boer and Boersema 2012; Taft 2016; Cumberledge, Kazer and Plotnek 2015). For instance, disengaged meat-eaters who are interested in reduction may need to first increase their motivations and, through exposure and knowledge-building, have opportunities to address their pre-conceptions around veg*n identities, foods and lifestyle choices. Conscious flexitarians may, on the other hand, be more open to veg*n goals or challenges or in taking steps to decrease their consumption (e.g. increasing their number of weekly meat-free days over time). Michie *et al.* (2011; 2015; 2013)'s categorisation of behaviour change techniques is one tool that could be used to match target groups and behaviours with a specific campaign strategy (see Appendix 7).

In particular, this research suggests the potential usefulness of targeted campaigns that incorporate a stepped approach. For those for whom a meatless meal remains an entirely foreign concept, a single meatless or vegan day a week may be an initial starting point. However, limited reduction goals are unlikely to fully support the development of new competencies, materials or meanings in consuming veg*n food (Twine 2017). This research project suggests that, instead, such individuals may increasingly rely on recipes or the use of substitutes that do not match the temporal rhythms of their normative, habitual dietary practices (Southerton 2013). Increasing reduction goals, followed by increasing abstentions may better support the largest sustained dietary changes.

While stricter goals focused on abstentions may be most effective, some may not (yet) be open to a vegan goal. Clear reduction goals may instead be best for such individuals, particularly those who have yet to adopt vegan eating practices. Goals that reflect current habits and encourage greater changes could encourage participants who are meeting their goals to increase their weekly meat=-free or vegan days bi-weekly or each month.

In supporting such transitions, campaigns could provide targeted information that varies dependent upon specific lifestyle factors, such as: a consumer's willingness and ability to cook, whether they like trying new foods, if they currently consume meat, their income, if they have children or dependents and/or how much time they have for food preparation. Campaigns and future research could focus on practice in order to better address the ways individuals can incorporate veg*n eating practices into their daily lives.

The wide variations in reduction journeys (see Chapter 6) and dietary characteristics between individuals suggests that a generalised reduction campaign without a specific target audience is unlikely to be the most effective approach. Taft argues that campaigns 'need multiple messages that target the issue from various directions' (2016, p.70). For some groups, fish consumption may be a key element to address (e.g. many women, highly educated and wealthier individuals), while for others (e.g. disengaged meat eaters) an increase in motivation and positive exposure to veg*nism may be most important. With campaigns saturated with wealthier, white women, it may be important to consider cultural and social mechanisms that impact individuals' relationships with meat and other AFPs. For instance, meat's role as a highly-esteemed source of prestige (Fiddes 1991; Rogers 2004) and masculinity (Adams 1990; Calvert 2014) may decrease the propensity for men and those earning low incomes to participate in reduction campaigns when these unconscious connections are not explicitly addressed (see 8.6). Campaigns, filling a variety of roles for a wide range of individuals, may be able to increase their effectiveness by creating targeted campaigns that incorporate stepped goals to meet individual needs and broader reduction trends.

9.6 A new way of eating

Through the participation in a campaign, individuals may not only change their consumption of AFPs but their perspective on consumption itself. While a mindshift may most readily facilitate this process through the re-categorisation as non-foods, practicing of new styles of eating may support the formation of unconscious habits and, ultimately, a new understanding of the eating process. For meat reducers, the continued consumption of meat seemed to enable a smoother transition from previous dietary habits by allowing the maintenance of familiar, central meat components. They could more easily adapt to omnivorous settings by consuming meat (9.3), while gaining knowledge and skills about veg*n foods and ways of eating.

With most participants engaging in a gradual transition, this approach may allow for the development of new habits without a radical dietary change. Over the six-month period, psychological capabilities had some of the largest gains. These areas of skill (e.g. preparing a veg*n meal) and knowledge (e.g. finding meat-free foods and recipes) formation may have played a central role in the development of automatic motivation and of unconscious veg*n habits. By first decreasing one's consumption of 'high status' foods (particularly red meat) the reducer may be able to maintain familiar meal-time constructs (i.e. meat and two veg) (Twigg 1979).

Thus, for those new to reduction or who are continuing to consume meat, conceptions of a meal may remain largely unchanged from that which is 'highly structured and centres around a single high-status item, like roast beef or chicken … and which is supported by grades of low-status items – the vegetables' (Twigg 1979, p.29). Given such mealtime norms, veg*n meals may lack a familiar structure and thereby be perceived as strange or inadequate: 'chopped up, mixed together, undifferentiated' (Twigg 1979, p.29). This may inhibit changes to the three core components of habit development and maintenance – dispositions, procedures and sequences (Southerton 2013).

The exposure to meat-free foods and new ways of eating could contribute to new conceptions of veg*n foods as sufficient and healthful. However, the continued reliance on pre-formed, omnivorous habits and norms may have inhibited the transition from reflective to reflexive

consumption for many continuing consumers. If veg*n eating occurrences remain dependent upon conscious reflection and planning, unconscious eating may continue to rest upon familiar meat-centric constructs. Continuing consumers had the largest gains in recipe-finding skills and, in focus groups, commonly discussed a reliance on recipes for meal-time preparation. For instance, meat reducer BN2 described her reduction as mainly based on finding recipes for meat-free meals but that she 'found it really difficult to find recipes'. Such occurrences may therefore not fit within one's lifestyle by requiring different procedures and changing the temporal rhythm of one's day (Southerton 2013).

Abstainers, instead, more commonly described developing skills to integrate veg*n habits into their daily lives. Vegan BN6 described how she no longer needed recipes to prepare vegan meals, while near-vegan BL5 described ways that she stayed organised to avoid increasing the time she spends on food preparation (9.6): 'I cook twice a week in batches, so I sometimes freeze stuff and I'm set for the week. … Essentially, it's way less time, 'cause then the rest of the week … you just get it out and you eat it'. Such practices allow for the maintenance of stable practices that lead to habituated routines. Perceptions of taste and taste preferences can also alter the nature of transition. The continued consumption of AFPs – commonly culturally constructed as the tastiest foods – may make less valued plant-based foods seem less appealing. Abstainers may, instead, be motivated to expand their palettes and try new foods after having eliminated others from their diets (Twine 2018).

Addressing the unconscious nature of ordinary consumption is likely to be essential in the formation of new dietary norms through the recognition of social and cultural influences. As Briggs explains, 'although in theory consumers have freedom of choice, macro factors, production culture, as well as social and physical infrastructure have a much higher influence on consumption patterns' (2015, p.118). Consumers tend to be lacking in skills related to veg*n cooking and the preparation of such foods generally requires greater cooking proficiency and effort (Stoll-Kleemann and Schmidt 2016; Tobler, Visschers and Siegrist 2011, p.679). For instance, pescatarian and planned vegan BL4 described being 'not a big fan of cooking' as a 'tricky' component in her family's transition, as she

was ‘the main cook at the moment’. Campaigns and policy makers may be able to support the development of vegan competencies {Formatting Citation} by creating or supporting existing free or low-cost plant-based cooking classes that also include essential nutrition info (e.g. LifeAfterHummus Social Enterprise, see Appendix 6).

Meat reducers and new reducers heavily reliant on recipes and less familiar with veg*n alternatives and available options may find veg*n meals time-consuming and difficult to prepare. Pre-constructed, clear formulas for a ‘proper meal’ (Douglas 1972, p.68) may remain, creating the need for conscious consideration and reflection each time one prepares or purchases a meat-free meal. Each meal may, particularly for meat reducers and new reducers, require the purchasing of a ready-made meal or the following of a specific recipe when a ‘proper meal’ remains thought of as ‘meat and two veg’ (Warde 2000).

Confidence in one’s ability to cook vegan meals appears to be an important distinction between vegans (93.6%) and other dietary groups (54.6% to 66.3%) (see 8.4). Those participating in vegan campaigns were also more likely to increase their cooking skills (Δ=0.71 for GVC, 0.62 for 3DV, 0.20 for LEB and 0.07 for PTC), as were those pursuing a vegan (Δ=0.31), vegetarian (Δ=0.55) or pescatarian (Δ=0.41) diet. This suggests that the decision to be vegan could require more cooking, as suggested by Stoll-Kleemann and Schmidt (2016)’s meta-review and mentioned by vegans VI4 and LO4 and meat reducer / part-time vegan MA2.

Cooking skills could, however, become a less essential component of a vegan diet if the availability of vegan foods and vegan convenience foods continues its current rapid increase in the UK (e.g. The Vegan Society 2017). Focus group participants commonly agreed that vegan food availability and convenience were greatly improved (e.g. BN3, LO9, BN9, BN6 and BN9) and that it was becoming ‘a lot easier’ (BN9) to be vegan.

The use of veg*n meat, fish or other AFP substitutes could serve a valuable role for those reliant on culturally-recognised omnivorous mealtime norms through the use of items that seem familiar and may mimic the taste or texture of well-known foods. Familiarity, in particular, has been

found to be important in the purchasing of more sustainable food options (Hoek *et al.* 2017) and in one's willingness to consume meat substitutes (Hoek *et al.* 2011). Such foods can not only be easier to prepare but could make the transition process feel more manageable, as meat reducer MA2 expressed:

> In my view, it's not meat substitution. It's something that does what meat does, i.e. get a burger and shove it under the grill and it can be ready. You don't have to whip it up … in an hour. The taste and texture are nice but, you know, it doesn't have to be like meat. … Chopping and cooking and — it takes a long time. And it's very labour intensive, whereas shoving something under the grill isn't.

Cooking skills and a willingness (or ability) to spend more time on food preparation were commonly discussed barriers, particularly for those accustomed to easily-prepared or ready-made foods (see 8.5 and 9.6).

The reliance on veg*n alternatives to maintain familiar meal constructs could, however, lead to increases in real or perceived food expenses (see 8.5). Reductions to the cost of veg*n options and alternatives may be a particularly important mechanism to support dietary change (Hoek *et al.* 2017) and it may then be easier for veg*ns to maintain familiar dietary norms without increasing their expenses or preparation time. This would also have the added effect of making such diets more accessible to those earning low incomes (see 9.2). Otherwise, a lack of finances and time may make it more difficult to transition to a fully veg*n diet within modern consumer culture without contributing to feelings of sacrifice (8.5, 8.7 and 9.6).

Perceptions that veg*n options cost more may be partially due to commonly held perceptions of AFPs as more valuable than plant-based foods (Twigg 1979). This could lead to feelings of sacrifice when paying similar amounts for a veg*n or meat-based option, particularly when eating out or in social situations where one may have less control. For instance, meat reducer MA1 described her frustrations in having to pay the same amount for a meal that was less 'substantial', such as 'a salad' (8.5), while vegans MA3 and MA5 both referred to dairy cheese as 'proper cheese' (8.3). Veg*n alternatives, on the other hand, were commonly distinguished by their veg*nness (e.g. 'vegan cheese', MA3 and LO3). Within such constructs, AFPs can be viewed as higher in value and veg*n alternatives as inherently lesser (i.e. not 'proper') substitutes.

As discussed in 8.7, the cost of food could be inversely related to the time spent on food preparation and purchasing. Time particularly emerged as an additional barrier (see 8.5) that has been largely unaddressed by previous literature and, yet, is essential in habit formation and maintenance (Southerton 2013). Reducers were compelled to balance health considerations and time with availability, convenience and expense (see 8.4 and 9.6). Those with the time, resources and motivation to cook veg*n foods may be more capable of controlling the healthfulness and cost of their food. For instance, near-vegan BL5 described how she had 'become really organised' in her weekly food preparation and that she was spending less time on food preparation than when she had been an omnivore. Cooking may also be a way to encourage others to eat meat-free or vegan food (e.g. MA3), an activity to engage in with friends or family (e.g. VI4) or a way to eat healthier (e.g. BL5). However, not all reducers are able or motivated to prepare their own food (e.g. vegan LO3) and for those unaccustomed to cooking, their dietary temporalities will need to be adjusted.

