The Impact Of Diet & Different Animal Advocacy Tactics

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Planting Seeds: The Impact Of Diet & Different Animal Advocacy Tactics

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Background

Many different approaches to advocacy exist within the animal protection movement, from talking to people you know about animal suffering, to sharing social media posts, to protesting in public spaces. Currently, we do not fully understand how these approaches affect people’s behaviors, beliefs, and attitudes towards farmed animals, or even how common they are.

We conducted two studies in the U.S. to address this topic as fully and accurately as possible. The first was a retrospective survey. It explored people’s experiences with different advocacy types within the last five years and measured their current behaviors and attitudes. This tells us how common animal advocacy is from the average person’s perspective and whether previously experiencing animal advocacy is associated with positive behavior and attitude changes towards farmed animals over the long-term. However, we can’t necessarily assume that animal advocacy caused those behaviors and attitudes from a study like this. To assess people’s perceptions of what is most impactful, we also directly asked them whether their most recent experience with animal advocacy changed any of their behaviors.

The second study was an experiment, which lets us be surer about causal direction (i.e., whether advocacy caused behavioral and attitudinal changes or instead, whether people with pro-animal behaviors or attitudes sought out advocacy). Here, we investigated the impact of many types of animal advocacy against a control condition on people’s immediate behaviors and attitudes towards farmed animals.

The ultimate goal of this project was to estimate how successful each advocacy type is across both the short- and long-term. While the retrospective survey gives us insightful information about what people think caused them to change their behavior and allows us to consider a wider range of advocacy types, the experiment provides stronger evidence of whether animal advocacy actually changes behavior, in a controlled setting with less opportunity for bias.

Key Findings

1. News articles and social media posts reduced self-reported animal product consumption for people who identify as part of a meat-avoiding group, but not for full meat-eaters (omnivores). Meat-avoiders (reducetarians, pescetarians, and vegetarians) ate 1.3 to 2.3 fewer weekly servings of animal products after reading a social media post or news article about farmed animal welfare compared to those in the control group. Meat-eaters’ diets were unaffected by these forms of advocacy.
2. **Protests showed inconsistent but troubling backfire effects for both meat-eaters and meat-avoiders, with disruptive protests causing more issues.** On average, meat-eaters reported 0.6 more weekly servings of animal products after watching a disruptive protest compared to those in the control group. Neither disruptive nor non-disruptive protests had any effect on meat-eaters’ general support for farmed animal welfare or willingness to sign a welfare petition. Further, while meat-avoiders tend to be more supportive of welfare improvements (71% in the control group signed a welfare petition), significantly fewer meat-avoiders (44-50%) signed the petition after watching either a disruptive or non-disruptive protest. