



Reducing Animal Product Consumption: Studies of U.K. Meat-Eaters

Chris Bryant

Viva!

November 2018

Contents

Executive Summary	3
Introduction	4
Study 1: Attitudes Survey	5
Background	5
Methods	5
Results & Discussion	6
Study 2: Social Appeals Experiment	10
Background	10
Methods	10
Results & Discussion	11
Study 3: Calls to Action Experiment	14
Background	14
Methods	15
Results & Discussion	16
Study 4: Menu Labelling Experiment	18
Background	18
Methods	18
Results & Discussion	21
Conclusions	22
References	23

Executive Summary

In a series of 4 studies on meat-eaters in the U.K., I investigate attitudes towards vegetarian and vegan diets, the effects of different social framings and calls to action on intended animal product consumption, and selection of vegetarian and vegan options from a menu under different labelling systems. The main findings of note are:

1. Most people agree that veganism is healthy, ethical, and good for the environment.
2. The major barriers to veganism are perceived taste/enjoyability, perceived ease/convenience, and perceived cost. An expanding variety of vegan products in different outlets could address all of these issues.
3. About 1 in 6 U.K. meat-eaters intend to reduce their meat consumption in the near future, whilst only around 2% intend to increase it.
4. There appears to be little difference in the effectiveness of appeals which frame veganism as an aspirational celebrity lifestyle or a growing social trend compared to simply outlining the health, environmental, and ethical arguments for veganism.
5. Though not statistically significant, the calls to action 'Try vegan' and 'Join the vegan movement' result in a higher proportion of people intending to reduce their animal product consumption, and ordering a vegan starter guide, compared to the call to action 'Go vegan'.
6. Though not statistically significant, selection of vegan options is substantially higher on menus which are unlabeled, or which use (P) and (M) labels compared to menus which use (Ve) and (V) labels.

Altogether, this series of studies has had moderate success in identifying messages and techniques to encourage more meat-eaters in the U.K. to move towards vegan options.

Introduction

In recent years, animal advocates have begun to formally study the effectiveness of various advocacy techniques (Humane League Labs, 2018). Given that there are billions of animals to help, and animal advocacy organisations have limited resources, it is important that consumer-facing messages should be as effective as possible. This will enable advocates to achieve more behaviour change, and help more animals, with the same amount of resources.

Whilst the effective animal advocacy community generally views consumer campaigns as ineffective compared to institutional reform efforts (Sentience Institute, 2018), a variety of organisations committed to effective advocacy have produced studies on effective leaflets (Humane League Labs, 2017b), effective online videos (Mercy For Animals, 2017a), and public attitudes towards farmed animals in different countries around the world (Faunalytics, 2018). Convincing omnivores to move towards veganism could have other benefits in the long-term, particularly if they go on to become animal advocates and affect the behaviour of other people.

In this report, I present a series of four studies conducted online with samples of meat-eaters in the U.K. Study 1 is a survey of attitudes towards vegetarian and vegan diets, and intentions to reduce consumption of meat and other animal products. Study 2 is an experiment investigating the effects of social framings on intended animal product consumption, whilst Study 3 is an experiment investigating the effect of different calls to action on intended animal product consumption. Study 4 is an experiment investigating the effects of different labelling systems on choice of vegetarian and vegan options from a mock menu. It is hoped that this report will be informative for those wanting to advocate for animals most effectively.

Study 1: Attitudes Survey

1.1 Background

In a time when veganism is getting an increasing amount of media coverage, it is useful for advocates to understand the attitudes of mainstream consumers towards vegetarianism and veganism in order to understand motivations and barriers for adopting vegetarian and vegan lifestyles.

Existing research on attitudes towards vegetarianism and veganism has found several perceived benefits (Corrin & Papadopoulos, 2017). Many people discuss vegetarianism as a route to better peace and wellbeing, identifying potential benefits such as being more content with oneself and helping to create a more peaceful world (Lea & Worsley, 2002; Lea, Crawford & Worsley, 2006). More specifically, consumers often recognise health benefits such as decreased saturated fat intake, increased fruit and vegetable intake, and disease prevention (Graça, Oliveira & Calheiros, 2015; Lea & Worsley, 2002). Whilst some people recognise benefits to animal welfare and the environment, these have been ranked lower than personal benefits in studies thus far (Lea & Worsley, 2002; Vanhonacker et al, 2013).

Studies have also identified several barriers to vegetarianism. The strongest of these is simply enjoyment of eating meat (Graça, Oliveira & Calheiros, 2015; Lea, Crawford & Worsley, 2006). This was the number one reason for not being vegetarian in a recent UK survey (The Independent, 2017). The second most important barrier was convenience, with consumers saying vegetarian dishes are difficult to prepare and there is a lack of options when eating out (Lea, Crawford & Worsley, 2006; Vanhonacker et al., 2013). Many consumers also worried about health aspects of vegetarianism, mainly not getting enough protein and/or iron (Lea, Crawford & Worsley, 2006). On the whole, despite perceiving many benefits, most consumers are unwilling to reduce their meat consumption (Corrin & Papadopoulos, 2017).

Whilst there are a good number of studies on this topic, we currently lack a large-scale representative study of attitudes of UK meat-eaters asking about specific attitudes and beliefs on vegetarianism and veganism. This study will build on existing research to examine attitudes towards vegetarianism and veganism in the UK, as well as examine the effect of various attitudes and demographic factors on willingness to reduce consumption of meat and other animal products.

1.2 Methods

In this study, I recruited 1,000 UK meat-eaters aged 18 and over. Participants were recruited through the online research platform, Prolific, and each participant was paid £0.45 for 5 minutes of their time. Although recruitment was for meat-eaters only, there was a small number of vegetarians in the original dataset ($n = 25$); these participants were removed, and their responses were replaced with more meat-eaters. The final sample was 50% male and 50% female, and the mean age was 34.02 (SD = 11.67).

First, participants read some brief information about the study, and gave their consent to take part. They were then given definitions of vegetarianism and veganism, and asked to give their opinions about 11 different aspects of vegetarian and vegan diets using 7-point bipolar scales. The scales were unhealthy—healthy, unethical—ethical, bad for the environment—good for the environment, inconvenient—convenient, expensive—affordable, not tasty—tasty, not enjoyable—enjoyable, socially unacceptable—socially acceptable, not aspirational—aspirational, not nutritious—nutritious, and difficult—easy. The order of these items, and the order in which participants were asked about vegetarianism and veganism was randomised to control for order effects.

Next, participants answered questions about their consumption of meat and their consumption of animal products ‘one month from today’. On 6-point scales, participants could indicate that they would eliminate, greatly reduce, slightly reduce, maintain about the same, slightly increase, or greatly increase their consumption of either. Similar scales have been used in previous effective animal advocacy research (Mercy For Animals, 2017b; Humane League Labs, 2017b).