To establish a new behaviour, one ultimately needs to practice it (Kollmuss and Agyeman 2002) and it may be that, for those psychologically and physically able and ready, the participation in a month-long veg*n challenge can better support the establishment and maintenance of new ways of eating and new dietary norms. This could partially account for why those participating in vegan campaigns tended to reduce more (see Chapter 6) and, in general, had greater decreases in perceived barriers. In particular, over time they also tended to be more willing to try new foods (8.3) and were more likely to report having the skills to find recipes and prepare veg*n meals (8.4). Ultimately, the act of practicing veg*nism may support the formation of new dietary habits and help establish a new behaviour, bridging the gap between desiring a particular course of action and following through on it (Kollmuss and Agyeman 2002). Vegan VI4 described having 'never really liked cooking before' and eventually coming to 'really enjoy it'. However, this process – the formation of new habits – can be impeded by the unconscious nature of the 'routinization of consumption', with new habits forming 'in an almost unobserved way' over a long period of time (Ilmonen 2001, p.22).

The reducer may struggle between that which is highly routinised and, therefore, less reliant on time and energy and that which is highly rational and dependent upon conscious effort and planning (Ilmonen 2001). If one's underlying habitus remains largely unchanged through the (however) partial maintenance of familiar dietary habits and norms, it may be easy to fall back on old habits when pressed for time, as with meat reducer BL1: 'sometimes if I'm ever in a hurry I'll buy a packet of cheap supermarket meat'. Campaigns may be able to better support participants by providing information that matches their temporal rhythms. For instance, those who only allocate a short period of time to food preparation may be most benefited by quick and easy recipes.

Campaigns and policy makers could focus on directly addressing culturally-constructed mealtime norms and supporting the existence of a variety of different types of meals. In particular, veg*n diets may be more readily adopted when consumers embrace and formulate new conceptions of food and the necessary components of a proper meal. Veg*n and pescatarian diets can be reimagined as not simply the absence of 'proper' foods (e.g. 'proper cheese' – MA5 and MA3) to be substituted with lesser-than foods that are commonly seen as less valuable, less tasty or less substantial. Rather than viewing these diets as 'limiting yourself', seeing them as 'opening yourself to a whole new way of eating' (vegan MA5) may minimise feelings of sacrifice and promote positive dietary experiences.

Those holding onto omnivorous dietary norms may continue to perceive meals as necessitating meat (or a meat-like element), the so-called 'meat of the dish'. Familiar mealtime constructs, such as meat and two veg or a meat-based Sunday roast may cause transitioners to feel that a veg*n diet is adequate. The dependence on a meat-type element may also make a meal more expensive through the reliance on pre-made substitutes, which may also be more difficult to access than unprocessed plant-based foods. Instead, where new routines are formed, they can legitimise and provide relief from dietary reflexivity (Halkier 2001). Ultimately, the reflexive reducer may be more likely than the reflective reducer to achieve sustainable reductions.

Chapter 10 Conclusion

Key findings within this dissertation include the central role of animal protection motivators and social barriers in achieving sustainable reductions to animal food product (AFP) consumption. Animal protection motivation presented the strongest links to reduction successes, with the emergence of a potential *mindshift*, whereby AFPs can be construed as inedible or embodied representations of suffering and death (9.4). Emergent dietary changes moved beyond changing the quantity of AFPs consumed, needing to transition reflective behaviour into reflexive habits that replace omnivorously normative practices. Abstainers were more likely to adopt reflexive veg*n norms, while maintaining and often increasing reductions throughout the research period. This data is urgently needed in the formation of governmental and non-governmental interventions promoting sustainable diets.

While participating campaigns adopted a broad approach to promotion and messaging (see Chapter 4), emergent variations within the research sample suggest the existence of key motivational and personal distinctions. Future research could further extrapolate particular target groups, potentially by building on Onwezen and van der Weele (2016)'s typology (e.g. struggling or coping consumers) and incorporating key sociodemographic components identified within this sample – particularly age and gender. As this is the largest sample of reducers to be analysed in a research project to date (to the best of the researcher's knowledge) and represents those engaging in some of the largest reduction and vegan campaigns in the UK, the lack of diversity within the sample is an important finding that can empower advocates to seek strategies to reach new groups and ensure that relevant movements (e.g. animal protection or environmental) are inclusive and welcoming to diverse groups of people.

Little research has previously explored the nature of the reduction process and its relationship with specific groups of individuals. The findings discussed within this dissertation present important insights that can form the foundation for future interventions and research

exploring sustainable reduction promotion. Campaigns and policy makers can build off the key distinctions identified – such as men's greater propensity to use white meat as a substitute for red meat – to use the Behaviour Change Wheel to design strategic, targeted interventions (see Appendices 3 and 4). These could serve to reach groups largely unrepresented within this sample (e.g. those without university degrees) and to address specific components that are likely to be key for certain groups (e.g. highly motivated parents who do not have the time to regularly cook).

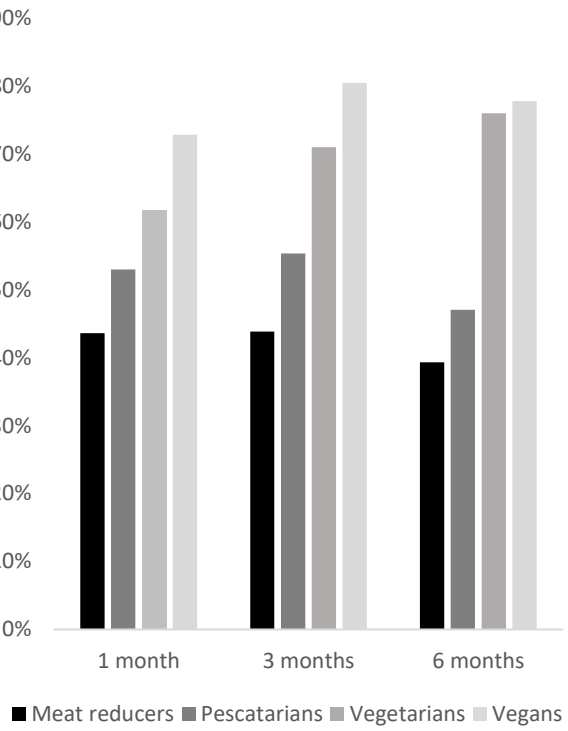
Insights into specific components of the reduction process present previously unresearched areas for potential, targeted interventions that incorporate one's psychological capabilities (a.k.a. competencies - Twine 2017), time commitments and available resources. For instance, the connections between health motivation and dairy consumption (see 7.5) suggest that an information or education campaign in this area may be effective. The elevated consumption of fish by pescatarians, older individuals, women and those earning high incomes presents several potential target groups for interventions addressing fish consumption. Topical issues could also be utilised when there is a 'window of opportunity' (Pollitt 2008) for dietary and policy change, as suggested by egg reductions that may be related to recent food safety concerns (see 7.6). Measures such as these could be key in promoting sustained reductions by addressing animal-based foods that specific types of reducers may be most likely to use as replacements, in line with the reduction hierarchy and inter-group trends (see Chapter 6).

This research presents key, previously unresearched insights into the sustainability of the reduction process. The emergence of the *meat reducer typology* (see 6.3.1) that generally follows a specific *reduction hierarchy* (see Chapter 6), whereby most meat reduction was not sustained, is essential knowledge for the formation of future interventions promoting dietary change. A clearer definition of what it means to be a meat reducer (e.g. a specific quantity of meat consumed per day or week) could assist in providing clarity in a process that may remain highly abstract and reliant on continuous reflection and monitoring. Governmental guidelines, in conjunction with additional policy measures (e.g. information or education campaigns) could be a key starting point for

promoting widespread reduced consumption. Campaigns could also incorporate stricter goals (e.g. two meat-eating days) that build over time.

In examining variations between abstention and reduction goals, findings reveal that veg*n goals may be the most sustainable (see Chapter 6). While most participants did not report goals for large dietary changes (see 5.4), those who chose to abstain from particular AFPs were the most successful in meeting their dietary goals (see Figure 10.1, right), while consuming less and reducing more. This presents a key area for future research to explore the effectiveness of different types of campaign messages and dietary goals (e.g. reduction, vegetarian or vegan).

Figure 10.1 Successful meeting of reduction goals within planned dietary groups



The social element has emerged as particularly relevant to the reduction process, building on the work of Twine (2014) through an understanding of social consumption leading towards sustainable behaviour change. Worsening social opportunities over time for multiple groups, particularly vegans and non-reducers, and the significant role of conversations about social elements in focus groups, reveal that this area – largely unaddressed in research and campaigns – is likely to be key to sustained reductions. Social elements were closely linked to every component of the reduction process and policy makers may be able to build upon these findings to develop policies that support shifting omnivorous cultural and social norms. Plant-based cooking classes – such as LifeAfterHummus in the UK (see Appendix 6) – could support knowledge development in a social setting, while potentially addressing the engagement gap presented by a lack of campaigns emphasising pro-self elements (i.e. health). Policy could also promote meat-free meals as sufficient and tasty through advertising and labelling campaigns, in addition to addressing current subsidy

policies that disproportionately support the maintenance of low-cost AFPs (Chemnitz and Becheva 2014; Simon 2013).

Community formation presented an opportunity to combat the negative responses of omnivorous family and friends, while potentially supporting the formation of a new relationship with AFPs that re-centres their animal source. The key role of animal protection motivation in the *vegan mindshift* (see 7.3 and 9.4), which may be fostered through feelings of guilt or unease around animal suffering or through encounters with others who have already experienced this change in perspective or with specific farm or companion animals, best supported sustained and increasing reductions amongst this sample.

Such connections may also be fostered by campaigns, such as iAnimal (see 4.3), and future research could further develop this mindshift by testing various metrics supporting its formation and through extrapolating differences in cognitive processes. While other motivators may be reliant on a certain degree of abstraction (e.g. the environment or health) that depends upon prerequisite levels of knowledge and understanding, animal motives can be highly personal and emotive, with a clear 'victim'. This may make this motive more generalisable and more powerful in promoting sustained reductions.

Future research into the relationship between reductions and motivators could further explore the generalisability of these relationships, particularly for animal motivators. Other motivating factors may still be important for many individuals and researchers could seek to create mechanisms to identify consumers' likely motivating factors. However, within this sample financial and food safety motivations were generally negatively related to reduction, while environmental and health motives were most effective when combined with animal protection. While health-focused campaigns may help address the engagement gap, other (e.g. environmental) campaigns may also be more effective if they incorporate components of animal protection. The incorporation of animal messaging within participant communications may increase this motivation and, resultantly, campaign impact. These findings are key for the promotion of sustainable behaviour

change and present an urgent area for future research to avoid the use of ineffective messaging and interventions.

Ultimately, this dissertation demonstrates, through the use of the BCW framework and theories of social consumption, that reduction is likely to be more than just eating less, but about reshaping one's relationship with the consumption process. While most participants did consume less, many (particularly meat reducers and pescatarians) did not sustain these reductions for the six-month period. The maintenance of omnivorous norms, while veg*n eating occurrences remain reflective acts, may inhibit lasting behaviour change. Skills and knowledge leading to the identification and preparation of veg*n foods emerged as key in the early stages of the reduction process, but continuing consumers seem to have been more likely to rely on recipes, while abstainers developed more cooking skills (see 8.4).

The ongoing consumption of AFPs could inhibit the development of habituated vegan practice that is likely to be connected to the development of competencies and new meanings (Twine 2017). Those practicing veg*n habits on a part-time basis (i.e. reducers) may struggle to develop unconscious veg*n norms that support reflexive dietary practices, particularly if these new practices do not fit into their daily temporal rhythms. If each veg*n eating occurrence remains reflective, reducers may be inconsistent in their dietary habits and lasting changes may seem overly difficult. Conversely, abstainers were more likely to form positive relationships with their new eating habits and identities and to describe the change as 'easy' (e.g. vegans LO7, MA5 and BN8; pescatarian BL4).

These findings are important in demonstrating the potential importance of 'practicing' veg*nism in forming new, unconscious habits and developing a new way of eating. This can help researchers, campaigners and policy makers in re-formulating intervention strategies to not simply focus on the quantity of AFPs consumed but on shifting the reflective into the reflexive. While a gradual approach to reduction may be most common, it may be most sustainable when incorporating a variety of steps leading toward an abstention goal. Month-long or other forms of abstention 'challenges' may be powerful tools in fostering skill development through the practicing

of veg*nism, with these campaigns' generally having greater and more sustained reductions (see 6.4.1). This presents an additional valuable area for potential future research to expand on the findings explored within this dissertation.

This dissertation has served to use a piece of in-depth, mixed methods research to examine the role of reduction and vegan campaigns in promoting lasting behaviour change, an area of key import for policy makers and researchers interested in achieving a sustainable future. The findings present a new and unique perspective to this complex and increasingly popular topic, moving beyond individual components of this behaviour change (e.g. cooking skills or habit formation) to an integrative approach to sustained dietary change. For the reducer, a new way of eating is not simply about eating less but eating differently.