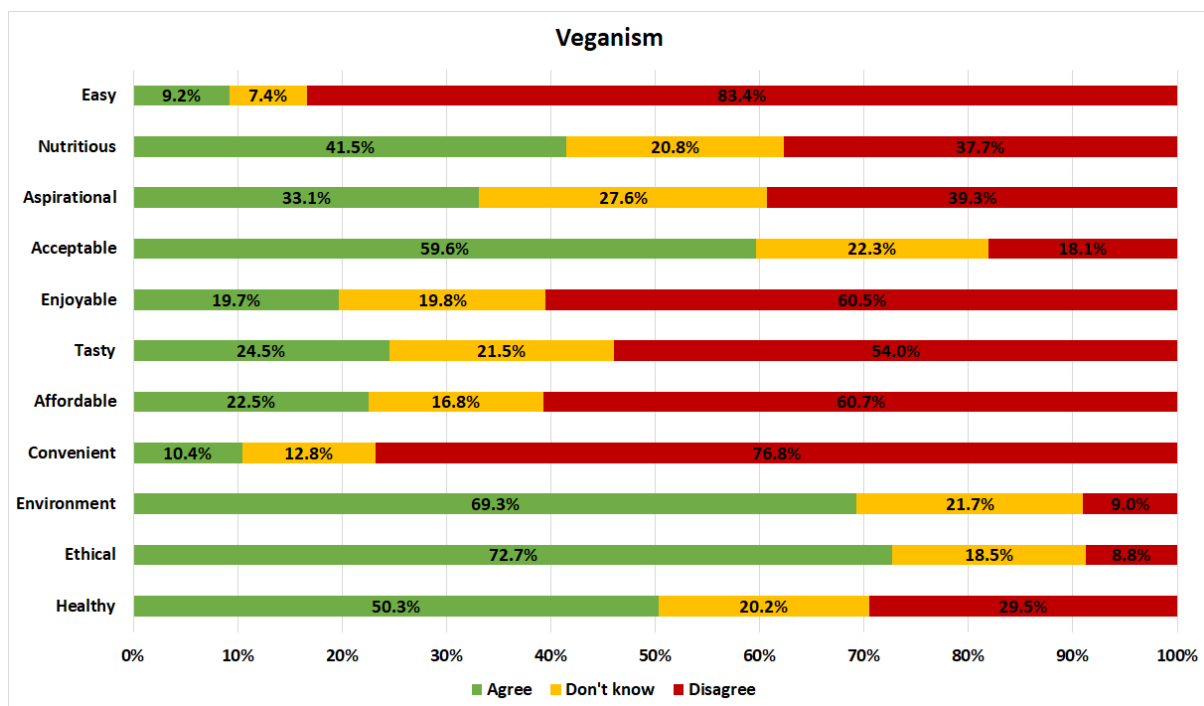
Finally, participants gave demographic information, including their age, gender, political orientation, education, and income. Participants were then debriefed and compensated.

1.3 Results & Discussion

The clearest way to illustrate consumer attitudes about various aspects of vegetarianism and veganism is by coding them as positive, negative, or neutral for each aspect. Participants who gave ratings of 1-3 on each 7-point scale were coded as negative; participants who gave ratings of 5-7 were coded as positive, and participants who gave a rating of 4 were coded as neutral.

As shown here, the majority of UK meat-eaters agree that vegan diets are ethical (72.7%), healthy (50.3%), and good for the environment (69.3%). Most meat-eaters, therefore, already agree with the major benefits of veganism which advocates often advertise. This is a finding which advocates could advertise to demonstrate that most people agree with these benefits of veganism. This would be likely to increase the number of people who recognise these benefits, since there is good evidence that people’s beliefs and behaviours are influenced by the beliefs and behaviours of others (Rivis & Sheeran, 2003).

Given that most meat-eaters already recognise these benefits, there may be limited persuasion potential of reiterating the arguments. No doubt, for many, repeated collisions with cognitive dissonance will eventually have an impact, but clearly there are other perceptual barriers to behavioural change at play.



The major negative views of veganism are the belief that it is difficult (83.4%), that it is not enjoyable (60.5%), that it is not tasty (54.0%), that it is not affordable (60.7%), and that it is inconvenient (76.8%). Reliability analyses indicate that these five factors can be collapsed into three: taste and enjoyability ($\alpha = .869$), ease and convenience ($\alpha = .773$), and affordability.

These three factors are major determinants of food choice in general. In a survey of 706 consumers, Steptoe, Pollard, and Wardle (1995) found that people consistently rated price, sensory appeal, convenience, and health as the most important factors in food decisions. Ethical concern was rated as amongst the least important factors. This has been replicated elsewhere (Fotopoulos et al., 2009; Januszewska, Pieniak & Verbeke, 2011). Addressing these perceptions, therefore, should be a priority.

Taste and enjoyability

Just 25% of UK meat-eaters think veganism is tasty, and just 20% think it is enjoyable. This mirrors the findings that liking meat too much is the main barrier to vegetarianism for meat-eaters (The Independent, 2017), and that most non-vegans say it is moderately or very difficult to remove dairy from their diet (Humane League Labs, 2014).

The best way of overcoming this problem seems to be demonstrating the quality of vegan foods, including vegan alternatives to non-vegan foods. Most UK supermarkets now stock high-quality vegan meat alternatives, and encouraging more people to try these could address this major barrier of perceived taste. Humane League Labs (2015) found that familiar vegan foods (such as stir fries, burritos, and pasta) are most appealing to meat-eaters. However, in physical demonstrations, promoting direct replacements for non-vegan foods like meat alternatives and oat milk might be most aligned with convenience, since consumers can replace non-vegan foods directly.

Ease and convenience

Just 9% of UK meat-eaters think veganism is easy, and just 10% think it is convenient. This mirrors the findings that a lack of options when eating out is one of the most difficult things about veganism (Humane League Labs, 2014).

Fortunately, this appears to be something which is in the midst of change. Several high-profile mainstream restaurants and retailers have introduced or expanded their vegan ranges this year, including Wagamama, Domino's, Byron Burger, Zizzi, Sainsbury's, Tesco, and Waitrose. This makes veganism more accessible, easier, and more convenient.

One strategy advocates could employ is to encourage and promote this trend by publicising examples of outlets with vegan options, and campaigning to encourage other mainstream outlets to introduce or expand vegan ranges. Encouraging individual vegans to let restaurant managers know that they ate there because they had vegan options (or avoided eating there because they did not) is also a strategy to address this.

Affordability

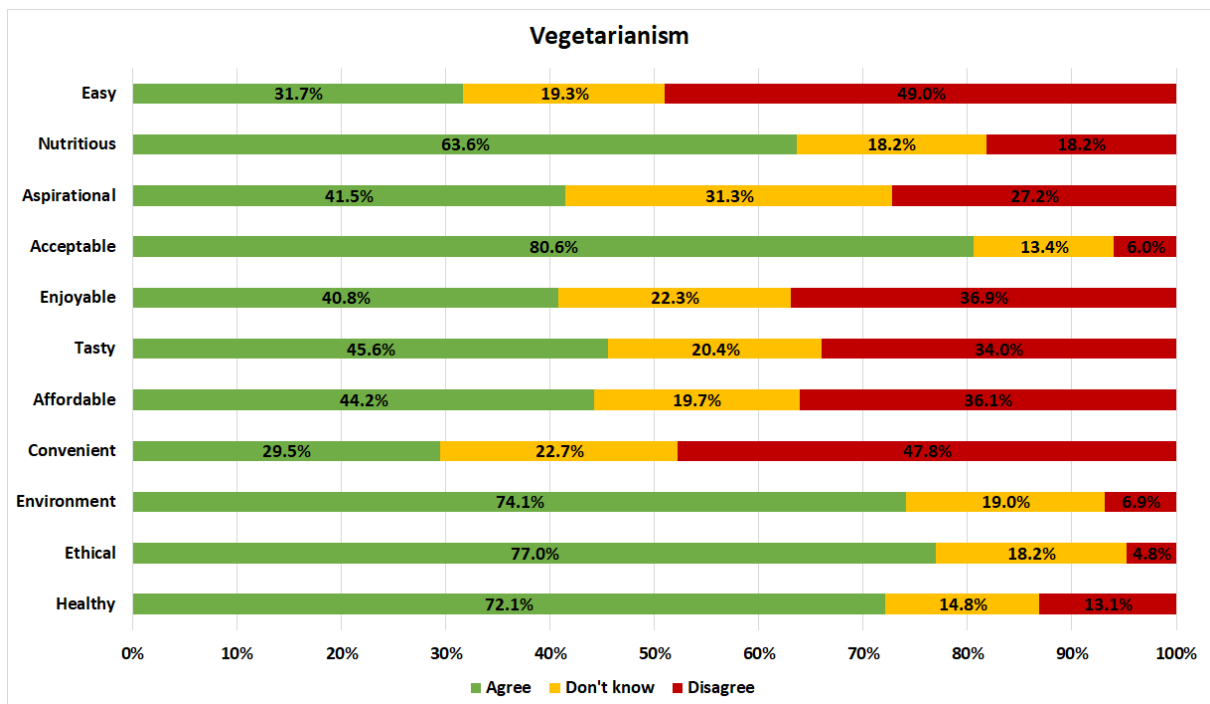
Just 23% of UK meat-eaters think veganism is affordable. This is reflected in other survey data, including Humane League Labs (2014), which found that this was one of the most common reasons given by people who want to go vegetarian or vegan but haven't. Similarly, a recent UK survey found that the high price of meat substitutes was the second most common reason not to go vegetarian or vegan (The Independent, 2017).

It is unclear whether this is a reality of veganism, or just a stereotype. Certainly, some specialty vegan foods can be expensive, but staples like grains, beans and legumes are usually much cheaper than animal products.

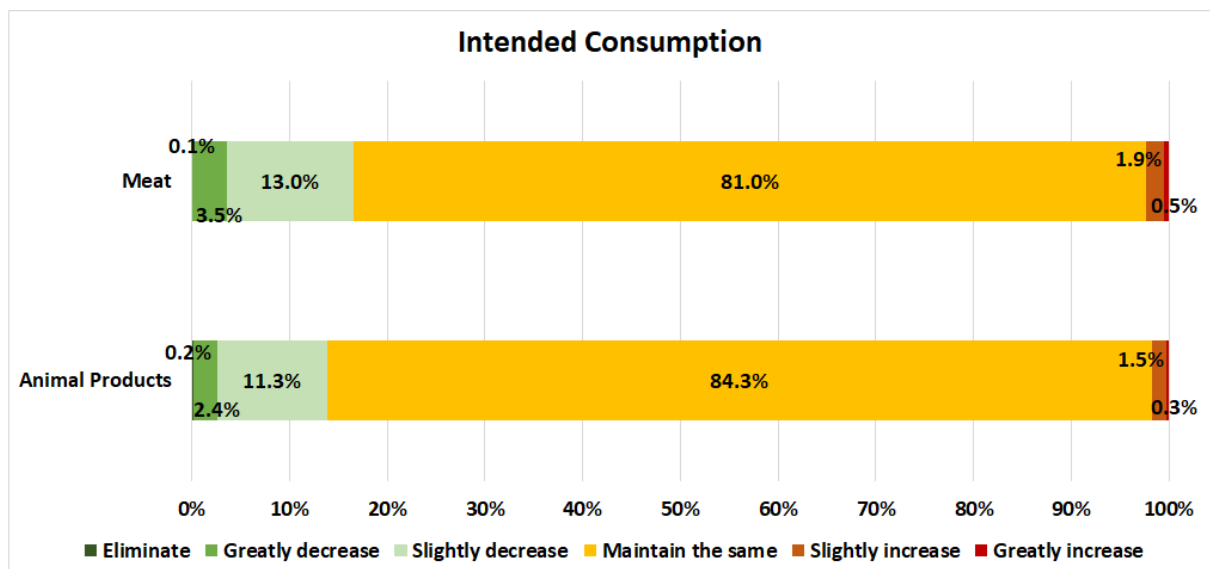
Advocates could work to overcome this perception by promoting easy low-cost vegan recipes. We should work to counter the perception of veganism as an exclusive upper-middle-class lifestyle by demonstrating that vegan food can be cheap, and is certainly accessible to all. This is especially important, since this data also shows no correlation between household income and propensity to reduce consumption of animal products.

A very similar pattern can be seen with regards to perceptions of vegetarianism. Again, there is a high rate of agreement that vegetarianism is healthy (72.1%), ethical (77.0%), and good for the environment (74.1%), whilst taste, price, and convenience remain as the highest areas of disagreement.

Interestingly, all perceptions are more positive for vegetarianism, including perceptions of health, ethics, and the environment. This probably reflects the higher cognitive dissonance people feel with regards to veganism, as they see it as further from their own diet, and more difficult to follow. Advocates could consider promoting vegetarianism as an easier-to-achieve target.



As shown here, the vast majority of meat-eaters intend to maintain about the same level of consumption of meat and animal products. However, around 16.6% (1 in 6) intend to reduce their meat consumption, and 13.9% intend to reduce their animal product consumption. Only a tiny minority intend to increase consumption of meat (2.4%) and animal products (1.8%). It should be noted, also, that rather than asking about intentions to reduce consumption generally, this survey asked how participants thought their consumption would change 'one month from today', which is a stringent measure of intentions to reduce in general.



Study 2: Social Appeals Experiment

2.1 Background

Persuading consumers to change their diets is a complex process, with many factors influencing consumers' purchasing decisions. One possible approach to vegan advocacy is to include social elements in consumer-facing appeals. When Cialdini (1984) identified six principles of persuasion, two of them involved a substantial social component.

The first is social proof. This refers to the phenomena whereby people are more likely to do something if they believe a lot of other people also do it. Goldstein, Cialdini and Griskevicius (2008) demonstrated this phenomena in a now famous experiment investigating how different messages affected hotel guests' reuse of their towels. Some guests stayed in rooms with signs saying that reusing towels helped to save the environment, whilst others stayed in rooms with signs saying that most other hotel guests reused their towels to save the environment. Of the guests who saw the first sign, 35% reused their towels; of the guests who saw the second sign, 44% reused their towels. Social proof had led to a significant increase in a pro-environmental behaviour.

The second of Cialdini's (1984) social-based principles is authority. This refers to the idea that people generally follow the advice or behaviour of credible or esteemed people. Pease and Brewer (2008) demonstrated this effect in an experiment during the 2008 U.S. election campaigns. They gave participants one of two versions of a news article about Barack Obama; one version mentioned that Obama had been endorsed by Oprah Winfrey, whilst the other did not. The articles contained otherwise identical information. The authors found that people who read the article which included Oprah's endorsement reported being significantly more likely to vote for Obama compared to the other group.

Social factors appear to be important in dietary decisions, also. Humane League Labs (2014) reported that 35% of meat-reducers (the sample was mostly vegetarians and vegans) said that conversation with others was an important influence in their decision to reduce animal product consumption. Similarly, a 2017 UK survey found that 41% of meat-eaters said that lack of family support was a barrier to going vegetarian or vegan (The Independent, 2017). The World Resources Institute (2016) has identified 'evolving social norms' as one of the major strategies to advance veganism, which includes making it socially desirable.

This study sought to investigate the effect of two types of social influence on consumers' intentions to reduce their consumption of animal products. I wanted to test whether (a) framing veganism as an increasingly widespread social norm, and (b) discussing vegan celebrities would lead to a higher willingness to decrease consumption of animal products compared to outlining the benefits of veganism alone.

2.2 Methods

In this study, I recruited 300 UK meat-eaters aged 18 and over. Participants were recruited through the online research platform, Prolific, and each participant was paid £0.45 for 5

minutes of their time. Although recruitment was for meat-eaters only, there was a small number of vegetarians in the original dataset ($n = 6$); these participants were removed, giving a final sample size of 294. The final sample was 27% male and 73% female, and the mean age was 35.15 ($SD = 10.49$).

First, participants read some brief information about the study, and gave their consent to take part. They then read one of 3 passages. The first passage explained the health, environmental, and animal welfare benefits of veganism. The second passage included the information in the first passage, and also explained how veganism was a growing social trend. The third passage included the information in the first passage, and also discussed some vegan celebrities.

Passage 1: *“A vegan diet is one which avoids all animal products, including meat, poultry, fish, dairy, and eggs. There are a lot of great reasons to follow a vegan diet. Cutting down on animal products is one of the biggest ways you can reduce your environmental footprint. There are also substantial health benefits, since animal product consumption is linked to heart disease and certain types of cancer. There are concerns about animal welfare, too, as most food animals are subject to cruel conditions.”*

Passage 2: Text of passage 1, plus: *“In the UK, more people than ever before are turning towards veganism. It is estimated that the number of vegans has risen by 360% in the last decade. A recent survey estimated that there are now 3.5 million vegans in the UK, and market analysts say this trend is likely to continue.”*

Passage 3: Text of passage 1, plus: *“Many celebrities have recently announced that they have started following a vegan diet. Beyonce and Jay Z have endorsed the health and environmental benefits of veganism, whilst F1 driver Lewis Hamilton and tennis stars Venus and Serena Williams have adopted veganism to perfect their athletic abilities. Many other celebrities, including Liam Hemsworth, Natalie Portman, and Madonna are also reported to be vegan.”*