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Glossary of terms

Animal food products (AFPs) – Foods derived from animals. For the purposes of this project, this includes red and white meat, fish, dairy and eggs. While other consumable products can be derived from animals (e.g. honey, gelatine or casein) they are less commonly avoided or known and are generally only present in small quantities, making serving measurement more difficult.

Animal protection – An umbrella term that includes both animal welfare and animal rights perspectives.

Animal rights – A perspective toward the treatment of animals focused on a vegan lifestyle (see definition for vegan).

Animal welfare – A perspective toward the treatment of animals that does not inherently include reduction. Animal welfare is overseen by specific laws and regulations and refers to 'how an *animal* is coping with the conditions in which it lives' and 'not suffering from unpleasant states such as pain, fear, and distress' (OIEA 2012).

Meat – Meat products are derived from the flesh of animals. However, fish and other types of seafood are commonly not categorised as 'meat', so for the purposes of this research project meat has been categorised as derived from land animals, including cows, pigs, goats, chickens and sheep/lambs.

Meat reducers – Those who are reducing their consumption of red and/or white meat.

Mindshift – A shift in perspective triggered by animal protection motivators, whereby animal food products are no longer seen as food options through a re-centring of the original animal source.

Non-reducers – Those who plan to continue eating red and white meat, but not to reduce their consumption any further. They may, however, choose to reduce their consumption of dairy, eggs and/or fish.

Overnight transitioners – Those who make a transition to an abstention form of reduction (pescatarianism, vegetarianism or veganism) suddenly.

Pescatarians – Individuals who do not consume red or white meat but do consume fish.

Primary motivator – A motivator that was categorised as 'very important' or 'important'.

Principal motivators – The three most prominent reduction motivators within this research and, generally, in previous research (see 2.4), are animal protection, the environment and human health.

Reduction hierarchy – An ordering of reduction preference, whereby reducers are most likely to reduce their red meat consumption, followed by white meat and dairy and, finally, eggs and fish. For abstainers, fish generally precedes dairy and egg elimination.

Red meat – Meat that is red when uncooked. This includes the flesh of pigs, cows and lambs.

Red meat reducers – Individuals who plan to continue to consume red meat, white meat and fish, but only to reduce / eliminate their consumption of red meat.

Reducer – Any individual who is attempting to reduce their meat consumption or to follow a pescatarian, vegetarian or vegan diet.

Secondary motivator – A motivator that was categorised as 'moderately important' or 'somewhat important'.

Veg*n – Someone following a vegetarian or vegan diet.

Vegan – An Individual who does not consume any animal products, including meat, fish, eggs or dairy. A vegan diet is often accompanied by other lifestyle changes, such as eschewing products that are made from any animal derivatives (e.g. leather or wool) or that have been tested on animals. However, as this research project focuses exclusively on dietary aspects, for these purposes veganism has been defined exclusively in terms of one's dietary choices. According to the Vegan Society: 'Veganism is a way of living which seeks to exclude, as far as is possible and practicable, all forms of exploitation of, and cruelty to, animals for food, clothing or any other purpose' (2018).

Vegetarian – An Individuals who does not consume red or white meat or fish but does consume eggs and/or dairy products.

White meat – Definitions of white meat may vary across contexts, but for the purpose of this project white meat refers to the meat of fowl, including turkeys and chickens.

Appendices

Appendix 1 Survey

The following has been adjusted to account for display variations and to enable display in printed form.

Researcher: Trent Grassian
E-mail: dtg5@kent.ac.uk

What you should know about this Research Project

You have been invited as a participant in *[CAMPAIGN]* to participate in our research investigating people's relationship with meat, dairy and eggs. This study is part of a PhD research project, which is being funded by the University of Kent. While you will not receive any direct benefit, your contribution will be immensely helpful to organisations that work on farmed animal welfare and meat reduction, as well as for the completion of this project. You are being asked to complete an initial survey and up to five short follow up surveys that should take no more than ten minutes each over the next twelve months. You will be given the option to withdraw your answers at the end of each survey and can opt out at any time by e-mailing me. Should you continue, after six months you may be invited to participate in a focus group discussion about the issues covered in the survey and some of the initial findings.

By completing all of the surveys you receive, you will be entered into a raffle to win £200.

Under the Data Protection Act, all information will be kept confidential and used for research purposes only, and your contact information will never be sold or shared.

Thank you for your participation and you are welcome to contact me at any time with any questions.

Researcher: Trent Grassian
E-mail: dtg5@kent.ac.uk

Participant Consent

You are being asked for your voluntary participation in a PhD research project funded by the University of Kent.

You will be asked to complete a short survey that should take no more than ten minutes. You will also receive up to five more surveys over the next twelve months. Each survey will be short and should take no more than ten minutes. If you complete all of the surveys you receive, you will be entered into a raffle to win £200.

After six months you may also be invited to participate in a focus group discussion.

Please consider the following points before confirming your agreement below:
The findings of the research may be written up for publication, policy makers and other organisations interested in our work. All content will be anonymised and it will not be possible to identify any respondents. You are free to refuse consent or to withdraw consent at any time. If you have any questions about the research, you can contact the researcher, Trent Grassian, at dtg5@kent.ac.uk. All data will be treated as personal under the 1998 Data Protection Act, and will be stored securely and without your name or any other potentially identifying information.

I confirm that I have freely agreed to participate in this research project.

I do not wish to participate.

[INITIAL SURVEY ONLY]

What is your current age?

[DROP DOWN MENU WITH ANSWERS RANGING FROM 'UNDER 18' TO 102]

In the past TWO DAYS, how many servings did you have of the following foods and drinks?

Think about all the meals and snacks you ate. Also think about everything you had at home or outside the home. One serving of meat or eggs is 3 ounces or 85 grams, about the size of a deck of cards. A serving of yoghurt is a small, 150 gram pot; a cheese serving is 30 g (about the size of a matchbox) and a serving of milk is an average glass (200 ml). It is important that you report everything you had to eat or drink during this time. The past two days refers to the two previous days of the week and so does not necessarily mean the past 48 hours. For example, if you are responding on a Wednesday you should report consumption for all day Monday and all day Tuesday. Please take your time.

Red Meat (beef, pork, lamb)	[ANSWERS RANGE FROM 0 to 10+]
White Meat (chicken, turkey)	[ANSWERS RANGE FROM 0 to 10+]
Eggs (omelet, in salad, etc.)	[ANSWERS RANGE FROM 0 to 10+]
Dairy (milk, yogurt, cheese, etc.)	[ANSWERS RANGE FROM 0 to 10+]
Fish and Shellfish (tuna, crab, etc.)	[ANSWERS RANGE FROM 0 to 10+]

Compared to SIX MONTHS ago, which of the following best describes your current eating habits for the following foods?

Please select 'Do not eat' for items you never eat.

	Eating less	Eating about the same	Eating more	Do not eat
Red meat				
White meat				
Eggs				
Dairy and Milk				
Fish and Shellfish				

[DISPLAYS IF SELECTED 'DO NOT EAT' OR 'EATING LESS' FOR ANY CATEGORIES IN PREVIOUS QUESTION]

How important were the following reasons in deciding to stop or reduce the amount of [FOODS REDUCED OVER PAST 6 MONTHS] **you are eating?**
Please check all that apply.

	Very Important	Important	Moderately Important	Somewhat Important	Not at all important
Concerns about food safety					
For health reasons					
Because of religious or spiritual beliefs					
To save money					
Environmental concerns					
Concerns over animal welfare					
Other: Please specify					

In SIX MONTHS, how do you think your consumption of the following foods will change?
Please select 'Will not eat' for items you plan to never eat.

	Will eat less	Will eat about the same	Will eat more	Will not eat
Red meat				
White meat				
Eggs				
Dairy and Milk				
Fish and Shellfish				

[DISPLAYS IF NO REDUCTIONS IN PAST SIX MONTHS AND SELECTED 'WILL NOT EAT' OR 'WILL EAT LESS' FOR ANY CATEGORIES IN PREVIOUS QUESTION]

How important were each of the following reasons in deciding to stop or reduce the amount of [FOODS PLANNING TO REDUCE OVER NEXT 6 MONTHS] **you are eating?**
Please check all that apply.

	Very important	Important	Moderately Important	Somewhat important	Not at all important
Concerns about food safety					
For health reasons					
Because of religious or spiritual beliefs					
To save money					
Environmental concerns					
Concerns over animal welfare					
Other: Please specify					

Please indicate how strongly you agree or disagree with each of the following statements.

	Strongly Agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I like trying new foods							
I do not want to change my eating habits or routines							
Eating more fruits, vegetables and whole grains is better for me							
I worry about contamination in meat, dairy and eggs							
I have the skills to cook without using meat, dairy or eggs							

Please indicate how strongly you agree or disagree with each of the following statements.

	Strongly Agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I know where to find vegetarian and vegan recipes							
I need meat to get enough protein							
Eggs are not an essential part of a healthy diet							
Some of my friends or family are vegetarian or vegan							
It is easy to find food without meat							

Please indicate how strongly you agree or disagree with each of the following statements.

	Strongly Agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
A vegetarian or vegan diet is generally more expensive							
Dairy is an essential part of a healthy diet							
I would not be able to find food if I did not eat meat, dairy or eggs							
Eating no meat or less meat is better for animal welfare							
Eating less dairy and eggs is better for animal welfare							

Please indicate how strongly you agree or disagree with each of the following statements.

	Strongly Agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
Eating no meat or less meat is better for the environment							
A meal without meat doesn't taste as good							
Reducing my meat consumption would affect my social life							
Reducing my meat consumption would affect my relationship with my family							
I would feel comfortable telling people I was vegetarian or vegan							

[INITIAL SURVEY ONLY]
What is your gender?

- ○ Male
- ○ Female
- ○ Other

[FOLLOW UP SURVEYS ONLY]
Has any of the information you provided previously changed?
Please check all that apply.

- ☐ Country of residence
- ☐ Income
- ☐ Education status

[INITIAL SURVEY OR IF SELECT THAT COUNTRY OF RESIDENCE HAS CHANGED]

In which country do you reside?

- ○ [*COUNTRY OPTIONS IN ALPHABETICAL ORDER]*

[INITIAL SURVEY OR IF SELECT THAT INCOME HAS CHANGED; OTHER VARIATIONS DEPENDENT UPON COUNTRY OF RESIDENCE]

What is your approximate annual household income AFTER taxes?

- ○ £8,410 or less
- ○ £8,411 to £10,550
- ○ £10,551 to £12,458
- ○ £12,459 to £14,365
- ○ £14,366 to £16,593
- ○ £16,594 to £19,214
- ○ £19,215 to £22,300
- ○ £22,301 to £26,183
- ○ £26,184 to £32,709
- ○ £32,710 and above
- ○ Do not wish to answer

[INITIAL SURVEY OR IF SELECT THAT EDUCATION STATUS HAS CHANGED; OTHER VARIATIONS DEPENDENT UPON COUNTRY OF RESIDENCE]

What is your highest level of education?

- ○ No formal qualifications
- ○ GCSE / O-Level / CSE
- ○ Vocational qualifications
- ○ A-levels
- ○ Bachelor degree
- ○ Master degree or other post-graduate degree

[INITIAL SURVEY ONLY; OTHER VARIATIONS DEPENDENT UPON COUNTRY OF RESIDENCE]
What is your ethnicity?

- ○ White
- ○ Mixed / Multiple ethnic groups
- ○ Asian / Asian British
- ○ Black / African / Caribbean / Black British
- ○ Other ethnic group

What is your e-mail address?
This is where we will send any follow up surveys.