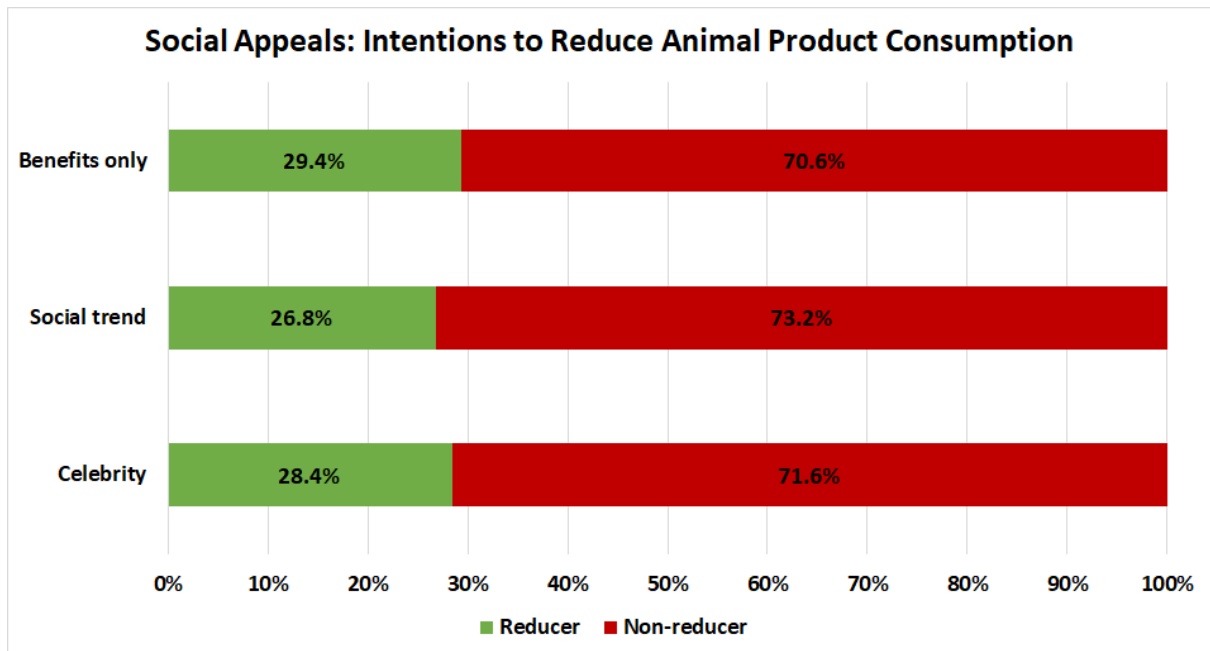
Next, participants answered a question about their intended consumption of animal products ‘one month from today’. On a 6-point scale, participants could indicate that they would eliminate, greatly reduce, slightly reduce, maintain about the same, slightly increase, or greatly increase their consumption of animal products. In addition, participants could check a box to indicate that they wanted to receive a free vegan starter guide. Similar measures have been used in previous effective animal advocacy research (Mercy For Animals, 2017; Humane League Labs, 2017b).

Finally, participants gave demographic information, including their age, gender, political orientation, education, and income. Participants were then debriefed and compensated.

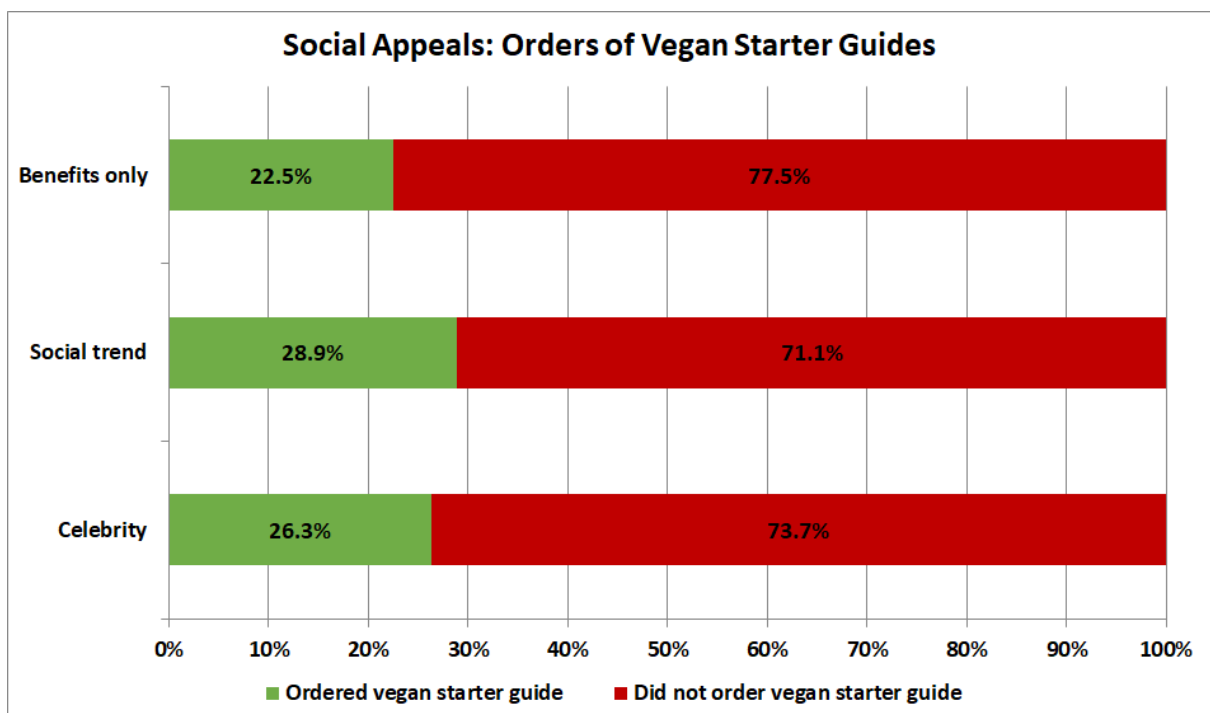
2.3 Results & Discussion

The overwhelming majority (95.2%) of participants indicated that they would either maintain about the same amount of animal products in their diet, or slightly decrease animal products in their diet. Therefore, I coded those who said they would reduce or eliminate animal products

in their diet as 'reducers', and those who said they would maintain or increase animal products in their diet as 'non-reducers'.



As shown here, there was very little difference between conditions in terms of the proportion of respondents saying they would reduce animal products in their diet. Less than 3% difference was observed between the rate of reducers in each condition, and a Chi square analysis indicates that this result was not statistically significant ($\chi^2 = .169, p = .919$).



The differences in the number of people who ordered the vegan starter guide was slightly larger, but still did not exceed 6.4%. As shown here, slightly more people ordered the vegan

starter guide in the social trend condition, however this result was, again, not statistically significant ($\chi^2 = 1.051, p = .591$).

The addition of social information made no significant difference to the number of people intending to reduce their animal product consumption or ordering a vegan starter guide. However, some of these results are still cause for optimism. In the sample overall, 28.2% said they would reduce their consumption of animal products 'one month from today'. This is likely a reasonably stringent measure of intention to reduce animal product consumption: rather than asking about some time in the future, participants were committed to a one month timeline. Moreover, 25.9% of all participants indicated that they wanted to receive a free vegan starter guide.

These figures are roughly in line with recent research by Waitrose (2018), which found that 21% of UK consumers are cutting down their meat consumption (in addition to 12% who identified as vegetarian or vegan). Though no differences were found between experimental conditions, interest in reducing animal product consumption appears substantial.

There are some limitations of this study to be addressed. Firstly, women were over-represented in the sample due to their over-representation on the research platform. In subsequent studies, I corrected for this by having gender quotas in the recruitment phase. Secondly, there were more men and more right-wing participants in the celebrity condition. Though statistical analyses indicate that these differences were not significant, these are characteristics associated with less inclination towards veganism, and therefore cannot be ignored. Thirdly, it is possible that the three conditions were too similar to make a difference to participants. I discussed the conventional benefits of veganism (animals, health, and the environment) in all three passages, and added information in the second and third passage. It is possible that greater differences would be observed if the second and third passages focused on the social trend/celebrity aspects only, and did not repeat the text in the first passage.

Overall, the results in each condition of this experiment were remarkably similar. Whilst there were some limitations to this study which could have affected results, we cannot conclude that information about veganism as a social or celebrity trend results in higher intentions to reduce animal product consumption. Overall, however, there was a reasonably high willingness to reduce animal product consumption across conditions, and a good deal of interest in receiving a vegan starter guide.

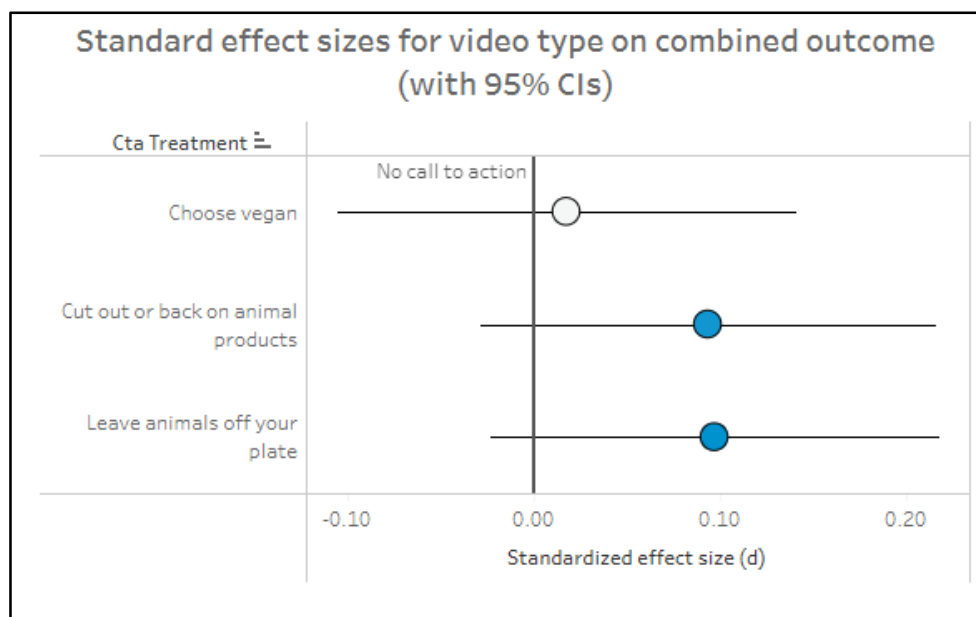
Study 3: Calls to Action Experiment

3.1 Background

Veganism campaigns are often accompanied by a call to action (e.g. 'Go vegan!') It is reasonable to think that different calls to action might result in different responses from the public - for example, 'Go vegan!' might seem to be a very difficult ask, whereas 'Try vegan!' may seem more achievable, and therefore result in higher engagement.

Previous studies have investigated this proposition in American samples. Humane League Labs (2017a) gave students one of four pieces of advocacy literature. The literature varied its call to action between 'Eat vegan', 'Eat vegetarian', 'Eat less meat', and 'Cut out or cut back on meat'. The authors found no significant differences between the different conditions, though they note several substantial methodological shortcomings, meaning the study was inconclusive.

In a similar study conducted online, Mercy For Animals (2017b) tested the effect of three different messages on American consumers' attitudes and intentions to reduce meat consumption. Participants watched videos with the calls to action, 'Please choose vegan', 'Please leave animals off your plate', or 'Please cut out or cut back on animal products'. Whilst this study also found no statistically significant differences, it did show greater impact for the latter two messages compared to 'Please eat vegan', as shown here:



Source: Mercy For Animals (2017)

Finally, the Animal Welfare Action Lab (2016) tested messages asking participants online to either reduce or eliminate their meat consumption. They found that both of these messages had a significant effect on attitudes and dietary intentions compared to a control message, but there were no significant differences between the two.

Studies on this topic so far have failed to find significant differences in attitudes and diets between different calls to action. Nonetheless, further study may be warranted, since there

are some messages (such as 'Try vegan' and 'Join the vegan movement') which have not been tested. These messages, which frame a dietary change as less of a commitment and a social choice respectively, may be more compelling than a 'Go vegan' message. Moreover, studies thus far have tested messages which may not be acceptable to a vegan organisation. For example, some organisations would not use the messages 'Go vegetarian' or 'Cut down on meat', since these still tacitly endorse animal product consumption. Finally, these studies have all used a US sample, and we may see different patterns of results in the UK.

This study sought to investigate the effects of different calls to action on consumers' intentions to reduce their consumption of animal products. I wanted to test for differences in dietary intentions between groups who saw the calls to action, 'Go vegan', 'Try vegan', and 'Join the vegan movement'.

3.2 Methods

In this study, I recruited 300 UK meat-eaters aged 18 and over. Participants were recruited through the online research platform, Prolific, and each participant was paid £0.45 for 5 minutes of their time. Although recruitment was for meat-eaters only, there was a small number of vegetarians in the original dataset ($n = 11$); these participants were removed, giving a final sample size of 289. The final sample was 50% male and 50% female, and the mean age was 33.54 (SD = 11.12).

First, participants read some brief information about the study, and gave their consent to take part. They then saw one of 3 posters. Each poster contained a recent image of an injured pig from Hogwood farm in the UK, and each had the headline 'BUYING ANIMAL PRODUCTS FUNDS ANIMAL CRUELTY.' The call to action on the poster 1 was 'Go vegan.' On poster 2, it was 'Try vegan.' On poster 3, it was 'Join the vegan movement.'

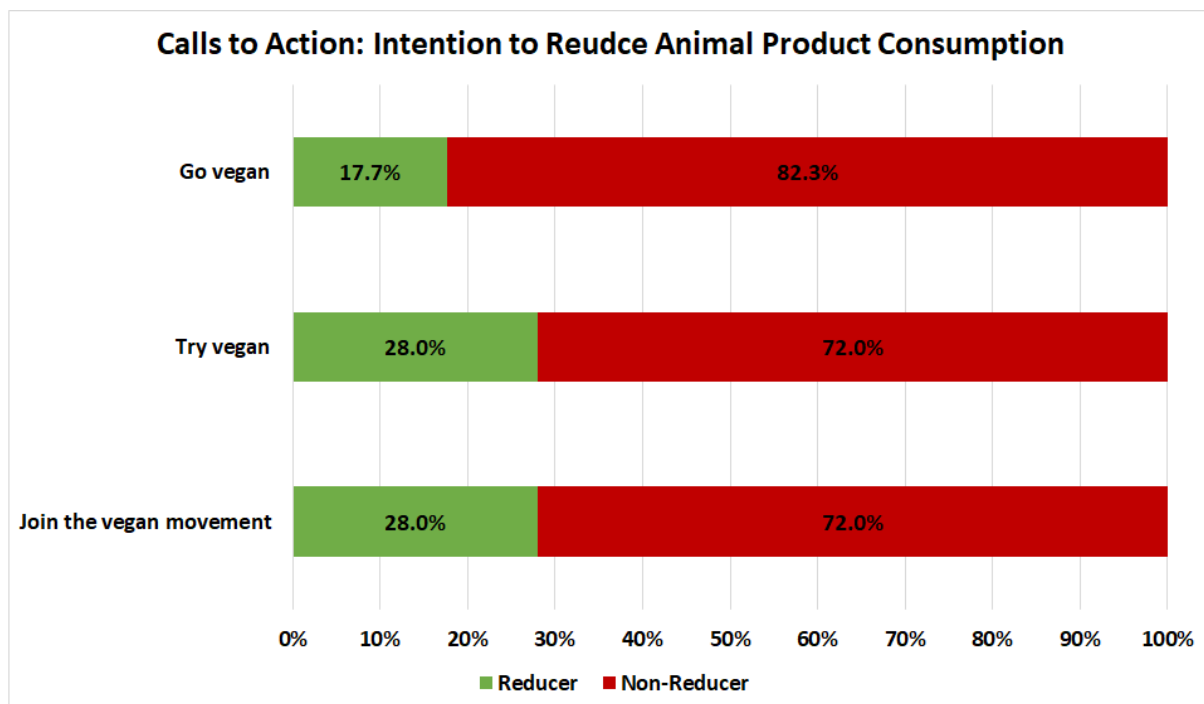


Participants answered a question about their intended consumption of animal products 'one month from today'. On a 6-point scale, participants could indicate that they would eliminate, greatly reduce, slightly reduce, maintain about the same, slightly increase, or greatly increase their consumption of animal products. In addition, participants could check a box to indicate that they wanted to receive a free vegan starter guide. Similar measures have been used in previous effective animal advocacy research (Mercy For Animals, 2017b; Humane League Labs, 2017b).