_____

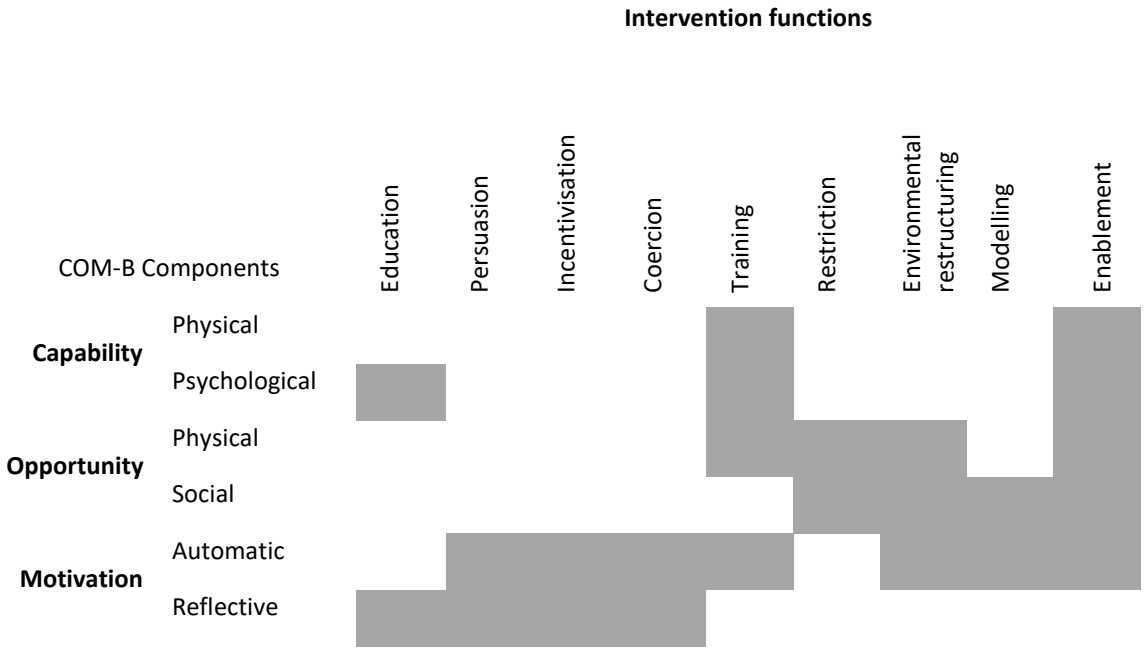
Do you have any comments or anything else you would like to share?

Appendix 2 Survey barrier questions by topic and BCW component

Question	Topic	BCW Components*
I like trying new foods	Novelty	AM
I do not want to change my eating habits or routines	Habits	AM
Eating more fruits, vegetables and whole grains is better for me	Health	PsC & RM
I worry about contamination in meat, dairy and eggs	Food safety	RM
I have the skills to cook without using meat, dairy or eggs	Knowledge	PhC & PsC
I know where to find vegetarian and vegan recipes	Knowledge	PsC & PO
I need meat to get enough protein	Health	PsC & RM
Eggs are not an essential part of a healthy diet	Health	PsC & RM
Some of my friends or family are vegetarian or vegan	Social	SO
It is easy to find food without meat	Availability	PO
A vegetarian or vegan diet is generally more expensive	Cost	PO & RM
Dairy is an essential part of a healthy diet	Health	PsC & RM
I would not be able to find food if I did not neat meat, dairy or eggs	Availability	PO
Eating no meat or less meat is better for animal welfare	Awareness	PsC & RM
Eating less dairy and eggs is better for animal welfare	Awareness	PsC & RM
Eating no meat or less meat is better for the environment	Awareness	PsC & RM
A meal without meat doesn't taste as good	Taste	AM
Reducing my meat consumption would affect my social life	Social	SO
Reducing my meat consumption would affect my relationship with my family	Social	SO
I would feel comfortable telling people I was vegetarian or vegan	Identity	PsC

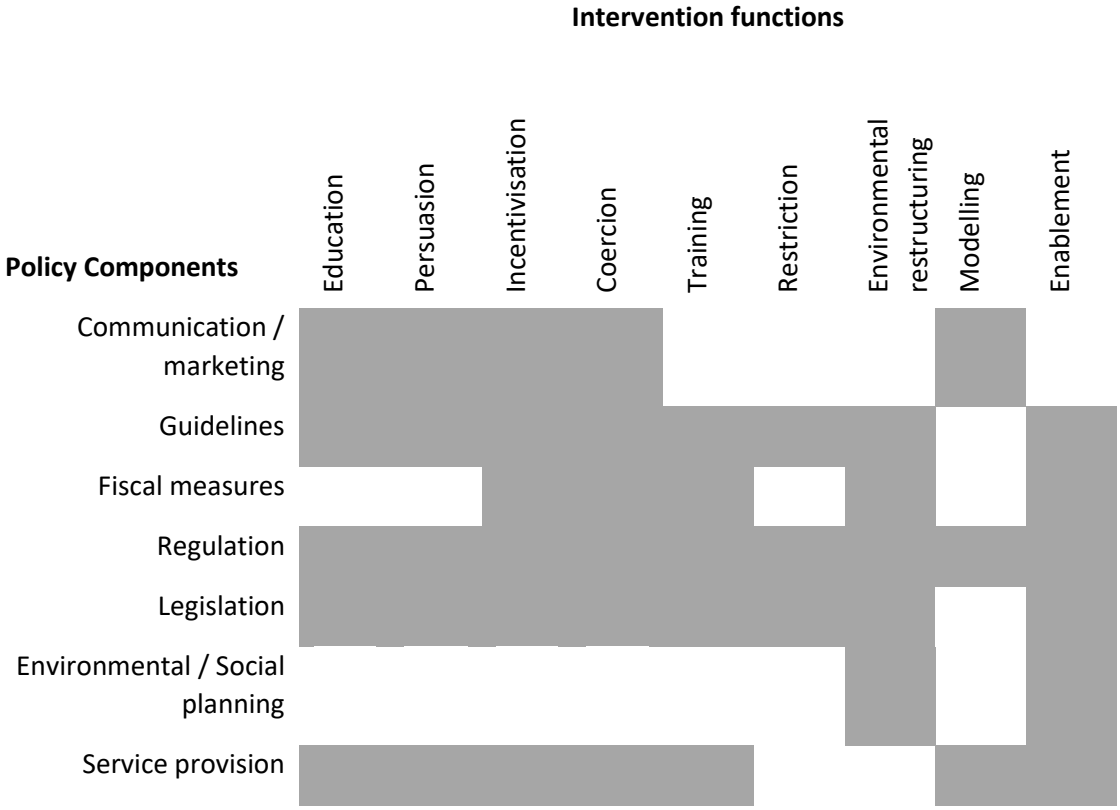
* BCW Terms:
Motivation: Automatic (AM) and Reflective (RM) Opportunities: Social (SO) and Physical (PO)
Capabilities: Physical (PhC) and Psychological (PsC)

Appendix 3 Implementation functions linked to COM-B categories



Adapted from Michie et al. (2014)

Appendix 4 Intervention functions linked to policy categories



Adapted from Michie et al. (2014)

Appendix 5 Behaviour Change Techniques

The following Behaviour Change Techniques are derived from Michie *et al.*'s *The Behaviour Change Wheel* (Robert *et al.* 2011). The book also includes definitions and examples of each technique.

Goals and planning
- Goal setting (behaviour or outcome)
- Problem solving
- Action planning
- Review behaviour goal(s)
- Behaviour contract
- Commitment

Feedback and monitoring
- Monitoring of behaviour by others without feedback
- Feedback on behaviour
- Self-monitoring of behaviour
- Self-monitoring of outcome(s) of behaviour without feedback
- Biofeedback
- Feedback on outcome(s) of behaviour

Social support
- Social support (unspecified, practical or emotional)

Shaping knowledge
- Instruction on how to perform the behaviour
- Information about antecedents
- Re-attribution
- Behaviour experiments

Natural consequences
- Information about health consequences
- Salience of consequences
- Information about social and environmental consequences
- Monitoring of emotional consequences
- Anticipated regret
- Information about emotional consequences

Comparison of behaviour
- Demonstration of the behaviour
- Social comparison
- Information about others' approval

Associations
- Prompts/cues
- Cue signalling reward
- Reduce prompts/cues
- Remove access to the reward
- Remove aversive stimulus
- Satiation
- Exposure
- Associative learning

Repetition and substitution
- Behavioural practice/rehearsal
- Behaviour substitution
- Habit formation

Habit reversal
Overcorrection
Generalisation of target behaviour
Graded tasks

Comparison of outcomes

Credible source
Pros and cons
Comparative imagining of future outcomes

Reward and threat

Material incentive (behaviour)
Material reward (behaviour)
Non-specific reward
Social reward or incentive
Non-specific incentive
Self-incentive
Incentive (outcome)
Self-reward
Reward (outcome)
Future punishment

Regulation

Pharmacological support
Reduce negative emotions
Conserving mental resources
Paradoxical instructions

Antecedents

Restructuring the physical or social environment
Avoidance / reducing exposure to cues for the behaviour
Distraction
Adding objects to the environment
Body changes

Identity

Identification of self as role model
Framing/reframing
Incompatible beliefs
Valued self-identity
Identity associated with changed behaviour

Scheduled consequences

Behaviour cost
Punishment
Remove reward or punishment
Reward approximation or completion
Situation-specific reward
Reward incompatible or alternative behaviour
Reduce reward frequency

Self-belief

Verbal persuasion about capability
Mental rehearsal of successful performance
Focus on past success
Self-talk

Covert learning

Imaginary punishment
Imaginary reward
Vicarious consequences

Appendix 6 Organisations working to provided plant-based foods to low income individuals and/or POC

The Afro-Vegan Society

The Afro-Vegan Society works to make a vegan lifestyle accessible and affordable for Black people and communities and uses veganism to address and overcome systematic race-based oppression. For more information, see: http://www.afroveganssociety.org.

Better Health Better Life

Better Health, Better Life is focused on health education and community outreach through workshops, events and providing resources to support individuals in accessing and eating healthy, plant-based foods. For more information, see: http://www.bhblnow.com.

The Food Empowerment Project

The Food Empowerment Project is a vegan food justice non-profit that seeks to create a more just and sustainable world by helping consumers recognise the power of their food choices. They encourage choices that reflect a more compassionate society by spotlighting the abuse of animals on farms, the depletion of natural resources, unfair working conditions for produce workers, the unavailability of healthy foods in communities of colour and low-income areas and the importance of not purchasing chocolate that comes from the worst forms of child labour. For more information, see: http://www.foodispower.org.

Food Not Bombs

Food Not Bombs collects unsellable food to prepare and distribute free vegan meals. They also provide free classes and events for activists around a variety of social justice and environmental areas. For more information, see: http://www.foodnotbombs.net.

LifeAfterHummus

LifeAfterHummus is a BMe led social enterprise focused on making nutrition and cooking classes accessible to all. Using the 'Food for Life' curriculum, they provide free plant-based classes around the UK, including courses dedicated to diabetes and cancer treatment and prevention. For more information, see: http://www.lifeafterhummus.com/.

Seed the Commons

Seed the Commons works to promote and create sustainable, plant-based food systems through education, policy work and community outreach. They also hold an annual vegan food sovereignty forum and promote 'veganic' (organic and vegan) farming. For more information, see: https://seedthecommons.org.

A Well-Fed World

A Well-Fed World runs a variety of programmes to address hunger relief and animal protection by promoting and providing plant-based foods to those in need and supporting plant-based farming and advocacy programmes. For more information, see: https://awfw.org.

Appendix 7 Key findings by sociodemographic category

Gender

- Men were more likely to be meat eaters
- Men ate more red, white and total meat, as well as more fish and total meat and fish
- Women reduced red, white and total meat, dairy and eggs more than men
- On average, men did not reduce their total meat consumption but did reduce their total meat and fish consumption
- On average, men ate more white meat over time and may be likely to use this as a replacement for red meat
- Men reduced fish more than women; women were eating less fish at the campaign start, but more at the campaign end and may be likely to use it as a replacement
- Men were more likely to be motivated by health and more likely to be motivated by only health
- Men were more likely to be motivated by saving money
- Women were more likely to be motivated by animal protection

Age

- The youngest groups ate the most red meat and may be the most likely to use white meat as a replacement
- Youngest were most likely to abstain or plan to become vegetarian or vegan
- Youngest were the least likely to consume fish, while the oldest were the most
- The oldest groups were the most likely to be meat reducers
- Those 55 and over were the least likely to meet their reduction goals and were unlikely to pursue an abstention diet
- Those 55 and over were the most likely to include animal welfare as a motivator
- The oldest were most likely to be motivated by health, while the youngest were the least
- The youngest were more likely to include financial motivations and the older were more likely to include animal protection

Income

- Providing information about / working to increase the availability of inexpensive convenience options could be particularly helpful for those earning low incomes
- Those with high incomes consumed more fish
- Those with low incomes were more likely to be motivated by finances

Other

- Those in rural settings may have less access to other reducers and veg*n foods and alternatives; social media may be particularly important for this group
- Those with dependents may be concerned about the healthfulness of a veg*n diet for youth, may have to make multiple meals if family members are unwilling to eat meatless meals and/or may continue to consume animal-based foods if family members are continuing to consume them

Appendix 8 Key findings and recommendations by dietary group (current or planned)

Meat eaters (reducers and non-reducers)

- Most meat reducers reported already reducing their meat consumption
- Most meat reducers (61%) did not meet all of their reduction goals
- Most meat reducers (53%) were not eating less (or no) meat after six months
- May rely on meat-centric meals
- Reduction generally focused on eating less / no red meat (only distinction between meat reducers and non-reducers)
- May not be familiar with meatless meals and may view these as less tasty or adequate
- Specific substitutes (e.g. 'mock meats') may be useful in allowing to maintain familiar meal constructs
- Health may be an important motivator and barrier: key to provide information combatting beliefs that plant-based diets are not nutritionally adequate
- Initial reductions are likely to disappear over time; may be important to encourage to continue reducing through increasing reductions
- Those who have not previously reduced (non-reducers) may be most likely to use white meat as a substitute, including planning to increase consumption
- Most likely to plan to increase fish and egg consumption
- Nearly one-third of meat reducers planned to eat more fish at the campaign start
- Non-reducers were the most likely to plan increases to white meat (8%)
- Focus was generally on red meat reduction but most meat reducers (67%) also planned to eat less white meat and/or fish
- Red meat reducers – who were not planning to eat less white meat or fish – were more likely to increase their white meat and/or fish intake over time
- Reducers may be likely to become temporary reducers, while some may become pescatarian, vegetarian or vegan in the future

Pescatarians

- Consumed the most fish and the majority consumed fish at each reporting period
- Likely to increase fish and/or egg consumption
- Very successful at not eating red or white meat but less successful in meeting goals; 47% met all reduction goals
- More successful at egg than dairy reduction
- If using fish as meat substitute, may help to encourage to consume meals that are fully plant-based and do not have a central, meat-type component

Vegetarians

- Some self-identified vegetarians may continue to consume meat or seafood
- Lowest in health motivation
- Unlikely to increase egg or dairy consumption

- 100% were not consuming meat after six months; 3% were consuming fish
- More likely to meet all of their reduction/abstention goals than meat reducers or pescatarians
- More likely than meat reducers or pescatarians to meet their reduction/abstention goals for red meat, white meat, fish, dairy and eggs
- Many reduced further after first month, eating less dairy and eggs over time
- Increase in vegans over time (12% after six months)

Vegans

- Only group where the majority was not already following this diet
- Most likely to meet all reduction goals and goals in each category
- Social element is likely to be particularly important
- Most may go through a series of stages before becoming vegan

General

- Reduction generally occurred gradually
- Participants were more likely to pursue small (e.g. vegetarian to vegan) changes than larger ones (e.g. meat eater to vegan)
- Sudden transitions may be less common
- Over time, participants were more likely to abstain from particular types of animal foods
- Most reduction occurred during the first month
- Most reduction followed the reduction hierarchy, prioritising red meat, then white meat, dairy and, finally, fish and eggs (for abstention fish preceded dairy and eggs)
- For planned increases, fish and eggs were most prominent
- More increased their egg and fish consumption than those who initially planned to do so

Appendix 9 Key findings by motivator

Animal protection

- May be particularly important in achieving sustained reductions for consumers
- Most prominent motivator
- Most strongly linked to consumption levels, reduction amounts and meeting of reduction goals
- On average, abstainers more motivated by animal protection than reducers
- Mentioned by nearly all focus group participants, while other motivators were unlikely to be mentioned
- Most meat reducers recognised benefits of meat reduction on animal welfare but were less likely to do so for eggs and dairy
- Greater levels of reduction / abstention linked to greater awareness
- May disagree on ethics of animal welfare vs. animal rights, with some focusing on high welfare products
- Most likely to be included as motivator by those 55 and over
- Specific encounters with animals (farm or companion) could be particularly impactful
- Linked to further decreases to dairy and egg consumption over time
- Lowest levels of consumption and greatest levels of reduction and reduction success where animal welfare was a primary motivator

Environment

- Almost as popular as animal protection
- Abstraction may inhibit impact on daily dietary decisions and contribute to environmental motivation being more prominent amongst those with higher educational attainment
- For some, central to decision to reduce and may be only or main primary motivator
- Lack of awareness likely to be an issue, though those in campaigns may be more likely to already be aware
- Focusing on carbon footprint may lead to neglecting other types of environmental impacts
- Environmental motivation was not related to fish consumption; may need to explicitly mention environmental impacts of fish consumption
- Greater levels of reduction success when a secondary motivator than when primary
- Connected to greatest levels of reduction success when also motivated by animal protection

Health

- Third most common motivator and most common secondary motive
- May be more common primary motivator for meat eaters
- May be most effective if a secondary motive for those influenced by animal protection
- Lack of campaigns addressing this area
- Most participants indicated health was a primary motivating factor

- Being motivated by health may be less important than ensuring that health misinformation is not a barrier
- May be important for dairy consumption, as linked to total consumption, reduction levels and successfully meeting reduction goals
- Larger motivator for oldest groups, least for youngest

Food Safety

- Though popular, most did not include it as a primary motivator
- Highest amongst vegans and pescatarians, lowest amongst vegetarians
- Requires certain level of knowledge and awareness
- Only linked to egg reduction, but could be due to contamination issues in Europe during the research period

Financial

- Slight majority indicated that finances were a motivating factor
- More likely to be a motivator for low income individuals, as well as younger individuals and people of colour
- Was inversely related to reduction success, so should be used cautiously and further research is needed in the area
- Environmental campaign participants more likely to be motivated by finance
- Only category where meat eaters had higher motivation levels than vegans
- Where a primary motivator, tended to consume the most, meet fewer reduction goals and reduce the least, while those unmotivated by finances tended to consume less, meet more reduction goals and reduce more

Religion

- Unpopular amongst population (25% motivated by religion)
- Those motivated by religion tended to consume less and were more likely to meet reduction goals

Reduction campaigns

- May be more likely to recruit those who are not already reducing, as well as current meat reducers
- May be key for those not willing to pursue a veg*n goal
- Could reach those consuming the largest quantities of animal-based foods but additional measures may be necessary to maintain any initial reductions and avoid the use of white meat, fish or eggs as replacements
- Most already reducing their meat consumption, but also drew more non-reducers
- Reduction campaigns drew more participants who were male or 55 and over

Vegan campaigns

- Social element may be particularly impactful for those trying a vegan diet
- May want to provide support in managing negative social encounters early in the campaign and offer resources for accessing vegan communities
- Most participants in two of three vegan campaigns were not planning to become vegan within the upcoming six months and many planned to continue consuming meat
- For the Great Vegan Challenge, fewer than 4% were vegan at the campaign start (and 22% planned to be in six months); almost 30% were vegan at six months
- Likely to be important to focus on fish, eggs and dairy, as most participants were already pescatarians and vegetarians
- Drew few non-reducers
- Increasing goals and/or opportunities for reflection may help encourage maintained and increasing reductions
- Some vegan campaigns may reach more who are uninterested in becoming vegan at the start (e.g. Great Vegan Challenge) and thus serve as an opportunity for increased motivation and to commit to further reductions, while other vegan campaigns (e.g. 30 Day Vegan) may draw more individuals who are already planning to become vegan
- Vegan campaigns drew more young participants

General

- Focusing on food (e.g. the 30 Day Vegan campaign) may draw more health-motivated individuals
- Focusing on the 'how' of reduction (e.g. recipes) may draw more already committed to change but looking for help in the transition process
- Larger goals (e.g. vegetarianism or veganism) may turn off some meat eaters but for those who do participate these campaigns may result in larger changes and increase participants' propensity to exceed their initial planned reductions
- Campaigns may be able to piggy-back off one another, serving as increasing steps towards greater reduction, with individuals' first reduction campaign being one for non-reducers (e.g. Part-Time Carnivore), then engaging in a campaign for those already reducing (e.g. the

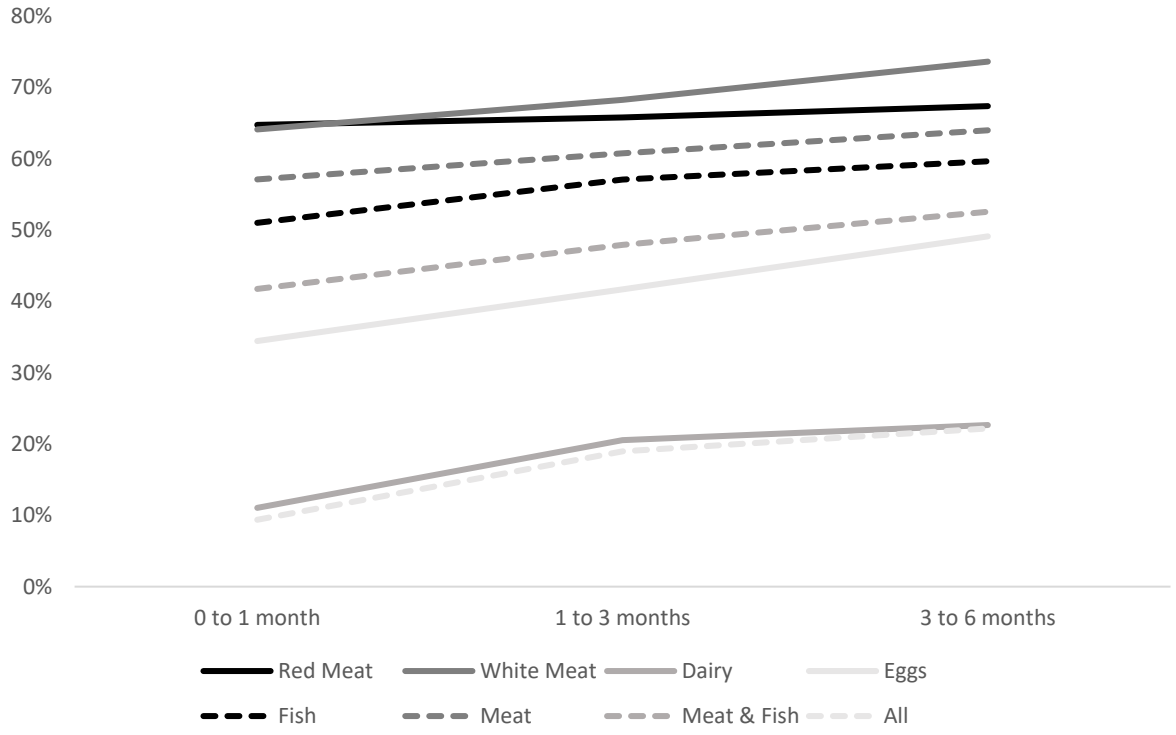
Let's Eat Better Pledge), a pescatarian or vegetarian campaign, a campaign to trial a vegan diet and gain motivation (e.g. the Great Vegan Challenge) and finally a campaign to practice veganism and gain key skills (e.g. 30 Day Vegan)

- Campaigns that serve as an initial source of awareness-raising and motivation (e.g. iAnimal) may cause participants to feel particularly committed to them
- Campaigns could target individuals based on the type of consumer, including their relationship with animal food product consumption (e.g. struggling or coping consumers-Onwezen and van der Weele 2016), gender, income, family status (e.g. those with/without children), enjoyment of cooking or importance of health / convenience / time / cost
- Lack of interventions / campaigns addressing health motive
- Campaign populations were disproportionately white, female, high income and highly educated

Proportion pursuing each dietary category by wave

	Vegans	Vegetarians	Pescatarians	Meat reducers	Non-reducers	n
0 months	13.66%	19.67%	11.18%	47.19%	8.30%	1,530
1 month	14.67%	21.60%	11.96%	37.36%	14.40%	736
3 months	19.92%	21.47%	11.41%	32.30%	14.89%	517
6 months	16.98%	21.51%	12.45%	33.40%	15.66%	530