Finally, participants gave demographic information, including their age, gender, political orientation, education, and income. Participants were then debriefed and compensated.

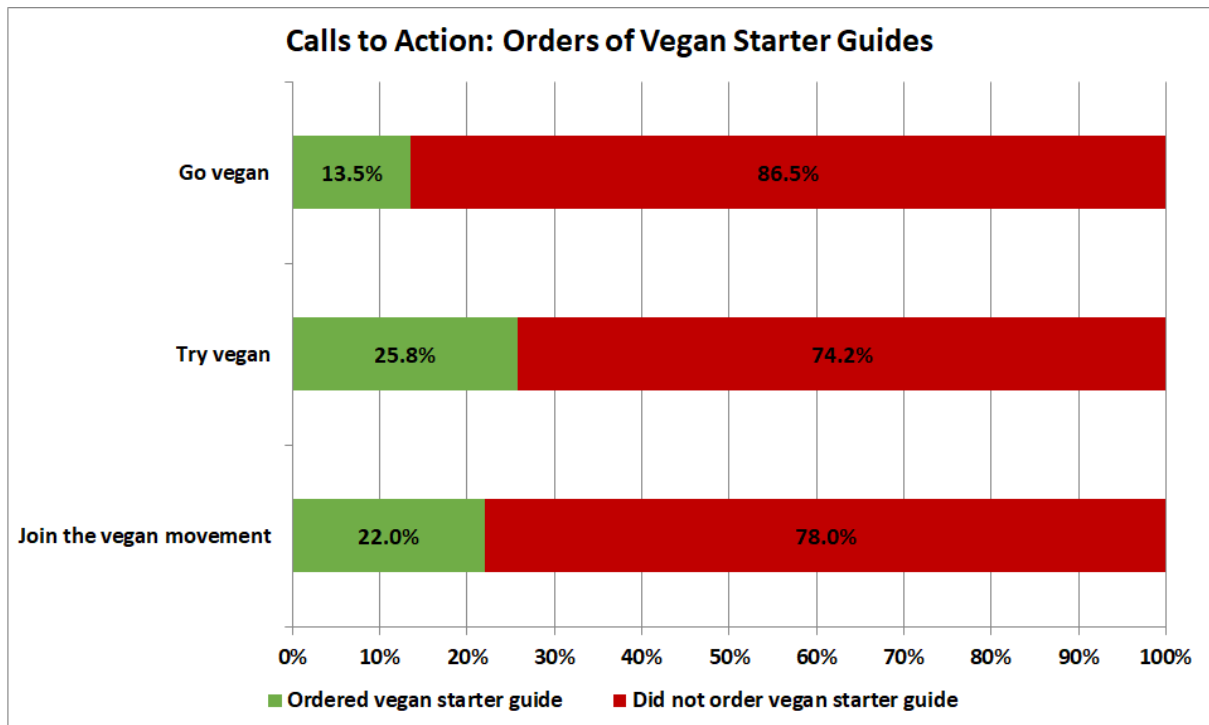
3.3 Results & Discussion

The overwhelming majority (92.4%) of participants indicated that they would either maintain about the same amount of animal products in their diet, or slightly decrease animal products in their diet. Therefore, I coded those who said they would reduce or eliminate animal products in their diet as 'reducers', and those who said they would maintain or increase animal products in their diet as 'non-reducers'.



As shown in the graph above, there was a 10.3% increase in intentions to reduce animal product consumption for those who saw the 'Try vegan' and 'Join the vegan movement' messages compared to those who saw the 'Go vegan' message. Statistical tests indicate that this difference is not statistically significant ($\chi^2 = 3.650$, $p = .161$), though it is much larger than the differences observed in the previous experiment. This is a substantial difference, and may have been statistically significant given a larger sample size (Cohen, 1992).

We can observe a similar pattern of results with regards to participants ordering the vegan starter guide. Again, we see a substantial jump from 'Go vegan' to 'Try vegan' of 12.3%, and from 'Go vegan' to 'Join the vegan movement' of 8.5%. The statistical effect here was even larger ($\chi^2 = 4.610$, $p = .100$), though still did not reach significance. Again, it is likely that this difference would be significant given a larger sample size.



The results of this study largely replicate those of similar studies, which found a 'Choose vegan' message to be less effective than alternative phrasings, though not significantly different (Mercy For Animals, 2017b). This study used the word 'vegan' in every condition, which Mercy For Animals (2017b) did not; in fact, the messages which seemed to be more effective in that study were the ones which did not mention veganism.

This study found some support for the idea that lower commitment or socially framed messages may be more persuasive to consumers compared to a simple 'Go vegan' message. Notably, all the messages in this study are acceptable to vegan organisations which do not wish to endorse meat reduction or vegetarianism. It could be that a combination of these messages, such as 'Try tasty plant-based dishes' would be more effective still.

Study 4: Menu Labelling Experiment

4.1 Background

As well as persuading consumers to reduce their consumption of animal products, advocates are increasingly exploring interventions which could nudge people towards consuming less animal products in other ways.

One such method which has been suggested is removing 'Vegetarian' and 'Vegan' labels from vegetarian and vegan foods (Food Navigator, 2018a). These labels, whilst useful for vegetarians and vegans, might signal to meat-eaters that these dishes are not for them. A recent survey of 2,200 US consumers found that 'vegan' was the least appealing food label tested (Morning Consult, 2018). Just 17% said this label would make a food more appealing, whilst 35% said it would make a food less appealing.

Highlighting vegetarian and vegan products in this way may therefore be causing more people to choose animal products. Indeed, there is some evidence for this. Bacon and Krpan (2018) tested the effect of different menu layouts on the proportion of people choosing vegetarian options. The menus all had the same options, and online participants were asked to choose one. One of the four menu designs they tested had the vegetarian options isolated in a 'Vegetarian' section. Participants who saw this menu were 56% less likely to choose vegetarian options compared to participants who saw versions of the menu where vegetarian options were simply marked with a 'V'. Bruce Friedrich of The Good Food Institute has speculated that removing the 'V' labels would have increased selection of vegetarian options even further (Food Navigator, 2018a).

However, there is concern that this would make life harder for vegetarians and vegans, since they would not be able to easily identify food they can eat. Indeed, Humane League Labs (2014) reported that a lack of vegan options when eating out was the factor which made it most difficult to stick to veganism. Failing to highlight vegan options on menus might, therefore, have detrimental effects on the number of vegans long-term. There is an alternative: using the label 'plant-based'. This is an idea which has gained some traction in the animal advocacy community to make the lifestyle more appealing to those who are put off by the term 'vegan'. A recent survey found that the label '100% Plant-based' was perceived as better tasting and healthier than the label 'Vegan' (Food Navigator, 2018b). In fact, American consumers preferred the '100% Plant-based' label on every measure in the survey.

This study sought to assess the effect of different menu labels on the proportion of vegetarian and vegan selection in a mock menu. I wanted to test whether (a) 'P' for plant-based and 'M' for meat-free labels, and (b) no labels resulted in higher rates of selection of vegetarian and vegan options compared to 'V' for vegetarian and 'Ve' for vegan.

4.2 Methods

In this study, I recruited 300 UK meat-eaters aged 18 and over. Participants were recruited through the online research platform, Prolific, and each participant was paid £0.45 for 5

minutes of their time. Although recruitment was for meat-eaters only, there was a small number of vegetarians in the original dataset ($n = 4$); these participants were removed, giving a final sample size of 296. The final sample was 49% male and 51% female, and the mean age was 33.50 (SD = 12.47).

First, participants read some brief information about the study, and gave their consent to take part. They then saw one of three menus, and were asked to indicate which dish they would order. Each menu contained the same options: three vegan, three vegetarian, and three meat. In the first menu, vegetarian options were labelled (V), and vegan options were labelled (Ve). In the second menu, vegetarian options were labelled (m) (for meat-free) and vegan options were labelled (p) (for plant-based). In the third menu, vegetarian and vegan options were not labelled. The order of dishes was randomised for each participant to control for order effects.

Finally, participants gave demographic information, including their age, gender, political orientation, education, and income. Participants were then debriefed and compensated.

Menu 1 with (v) / (ve) labels

~ Menu ~

(v) = vegetarian (ve) = vegan

- ☐ **Penne Arrabiata (ve)**
Penne pasta with a rich tomato sauce flavoured with basil, garlic, and chilli.
- ☐ **Mushroom Stroganoff (ve)**
A rich mushroom stew cooked in vintage cider. Served with seasonal vegetables.
- ☐ **Spicy Bean Burritos (ve)**
Mexican burritos with rice and mixed beans cooked in a chilli sauce.
- ☐ **Spaghetti Bolognese**
Spaghetti served with a classic minced beef, onion, and tomato sauce.
- ☐ **Pork Chops**
Seared pork chops served with potatoes and seasonal vegetables.
- ☐ **Chicken Korma**
Chicken breast cooked in a mild creamy curry sauce. Served with steamed rice.
- ☐ **Three Cheese Ravioli (v)**
Italian pasta filled with ricotta, mozzarella, and parmesan. Served with a creamy sauce.
- ☐ **Vegetable Chow Mein (v)**
Egg noodles stir fried in a traditional Chinese sauce with mushrooms and pak choi.
- ☐ **Roasted Vegetable Quiche (v)**
Traditional quiche with a courgette, spinach, and onion filling. Served with a garden salad.

Menu 2: (m) / (p) labels

~ Menu ~

(m) = meat-free (p) = plant-based

- ☐ **Penne Arrabiata (p)**
Penne pasta with a rich tomato sauce flavoured with basil, garlic, and chilli.
- ☐ **Mushroom Stroganoff (p)**
A rich mushroom stew cooked in vintage cider. Served with seasonal vegetables.
- ☐ **Spicy Bean Burritos (p)**
Mexican burritos with rice and mixed beans cooked in a chilli sauce.
- ☐ **Spaghetti Bolognese**
Spaghetti served with a classic minced beef, onion, and tomato sauce.
- ☐ **Pork Chops**
Seared pork chops served with potatoes and seasonal vegetables.
- ☐ **Chicken Korma**
Chicken breast cooked in a mild creamy curry sauce. Served with steamed rice.
- ☐ **Three Cheese Ravioli (m)**
Italian pasta filled with ricotta, mozzarella, and parmesan. Served with a creamy sauce.
- ☐ **Vegetable Chow Mein (m)**
Egg noodles stir fried in a traditional Chinese sauce with mushrooms and pak choi.
- ☐ **Roasted Vegetable Quiche (m)**
Traditional quiche with a courgette, spinach, and onion filling. Served with a garden salad.

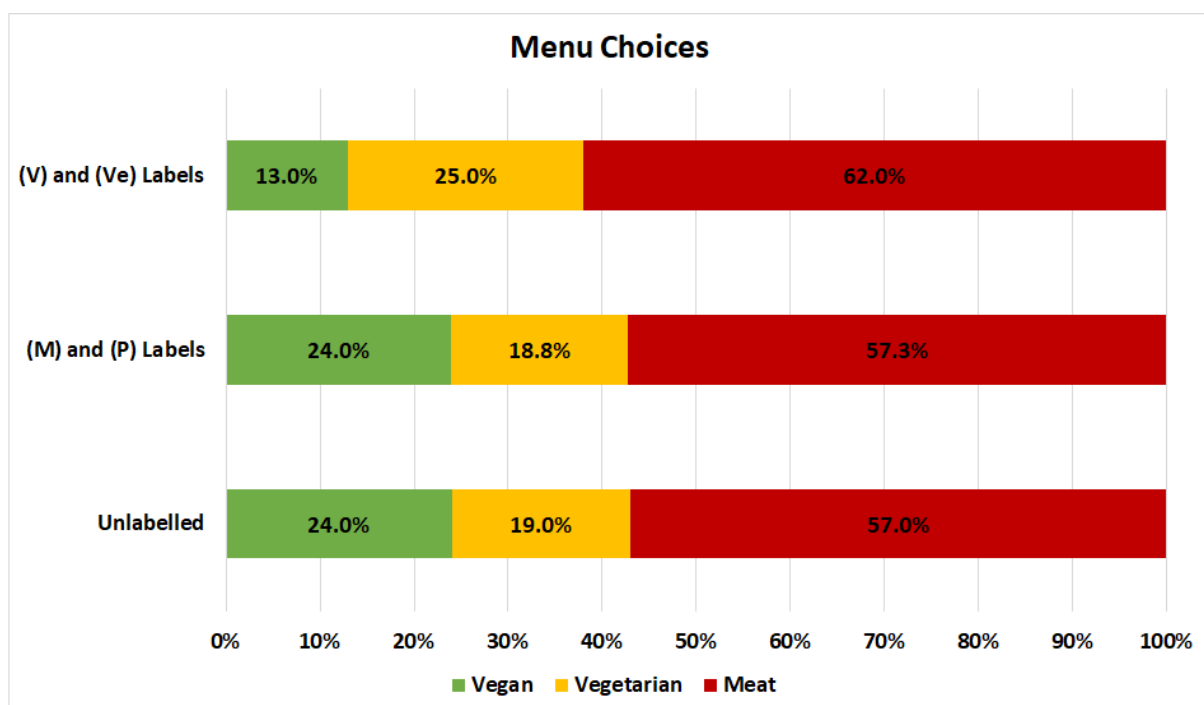
Menu 3: Unlabeled

~ Menu ~

- ☐ **Penne Arrabiata**
Penne pasta with a rich tomato sauce flavoured with basil, garlic, and chilli.
- ☐ **Mushroom Stroganoff**
A rich mushroom stew cooked in vintage cider. Served with seasonal vegetables.
- ☐ **Spicy Bean Burritos**
Mexican burritos with rice and mixed beans cooked in a chilli sauce.
- ☐ **Spaghetti Bolognese**
Spaghetti served with a classic minced beef, onion, and tomato sauce.
- ☐ **Pork Chops**
Seared pork chops served with potatoes and seasonal vegetables.
- ☐ **Chicken Korma**
Chicken breast cooked in a mild creamy curry sauce. Served with steamed rice.
- ☐ **Three Cheese Ravioli**
Italian pasta filled with ricotta, mozzarella, and parmesan. Served with a creamy sauce.
- ☐ **Vegetable Chow Mein**
Egg noodles stir fried in a traditional Chinese sauce with mushrooms and pak choi.
- ☐ **Roasted Vegetable Quiche**
Traditional quiche with a courgette, spinach, and onion filling. Served with a garden salad.

4.3 Results & Discussion

Participants' choices were coded as vegan, vegetarian, or meat. Comparing the selection of each type of dish between conditions, we can see that selection of vegan dishes was substantially higher for the (P)/(M) and unlabeled menus compared to the (V)/(Ve) menu. In each case, selection of vegan dishes rose by 11%. Notably, however, the majority of this gain in vegan selections seems to have come at the expense of vegetarian, rather than meat dishes. Selection of meat dishes also fell for the (P)/(M) and unlabeled menus, but only by 4.7%-5%. Statistical tests indicate that these differences were not significant ($\chi^2 = 5.319$, $p = .249$), though when considering selection of vegan options only, the results approach significance ($\chi^2 = 4.939$, $p = .085$). It is likely that this result would have been significant ($p < .05$) with a larger sample size.



Across all conditions, selection of vegetarian and vegan options was surprisingly high, with 41.2% of all participants opting for meat-free choices. This is likely higher than we would see with a real restaurant menu, because a higher proportion of the options here were vegetarian or vegan compared to a typical menu.

These results are consistent with previous research which has shown consumer aversion to the word 'vegan' (Food Navigator, 2018b; Morning Consult, 2018). Based on these results, animal advocates should consider encouraging restaurants and retailers to adopt the label 'plant-based' rather than 'vegan'. Consistent with studies which have shown 'plant-based' is a more appealing label, and that 'vegan' is a widely unappealing label, this study provides some evidence that more people would choose vegan options if they are not labelled as 'vegan'.

Conclusions

Research on effective vegan advocacy is still in its relative infancy. Much of this research is unashamedly pragmatic, though there are still many lessons for hardline animal rights campaigners. Some messages are more persuasive than others, and consumers make decisions about food in a certain context, which can be changed. The objective is to make communications as persuasive as possible, and assist in designing decision contexts which minimise animal product consumption.