Participants reporting zero servings by food type in each wave



Categorical portion reduction within campaign samples

a) … zero to one month

	Red Meat	White Meat	Eggs	Dairy	Fish	Meat	Meat & Fish	n
GVC	**0.08***	**0.13***	**0.48***	**1.18***	0.04	**0.21***	**0.19***	146 to 159
GVUC	0	0.4	-0.4	0	0.4	0.4	0.8	5
iAnimal	0.33	-0.17	-0.25	0.75	0	0.17	0.17	6 to 8
LEB	**0.13***	0.02	**0.19***	0.15	0	**0.14***	0.1	402 to 507
PTC	0.43	0.05	0.5	0	0.25	0.4	0.78	17 to 21
3DV	0	-0.09	-0.19	0.43	0.09	-0.14	-0.5	20 to 23

**Confidence intervals (to 95%) do not include zero*

b) … zero to three months

	Red Meat	White Meat	Eggs	Dairy	Fish	Meat	Meat & Fish	n
GVC	0.08	**0.14***	**0.50***	**1.52***	0.11	**0.20***	**0.31***	132 to 144
GVUC	0	0	0.25	0.4	0.4	0	0.4	5
iAnimal	0.43	0	0	0	0	0.43	0.43	7 to 8
LEB	0.05	0.03	0.25	0.43	0.12	0.01	0.13	251 to 315
PTC	0.56	**-0.53***	0.44	-0.83	0.13	-0.14	-0.31	13 to 18
3DV	0.06	0.06	0.19	0.72	0.06	0.06	0.13	14 to 18

**Confidence intervals (to 95%) do not include zero*

c) … zero to six months

	Red Meat	White Meat	Eggs	Dairy	Fish	Meat	Meat & Fish	n
GVC	0	**0.13***	**0.48***	**1.27***	0.10	0.13	0.21	120 to 128
GVUC	0	0	-0.2	1.4	0.2	0	0.2	5
iAnimal	0.5	-0.2	0	0.33	0	0.4	0.4	5
LEB	0.08	0.03	**0.23***	**0.44***	**0.15***	0.08	0.16	279 to 354
PTC	-0.07	-0.18	0.31	-0.07	0	-0.36	-0.27	11 to 15
3DV	0.08	-0.08	-0.08	0.62	0	0	0	12 to 13

**Confidence intervals (to 95%) do not include zero*

Appendix 12 *Environmental Nutrition* book chapter

The following is a draft chapter, to be published in Environmental Nutrition: Connecting health and nutrition with environmentally sustainable foods*, edited by: Joan Sabaté, with formatting adjusted:*

Food Policy – where does environmental nutrition fit in?

Trent Grassian

Where we have been: Public policy and food

From preventing the sale of poisonous food to influencing the availability and cultural significance of various food stuffs, public policy has a long history of shaping the food system. The goals and mechanisms used by such policies has been the source of much debate, particularly as mounting evidence reveals the current food system's instability. As has been shown throughout this volume, systems of production have become increasingly unsustainable through overproduction, unequitable distribution and access, poor animal welfare, excessive waste, environmental degradation, and detrimental impacts to human health.

Over the past century, food policy, particularly in High-Income Countries (HICs), has largely been based on two seemingly contradictory philosophies. First, the US and other HICs have emphasized individual liberty and freedom of choice as the keys to a free market food system. Secondly, productionist agricultural policy has been based on increasing outputs at reduced monetary cost for producers, most recently through a philosophy of "sustainable intensification," leading to the rapid growth of large-scale, industrialized farming (Sonnino et al., 2014). Policies promoting the need to produce more food, emphasizing the projected need to feed "nine billion people by 2050" conceptualize future sustainability as best achieved by simply producing more food (SCAR, 2011). As policymakers and researchers are now finding, creating more food does not necessarily mean more people will have access to

nutritious diets. Today, more than two billion people are overweight or obese, while nearly one billion are mal- or undernourished. One-third of food produced globally is wasted, while food is lost through conversion into biofuels and animal feed. In fact, the feed grown for animal agriculture could instead be used to feed an additional one to three billion people (Davis and D'Odorico, 2015; DG Agriculture and Rural Development, 2015).

As the European Union (EU) and other international governmental and non-governmental organizations acknowledge, "increased food production has been realized largely at the expense of environment and sustainable development" (DG Agriculture and Rural Development, 2015, p. 4). By focusing on improved technologies and strategies that cut costs for producers and manufacturers, these costs have been externalised onto society through detrimental impacts to human health and the environment. For instance, Simon (2013) estimates that the actual societal cost of meat consumption in the US is at least 270 percent higher than the price paid by the consumer. Treating food as a tradable commodity that can be transformed into feed and fuel belies attempts at international food security, as sufficient food may be produced, while an insufficient supply is available to consumers (Sage, 2012).

Changing the way food is produced is not sufficient to address global sustainability goals. In the case of animal agriculture, the United Nations Food and Agriculture Organization (FAO) has estimated that even with maximum production-based changes, resultant emissions will still increase due to continued growth in global consumption (Gerber et al., 2013). With global emissions needing to be reduced by at least 40 to 70 percent by 2050, 14.5% of which are due to animal agriculture (IPCC, 2014; UNEP, 2015), policy must help to prevent increasingly unsustainable consumption and production patterns.

With little (or no) regard for sustainably changing consumption patterns, policy has focused on ensuring enough food calories are available to feed a growing population without

addressing unsustainable dietary trends or food system waste. Instead, through the use of direct fiscal payments, advertising campaigns that promote certain food items (e.g. milk and beef), policy has often supported and contributed to unsustainable dietary trends. Subsidies disproportionately support large manufacturing companies, with 40 percent of the entire EU budget consisting of agricultural subsidies and 80 percent going to just 20 percent of recipients (Chemnitz and Becheva, 2014). Animal agriculture has been the largest recipient of such subsidies, receiving 32 billion dollars in OECD countries in 2012. Meanwhile schemes like the US' check-off programs have used government resources to promote certain products, creating slogans like: *Beef. It's what's for dinner*. And spending $130 million in 1999 to create the milk mustache celebrity campaign (Nestle, 2002).

Directly and indirectly encouraging consumers to eat certain foods undermines attempts at promoting a free market and individual freedom of choice. However, increasing the volume of food produced and the variety of products available, while granting significant support to unsustainable food products (especially animal food products, a.k.a. AFPs) has de-stabilized the food system and undermined consumer desires for sustainable choices. Consumers are forced to pay for the external environmental and health costs of modern agriculture, while the cost and availability of foods has been skewed by unsustainable production practices and governmental support.

The good news is that the history of political consumptive steering is proof that such policies can and do work. Now, it is time for them to be used to promote environmental nutrition within the food system.

Where we can go: The future of dietary public policy

To address increasingly unsustainable consumptive habits – the so-called "nutrition

transition" (Gill et al., 2015) – a holistic policy approach that incorporates all aspects of the food system is necessary. Policy needs to account for the types and quantities of inputs (natural resources and societal demands) and outputs (waste, emissions, and food) at every stage leading from production to consumption, in addition to the multiple ways in which what and how individuals eat is shaped by modern society and culture (Sabaté et al., 2016). In addition, as most people and societies increasingly depend on global food trade, particularly for staples (Morley et al., 2014), measures that address food systems at a national level can only ever be partial solutions.

A joined-up, holistic approach to food policy should also account for previous and current policy, in addition to the social and cultural dynamics underpinning consumptive trends and drivers. By unifying policy approaches under a research-driven common theoretical framework, governments can create a consolidated multi-policy system that avoids the creation of contradictory messaging or strategies. Drawing on the wealth of existing research and theory, policy proposals can be evaluated and resources can be used most effectively to create a sustainable system at the lowest cost.

Where policy has previously emphasized sustainable intensification, it should now be focused on sustainable consumption, a holistic approach that aims to incorporate all sectors of society from public to private in order to achieve "the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations" (United Nations Development Programme, 1998, p. 104). The public policy ethos has been used for over a quarter-century and is receiving significant attention at national and international levels. The theoretical work under what has been termed Ethical Consumption may take this thinking one step further, calling for the explicit questioning of how and what we should consume and the

impacts these decisions have on others (Lewis and Potter, 2011). Implicit within these frameworks is the knowledge that the separation of nutrition and agricultural production within governing organizations is counterproductive: while health experts are supporting eating more fruits, vegetables, legumes, and whole grains, agricultural policies continue to promote the production of animal-based foods, feed, and highly processed foods.

Sociological researchers have been theorizing and investigating the Sociology of Consumption for over a century, finding that "standards of comfort, convenience and cleanliness" (Warde, 2000, p. 66) are linked to cultural norms, even impacting the very conception of what constitutes an adequate meal. Cultural factors are crucial to understanding consumption's social role. For instance, Ben Rogers has traced the deep links between beef and British culture, describing roast beef as "that icon of Englishness" (2004, p. 131). Many Brits therefore construe a "proper meal" as consisting of "meat and two veg" (Warde, 2000, p. 106). Food can be an important indicator of social status and identity, with Nick Fiddes (1991) describing meat as a powerful cultural and social symbol, at once a source of "prestigious and vital nutrition," while remaining a "dangerously immoral and potentially unhealthy" food source that depicts humanity's "control of the natural world" (1991, p. 2). As policy has helped to create the cultural role particular foods fill, it should be a key player in encouraging a re-prioritization of environmentally nutritious diets.

Ultimately, consumptive habits rest upon the choices individuals are faced with every time they eat and measures aimed at addressing unsustainable consumptive habits need to be viewed through a specific model of behavior change. Researchers have found that accessing and consuming healthy sustainable diets can be hindered by a variety of psychological, physical, and social barriers, including: availability of options, taste, convenience, habits, cost, food novelty, social and cultural norms, friends and family, perceived stigmas around different dietary identities (e.g. vegetarianism), and awareness of

reasons to change one's eating patterns.

Obstacles to sustainably shifting diets cannot be targeted in isolation, as they exist in a complex, interconnected web that may curtail the potential for singular approaches. For example, increasing the availability of food options may be insufficient if these foods are inconvenient or expensive. Alternatively, without an awareness-raising component individuals may not know why they should buy these newly-available foods or even what they are. However, as researchers have shown in a variety of fields, the "attitude-behavior gap" means that the simple accumulation of information is not necessarily sufficient to achieve successful behavior change (Kollmuss and Agyeman, 2002). Additionally, the negative impacts of unsustainable production and consumption are often hidden to the consumer through the "dispersion of causes and affects" and "fragmentation of agency" (Gardiner, 2011, p. 24). Environmental impacts are made invisible in time and space, allowing an individual's consumptive habits to impact future generations and others around the world (Bailey et al., 2014; Gardiner, 2011).

Michie *et al.* (2014) have evaluated existing behavior change models and found that just four frameworks have been used in nearly two-thirds of behavior change research. Such models have been found to be incomplete conceptualizations of behavior change (e.g. Prochaska, 2006) and Michie and her colleagues have created what they describe as the first comprehensive behavior change framework, the "Behaviour Change Wheel" (BCW) (Michie et al., 2011). The BCW is an invaluable tool for policymakers, as it incorporates direct links between policy, sources of behavior (e.g. social opportunities or reflective motivation), and intervention functions (e.g. education or environmental restructuring). It is already in use by a variety of non-profit organizations and has been tested in several studies examining health and diet (e.g. Watson and Wyness, 2013).

Table 1. Sources of behavior*		
Capability	Psychological	– Knowledge and psychological skills: sustainability of foods, where to find foods and recipes, how to prepare foods – Ability to engage in essential mental processes: ability to interpret labels and other sources of information about sustainability – Conceptions of own identity and other identity categories (e.g. environmentalist)
	Physical	– Physical skills, stamina, and strength
Opportunity	Social	– Social and cultural cues and norms: traditions, conceptions of the necessary components in a meal, valuation of various foodstuffs – Friends, family, and other interpersonal influences
	Physical	– What is allowed / enabled by the physical environment, including time, cost, resources (including availability of foods), locations, and physical barriers (e.g. travel distance to access certain foods)
Motivation	Reflective	– Planning and judgements about what is good or bad behavior – Impacted by general awareness of motivations for sustainable diets and personal value systems around these
	Automatic	– Processes that involve desires and needs, including impulses and reflexes – Includes taste, habits, and reactions to novel food items

***Adapted from Michie et al. 2011**

The BCW model is built upon Atkins and Michie's COM-B theory that integrates particular behavior change goals with an individual's capability (ability to change their behavior), opportunity (the external environment), and motivation (automatic or reflective). When applying COM-B to environmental nutrition, the potential barriers to dietary change identified by other researchers can be clearly and easily categorized (Table 1). Further, when using the BCW these areas can then be directly linked to specific intervention functions, such as education or coercion. For instance, to address psychological capabilities (e.g. the ability to determine what foods are sustainable or knowledge of sustainable foods and recipes), interventions should focus on education, training, and/or enablement.

The outer layer of the BCW portrays types of policies that can be used to promote

sustainable behavior change, which are also linked to behavior sources and intervention functions. Thus, this model is particularly useful for policy makers, who can use it to (a) identify specific elements to be addressed and (b) match this/these to particular strategies and policies, making it an important tool not only for policy makers, but for all interested in promoting environmental nutrition. This framework will be drawn on to explore the variety of tools available to policy makers in the promoteion of environmental nutrition.

How it can be done?: The policy toolbox

The creation of a research-based framework and approach to policy creation is an important component in changing our food system. Within that structure, a variety of approaches (see Table 2, below) will be necessary to alter the way food is produced and consumed at every level and to address the necessary components of behavior change.

Many consumers are lacking essential knowledge about the components of a healthy, sustainable diet and supporting awareness-raising initiatives can improve individuals' psychological capabilities (Dibb, 2013; Macdiarmid et al., 2016; Tobler et al., 2011). By integrating a common conception of sustainable diets into national and international nutrition guidelines, governments can ensure a common message about what (and how much) people should eat. In general, sustainable diets are described as addressing both overconsumption and malnutrition by shifting consumptive patterns toward eating more fruits, vegetables, legumes, and whole grains (Garnett, 2014) (see Chapter 13 for more information).

Some national guidelines do not yet account for sustainability, while others have begun to incorporate environmental with human nutrition. In their most recent guidelines, Sweden – using the tagline "Find your way to eat greener, not too much and to be active!" – and the Netherlands recommend eating more fruits, vegetables, legumes and whole

grains, while consuming no more than 500 grams of meat per week (about 70 grams a day) (Gustin, 2016; Livsmedelsverket, 2015). The Netherlands has also cut their fish consumption recommendations from two to one serving per week, due to concerns about overfishing (Gustin, 2016). An increasing number of other countries are also now including sustainability components, including China's recommendation to cut meat consumption by fifty percent (Milman and Leavenworth, 2016).

Table 2. Potential Policy Strategies

Policy Strategy	Target Group	Possible Components
Information and Education	Consumers	• Advertising • Nutrition guidelines • Education programs as a part of standardized curriculum and/or for expectant parents
Taxation	Consumers, Suppliers	• Eliminate / reduce taxation on food items • Introduce taxes on food types or for those from certain production methods
Choice Architecture	Consumers, Suppliers	• Changes to the layout of grocery stores and menus, including signage, displays, and item placement
Public procurement	Consumers, Suppliers	• Types of foods purchased and sold in public spaces (e.g. schools and libraries)
Labelling	Consumers, Suppliers, Producers	• Food labelling pertaining to carbon footprint, environmental impact, animal welfare, and/or nutritional value
Partial and Full Bans	Suppliers, Producers	• Prohibition of certain food items, types of production practices, or imports
Subsidies	Producers	• Changes to existing subsidies • New subsidies targeted at particular production practices or foods
Research and Development	Producers	• Create healthy food alternatives and changes to production practices • Increase understanding of barriers to sustainable consumption

Creating informed citizens: spreading knowledge through guidelines, education, labelling, and advertisements.

Many countries, including the US, have yet to incorporate any components of sustainability in their nutrition guidelines. Marion Nestle, a former member of the Food and Drug Administration's Advisory Committee, and now a food policy researcher, describes her experiences helping to create the nutrition guidelines in *Food Politics* (2002). According to Nestle, six out of eleven committee members had links with the meat, dairy, and egg industries, demonstrating the "revolving door" between the private and public sectors. Food lobbyists regularly meet with and donate millions to these and other elected officials, undermining the government's ability to avoid institutional bias and promote environmental health. Recently, the US Government concluded a two-year investigation by finding that their Dietary Guidelines should integrate health and environmental standards (Mason and Lang, 2017). Despite enormous public support, the new guidelines continue to neglect sustainable components. In fact, Harvard's School of Public Health has created a Healthy Eating Plate and Pyramid to "address deficiencies" in the US' My Plate guidelines, recommending eating more plant-based foods and eliminating all dairy products (Harvard T.H. Chan School of Public Health, 2016).

Public nutrition education can be an important mechanism to promote guidelines and improve psychological capabilities, by encouraging healthy and sustainable consumptive habits from an early age as a part of the national curriculum, as well as through adult education for future parents (DG Agriculture and Rural Development, 2015; Dibb and Fitzpatrick, 2014; FAO, 2010). The curriculum could use nutrition guidelines as a baseline to help consumers learn how to access, prepare, and cook healthy, sustainable meals, while

increasing knowledge about key nutrients and vitamins. Researchers found that community-based programs promoting sustainable diets increased individual motivation by reflecting on personal values (Warner et al., 2013). By supporting individuals through a combination of education and information campaigns, policy can empower "citizen-consumers" as "individual moral agents" (Spaargaren and Oosterveer, 2010, p. 1887).

Awareness-raising can also be furthered with signage, advertising, and labelling initiatives. In the US, check-off programs have created government-sponsored advertising initiatives with direct benefit to industry. For instance, the 1999 milk mustache campaign resulted in a .7% increase in milk sales, 40% of which was for flavored milks (mostly chocolate) (Nestle, 2002: 7). Other governmental organizations have also worked to promote the sale of specific food items, with the EU pledging to contribute an additional €39 million to "the promotion of agricultural products" in 2014, the overwhelming majority of which is earmarked to meat and dairy products (European Commission, 2014). Such initiatives can undermine claims of a free market system, while inhibiting consumers access to sustainable diets.

Labelling can be an important tool for empowering consumers to make more informed choices, while holding producers to account for the sustainability of their products. Current labelling schemes can be particularly difficult for consumers to interpret and use, relying on their recognition of certification symbols and the understanding of complicated numerical tables. There are also problems with a lack of regulation on products' health claims. For instance, Dannon's Activia® yogurt lost a 2010 lawsuit after spending two years falsely claiming it was "scientifically proven to regulate digestion and boost immune systems" (McMullen, 2010).

Proposed initiatives for environmental labels include a Climate Choice meal label for restaurants (Pulkkinen et al., 2015) and a benchmark system that compares a good's

environmental footprint on a ruler with other common behaviors (e.g. eating a serving of cheese) (Nissinen et al., 2007). Additionally, support for a traffic-light style labelling system (in this case referring exclusively to health) was found by a two-year US study that showed significant shifts in purchasing behavior when used alongside changes to food layout and displays (Thorndike et al. 2012). The EU is also currently in the process of assessing the viability of extending their voluntary, international eco-label to include food products, finding that this may be a useful strategy (Sengstschmid et al., 2011). The World Health Organization (WHO) (2014) also supports the creation of a consistent health and environmental food labelling system. The European Consumer Organisation draws on existing research to support a European-wide color-coded health labelling system and mandatory menu labelling chains (BEUC, 2015, p. 26).

On their own, environmental labels may have a limited impact. Specifically, researchers have found that eco-labels may hold less potential to shift purchasing behavior than health or animal welfare labels and may be more effective if provided in an integrated approach with these other metrics (e.g. Vanhonacker et al. 2013). This could also include a certification scheme, similar to but more comprehensive than the organic label, with research suggesting this could also allow for higher price margins (Bonnet and Bouamra-Mechemache, 2015). However, to create an accurate labelling system research is urgently needed into the water, carbon, and other footprints specific to various food items (Pulkkinen et al., 2015).

While information-based policy measures are a crucial component of environmental nutrition, information on its own may not be enough to promote substantial, lasting dietary change. For instance, the UK government has promoted healthier, more sustainable eating through its Eatwell Guide, including their “Five-a-Day” program to encourage the consumption of fruits and vegetables. Yet, despite nearly a decade of labelling and

advertising initiatives, less than a third of British adults were achieving even this minimal consumptive target in 2012 (Bates et al., 2014). In addition, as AFP consumption continues to increase, updated nutrition targets remain significantly lower than average consumption rates in these countries (FAO 2014).

The subtle approach: nudges

Nudges have become a particularly popular concept in policy-making in the US and many other countries, enabling consumers to make choices that they would ultimately view as better for themselves (Thaler & Sunstein 2009). Such strategies address the "foodscape" (a.k.a. "choice architecture structures"), the environment where individuals make consumptive choices. Such measures are regularly used by companies to increase profits and can include changes to the way food items are displayed or offered, menu layouts (such as placing clearly-identified "green" options at the top), in-store signs or displays, changing the "default" option, or providing incentives. For instance, asking at the checkout if customers would like a bag of apples for $1 or offering vouchers to those who buy five or more servings of fruits and vegetables. As Thaler and Sunstein explain: "there is no such thing as a 'neutral design,'" such that even "small and apparently insignificant details can have major impacts on people's [behavior]" (2009, p. 3). Adjusting the choice architecture structure can nudge consumers to make more sustainable choices, while still allowing for individual freedom of choice: "with appropriate nudges, neither agency nor consumer freedom is at risk" (Sunstein, 2015, p. 203).

Governments have already shown a willingness to incorporate subtle policy nudges to promote healthier, more sustainable diets, but research suggests that current foodscapes can encourage unsustainable eating. For instance, researchers in Melbourne found that over

85 percent of the supermarkets they evaluated had snack foods at every check out and many also displayed them prominently at the front and back and in island bin displays (Thornton et al., 2012). This increases consumers' ability to buy snack foods, which are most frequently purchased impetuously (Crawford et al., 2007; Piacentini et al., 2000). However, by changing consumers' physical opportunity through modifications to the food environment, their habits and social opportunities can shift as well.

In their systematic review, Garnett *et al.* (2015) found that most research supports the use of nudges, including coupons or vouchers, changing portion or package sizes, and adjustments to the variety and arrangement of foods. In another meta-review looking exclusively in small food stores in the US, most studies found that nudges resulted in greater consumer awareness, purchasing, and consumption of healthy foods (Gittelsohn et al., 2012).

If not introduced in a joined-up approach with other policy measures, the unconscious nature of choice architecture strategies may limit their range of influence. For instance, though coupons or vouchers could be used to address some fiscal discrepancies, they would require additional effort on the part of consumers and could not hope to overcome the impact of existing subsidies on unsustainable food items. Garnett *et al.* (2015) and a second systematic review (Skov et al., 2013) found several studies citing inconclusive or contradictory evidence and concluded themselves that more research was needed. Skov *et al.* (2013) found that layout and variety of foods had a positive impact, but changes to plate or cutlery size (as an impetus to eat smaller portions) did not have a measured effect.

Information-raising initiatives and nudges can support environmental nutrition by changing consumers' physical and social opportunities (i.e. the food environment), psychological capabilities (i.e. knowledge of what to eat and how to access and prepare it), reflective motivation (i.e. awareness), and automatic motivation (i.e. habits). However, while

these non-invasive strategies focused on subtle changes to the food environment are often described as important first steps, they are unlikely to be sufficient on their own. In a political climate where more stringent policy strategies may be rejected outright and public awareness about environmental nutrition is lacking, some researchers support nudge-type measures being used in a stepped policy approach to pave the way for other measures b increasing public awareness and (hopefully) subtly shifting behaviors (e.g. Wellesley et al., 2015). They may also help shift social and cultural dietary norms by adjusting the physical and social food environment for consumers and suppliers. However, on their own these are unlikely to counterbalance the enormous impact of governmental subsidies, corporate advertising, and a food environment that supports buying cheap, unhealthy, and unsustainable foods (Wellesley et al., 2015).

Paying for sustainability: Fiscal measures

With information dissemination wholly reliant upon consumers' abilities to make a rational choice using the information they are provided (Thorndike et al., 2012), many other factors – including the availability of particular items, monetary barriers, and taste – can still inhibit widespread dietary change. This is particularly difficult when the current food system supports unsustainable food choices through subsidies and public procurement (the purchasing of food by public bodies).