These studies have identified common perceived benefits and barriers to vegetarianism and veganism, demonstrated that some calls to action may be more persuasive than others, and illustrated one way to encourage more people to choose vegan food without realising it. Based on these findings, advocates should consider several courses of action.

Firstly, we should avoid using the call to action ‘Go Vegan’, instead using ‘Try Vegan’, ‘Join the Vegan Movement’, or other calls to action which avoid the term ‘vegan’ altogether. It is possible that the less imperative tone of the latter messages led to a more receptive and less defensive audience. In any case, the proportion of people who saw the message and intended to reduce their animal product consumption increased by over 10%. This is a substantial increase in message effectiveness, and could make campaigns more effective.

Secondly, we should encourage restaurants and retailers to use the label ‘plant-based’ instead of the label ‘vegan’ in order to encourage more omnivorous consumers to choose vegan options. Nudging some food choices of many omnivores may cause a far greater reduction in animal suffering compared to getting a small number of omnivores to go vegan altogether. Insofar as restaurants and retailers are interested in encouraging consumers to choose vegan options, labelling them ‘vegan’ is a poor strategy.

Finally, we should do what we can to address the major barriers to veganism of taste, convenience, and price. This might include promoting tasty vegan foods (especially direct replacements for non-vegan foods), publicising restaurants with vegan options (e.g. through My Vegan Town), and promoting low-cost vegan options. Most meat-eaters agree that veganism is healthy, ethical, and good for the planet, though continuing to press those key messages (particularly of animal cruelty) will also be important to changing behaviour for some consumers.

References

- Animal Welfare Action Lab. (2016). *The effects of “reduce” and “eliminate” appeals on individual meat consumption*. Accessed 06 November 2018 at <https://osf.io/nrx3/>
- Bacon, L., & Krpan, D. (2018). (Not) Eating for the environment: The impact of restaurant menu design on vegetarian food choice. *Appetite*, 125, 190-200.
- Cialdini, R. B. (1984). *Influence: How and why people agree to things*. New York: Quill.
- Cohen, J. (1992). A power primer. *Psychological bulletin*, 112(1), 155.
- Corrin, T., & Papadopoulos, A. (2017). Understanding the attitudes and perceptions of vegetarian and plant-based diets to shape future health promotion programs. *Appetite*, 109, 40-47.
- Faunalytics. (2018). *Attitudes Toward Farmed Animals in the BRIC Countries*. Available at <https://faunalytics.org/wp-content/uploads/2018/09/BRIC-Full-Report.pdf>
- Food Navigator. (2018a, January 15). *Avoid the ‘V’ word, and other tips to boost meat-free and dairy-free sales*. Accessed 06 November 2018 at <https://www.foodnavigator.com/Article/2018/01/15/Avoid-the-V-word-and-other-tips-to-boost-meat-free-and-dairy-free-sales>
- Food Navigator. (2018b, April 19). *‘Plant-based’ plays way better than ‘vegan’ with most consumers, says Mattson*. Accessed 06 November 2018 at <https://www.foodnavigator-usa.com/Article/2018/04/19/Plant-based-plays-way-better-than-vegan-with-most-consumers-says-Mattson>
- Fotopoulos, C., Krystallis, A., Vassallo, M., & Pagiaslis, A. (2009). Food Choice Questionnaire (FCQ) revisited. Suggestions for the development of an enhanced general food motivation model. *Appetite*, 52(1), 199-208.
- Goldstein, N. J., Cialdini, R. B., & Griskevicius, V. (2008). A room with a viewpoint: Using social norms to motivate environmental conservation in hotels. *Journal of consumer Research*, 35(3), 472-482.
- Graça, J., Oliveira, A., & Calheiros, M. M. (2015). Meat, beyond the plate. Data-driven hypotheses for understanding consumer willingness to adopt a more plant-based diet. *Appetite*, 90, 80-90.
- Humane League Labs. (2014). *Diet Change and Demographic Characteristics of Vegans, Vegetarians, Semi-Vegetarians, and Omnivores*. Accessed 06 November 2018 at <http://www.humaneleaguelabs.org/static/reports/2014/04/diet-change-and-demographic-characteristics1.pdf>

Humane League Labs. (2015). *Report: Which Vegan Meals Do Omnivores Find Most Appetizing and Accessible?* Accessed 08 November 2018 at <http://www.humaneleaguelabs.org/static/reports/2015/01/appetizing-vegan-food-photos-study-results1.pdf>

Humane League Labs. (2017a). *Which Request Creates the Most Diet Change: A Reanalysis.* Accessed 06 November 2018 at <http://www.humaneleaguelabs.org/static/reports/E006R02-which-request-creates-the-most-diet-change.pdf>

Humane League Labs. (2017b). *Which Leaflet is More Effective: A Reanalysis.* Accessed 06 November 2018 at <http://humaneleaguelabs.org/static/reports/E001R02-which-leaflet-is-more-effective.pdf>

Humane League Labs. (2018). *We are the research arm of The Humane League.* Accessed 23 November 2018 at <http://www.humaneleaguelabs.org/>

Januszewska, R., Pieniak, Z., & Verbeke, W. (2011). Food choice questionnaire revisited in four countries. Does it still measure the same?. *Appetite*, 57(1), 94-98.

Lea, E., & Worsley, A. (2002). The cognitive contexts of beliefs about the healthiness of meat. *Public Health Nutrition*, 5(1), 37-45.

Lea, E., Crawford, D., & Worsley, A. (2006). Consumers' readiness to eat a plant-based diet. *European Journal of Clinical Nutrition*, 60(3), 342-351.

Mercy For Animals. (2017a). *Which Kinds of Pro-Vegetarian Videos are Best at Inspiring Changes in Diets and Attitudes?* Accessed 27 November 2018 at <https://mercyforanimals.org/kinds-of-viral-videos-are-best-at-inspiring>

Mercy For Animals. (2017b). *Which Call to Action Should We Use in Pro-Vegetarian Videos?* Accessed 06 November 2018 at <https://mercyforanimals.org/which-call-to-action-should-we-use-in-pro>

Morning Consult. (2018). *Consumer Trends in the Food and Beverage Industry.* Accessed 06 November 2018 at <https://morningconsult.com/wp-content/uploads/2018/05/Morning-Consult-Consumer-Trends-In-The-Food-and-Beverage-Industry.pdf>

Pease, A., & Brewer, P. R. (2008). The Oprah factor: The effects of a celebrity endorsement in a presidential primary campaign. *The international journal of press/politics*, 13(4), 386-400.

Rivis, A., & Sheeran, P. (2003). Descriptive norms as an additional predictor in the theory of planned behaviour: A meta-analysis. *Current Psychology*, 22(3), 218-233.

Sentience Institute. (2018). *3 Big Changes We Need in the Farmed Animal Movement.* Available at <https://www.sentienceinstitute.org/blog/three-big-changes>

Step toe, A., Pollard, T. M., & Wardle, J. (1995). Development of a measure of the motives underlying the selection of food: the food choice questionnaire. *Appetite*, 25(3), 267-284.

The Independent. (2017, August 7). *Aggressive vegans are putting a quarter of Britons off vegetarianism, finds study*. Accessed 06 November 2018 at <https://www.independent.co.uk/life-style/food-and-drink/vegans-aggressive-british-people-turn-off-vegetarianism-meat-dairy-study-a7880251.html>

Vanhonacker, F., Van Loo, E. J., Gellynck, X., & Verbeke, W. (2013). Flemish consumer attitudes towards more sustainable food choices. *Appetite*, 62(1), 7-16.

World Resources Institute. (2016). *Shifting Diets for a Sustainable Food Future*. Accessed 06 November 2018 at https://wriorg.s3.amazonaws.com/s3fs-public/Shifting_Diets_for_a_Sustainable_Food_Future_1.pdf?_ga=2.72956570.843212061.1541518332-248640317.1534420558

Waitrose. (2018). *Food and Drink Report 2018-19: The Era of the Mindful Consumer*. Accessed 07 November 2018 at <https://www.waitrose.com/content/dam/waitrose/Inspiration/Waitrose%20&%20Partners%20Food%20and%20Drink%20Report%202018.pdf>