Food purchased and provided publicly for schools, armies, and other publicly-owned institutions – some of the largest purchasers and suppliers of food – should adhere to established sustainability guidelines and ensure high animal welfare standards (CIWF, 2014; Macdiarmid et al., 2011). Through increased accessibility, sustainable public procurement can contribute to consumers' physical and social opportunity, as well as their automatic motivation (S. Michie et al., 2014). This could also contribute to shifts in the cultural and

social role of various foodstuffs. For instance, Argentina's Secretary General explained a recent decision to implement Vegan Mondays at the President's executive mansion and office as "a simple way to start an intense discussion about the diet of Argentinians" (Plant Based News, 2017).

Morgan and Marley (2014) describe public procurement as potentially one of the most powerful governmental tools, but recognize the need to overcome numerous barriers (e.g. fragmentation in the public sector, cost, knowledge, and legal issues). They state: "If the public sector is to become a more effective agent of change in the food system, the status of the procurement function needs to be enhanced so that it is conceived as a strategic instrument to refashion markets, production and consumption" (2014, p. 100).

Shifting public funds toward more sustainable consumptive patterns can also be supported through changes to current subsidy structures. In the EU, US, and other countries, a variety of foodstuffs – particularly feed and other resources for AFP production – benefit from significant governmental subsidies. Subsidies have historically supported increased agricultural intensification and unsustainable consumption and production through price-guarantees for cheap meat and dairy products, the production of feed, and the growth of industrialized agriculture. In the US every industry dollar spent on lobbying, on average, results in an additional $2000 in subsidies, with AFPs receiving 30 times more than fruits and vegetables (Vinnari & Tapio 2012; Simon 2013).

In the EU, price guarantees for livestock were in place until the early 1990s, while up to forty percent of the cost of all new animal housing (the majority of which is highly intensified) is still subsidized (Chemnitz and Becheva, 2014). Instead, subsidies should be focused on the promotion of sustainable production practices, such as improving crop diversity and increasing the consumption of sustainable, healthy plant-based foods (Gill et al., 2015; Wellesley et al., 2015).

Taxation measures can be used to expand subsidies' influence by increasing the price of unsustainable foods. However, taxing that which is already subsidized is a type of political juggling: the same funds are just shifted back and forth without going anywhere. However, taxation can play an important role in changing consumption patterns and could come alongside or after subsidy changes. Taxation has historically been used on a variety of unhealthy products (including tobacco and alcohol) and taxes on sugary drinks have been approved in several US cities, the UK, South Africa, Mexico, and France. Measures have also recently been expanded to include some products that are environmentally detrimental, including plastic bags.

One particularly popular proposal for taxation is what is referred to as a Pigouvian system, whereby goods are taxed according to the strain they place on the environment (e.g. CIWF, 2016; Simon, 2013; Vinnari and Tapio, 2012). This could also be linked to the elimination of value-added tax (VAT) on sustainable products and/or increased VAT on unsustainable products (currently meat has a reduced VAT in many countries). To be more holistic in approach, this system could incorporate external impacts on human health, as well as an "ethical tax" based on welfare conditions of animals (e.g. the death and perceived suffering of an animal) (Vinnari and Tapio, 2012).

Changes to public subsidies and systems of taxation can address the external costs (i.e. externalities) incurred by unsustainable production practices and imposed on society. For instance, in the case of chicken production, Singer and Mason explain:

> Tyson produces chicken cheaply because it passes many costs on to others. Some of the cost is paid by people who can't enjoy being outside in their yard because of the flies and have to keep their windows shut because of the stench. Some is paid by kids who can't swim in the local streams. Some is paid by those who have to buy bottled water because their drinking water is polluted. Some is paid by people who want to be able to enjoy a natural environment with all its beauty and rich biological diversity (Singer & Mason 2006: 32).

These types of externalities are a kind of market and policy failure that ignores the many

ways in which production mechanisms can impact individuals, society, non-human animals, and the environment. When consumers are lacking in knowledge about the impacts of their consumptive habits, they are missing important sources of psychological capability and reflective motivation. Thaler and Sunstein argue: "When incentives are badly aligned, it is appropriate for governments to try to fix the problem by realigning them" (2009, p. 196).

A popular critique of fiscal measures is that they disproportionately impact low-income people (e.g. Porritt 2010). While this should be an important consideration for policy makers, it is important to note that these populations are often those most severely impacted by externalities (Weis, 2013). Food access is not an argument against fiscal measures, but a critical social justice perspective relevant to any free market system, whereby certain products and services are more readily available to those with more disposable income. Instead, fiscal measures within the food system can mean: "You can continue your behavior, so long as you pay for the social harm that it does" (Thaler & Sunstein 2009: 196). This also addresses the fundamental question raised by a sustainable consumption model of governance: what is the role of public policy and what "public good" should be promoted? Ultimately: should consumers have the right to consume without regard for their external impact?

Finding new food frontiers: Research and Development

Public funds can also be used to create and support Research and Development (R&D) opportunities to promote new production practices, healthier and more sustainable alternatives, and improvements in animal welfare. In the research half of R&D, many governmental agencies have also historically funded a wide variety of research to change food production and dietary trends and it is important this be used to not only promote sustainability but to minimize or eliminate industry influence, which funds a large volume of

research each year (Nestle, 2002). In 2009, the United Kingdom allocated £100 million for the creation of vitamin-enriched genetically modified crops. The European Union provides 80 billion euros for agricultural research through the Horizon 2020 program. Governments have also funded programs to genetically engineer animals, often with substantial negative impacts for welfare (see, for instance, Gura, 2010, pp. 72–73).

For individual behavior change, programs can help improve the availability and acceptability of sustainable and healthy foods, an area of concern that has been identified by a variety of recent European Union initiatives (e.g. DG Agriculture and Rural Development, 2015; DG for Internal Policies, 2015). Meat alternatives are one key area of recent and future growth and an important opportunity to find sustainable substitutes that even heavy meat eaters could embrace and enjoy. Companies are now creating lab-grown meat (e.g. Memphis Meats and Hampton Creek), as well as plant-based alternatives that mimic the taste of animal-derived meat (e.g. Beyond Meat and Impossible Foods). Many are recognizing the enormous potential of these opportunities to encourage behavior change, with Tyson Foods (one of the world's largest meat producers) recently purchasing five percent of Memphis Meats in 2016.

Food-related R&D programs should be focused on promoting sustainability within the food system, in addition to improving understanding of the barriers to sustainable diets and the potential effects of various policy strategies. As with subsidies, current funding opportunities should be focused on promoting environmental nutrition. R&D should only fund measures that improve sustainability, such as transitioning agricultural production from environmentally-destructive mono-cultures that are susceptible to local diseases toward the farming of traditional, healthy and seasonal plant-based foods.

Regulatory strong-arming: Full and partial bans

A final policy instrument that could form part of a joined-up approach is the use of regulatory bans. One particularly useful strategy would be bans on products from unsustainable production practices, such as Massachusetts's 2016 banning of eggs from caged hens (Miller, 2016). Bans could be particularly useful to improve animal welfare, as many regulations have been found to be either inadequate or underregulated (for example, FAWC, 2011). Susanne Løgstrup, Director of the European Heart Network, also recommends bans be used to promote healthful eating, specifically calling for a ban on all foods containing trans fatty acids (DG for Internal Policies, 2015).

Bans could be used in conjunction with other types of regulation, including labelling, certification schemes, and fiscal measures that support more sustainable practices. Standards could also be used to establish what foods are acceptable in terms of environmental impact, carbon footprint, animal welfare conditions, staff working environments, and the impact on human health. It is important to note that such measures must account for imported foods, as in our globalized food system most of the food we eat is likely not produced locally. By reducing (or eliminating) the availability of certain unsustainable foods, consumers could be empowered through improvements to their physical opportunities, producing knock-on effects to their social opportunities and automatic motivations.

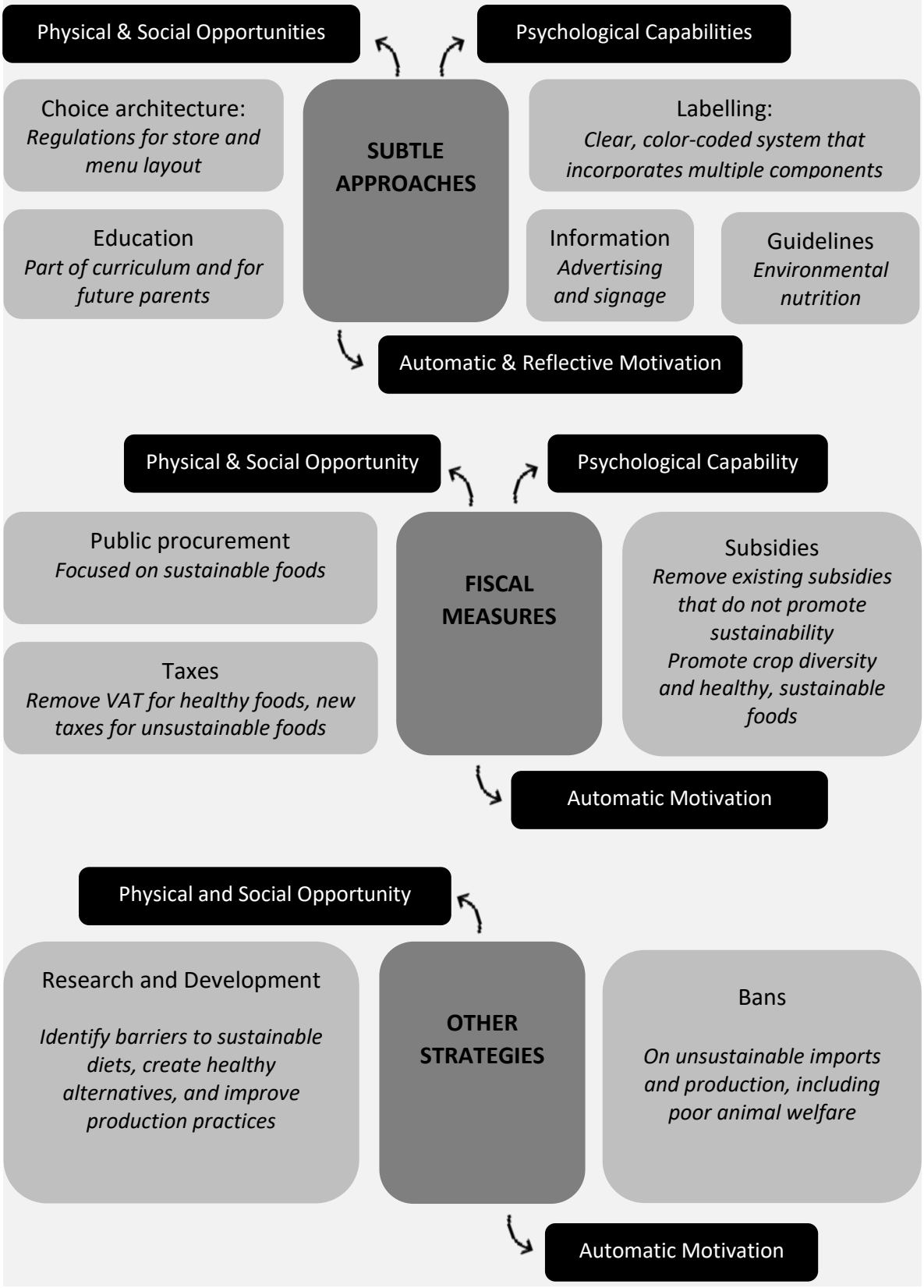
Conclusions

A variety of strategies exist that could contribute to creating a sustainable food system. For those promoting policy change and for policy makers instilling that change, proposals should be based on a common framework that accounts for behavior change, social and cultural components of consumption, and an ethical approach to creating a

sustainable future. Policy strategies need to be unified, addressing common goals and target groups, as no single mechanism is sufficient to address the many components of widespread behavior change necessary to promote environmental nutrition. Policy approaches should include a mixture of awareness-raising initiatives, nudge-type approaches, fiscal measure, and research and development, as well as possibly some full or partial bans (Figure 2).

A policy approach is urgently needed to address the ongoing impacts to the environment, human health, animal welfare, global inequalities, and global warming. If political leaders and the wider public are not ready to promote the necessary changes, than it is crucial that awareness-raising and other nudges are implemented quickly throughout the food environment to promote greater understanding of and motivation for dietary sustainability. The need to achieve a sustainable food system can unite policy makers, activists, nonprofits, and all who are interested in improving the welfare of human and non-human animals and our planet under a common policy goal: global environmental nutrition.

Figure 1. Joined-up policy approach, paired with behavior change components



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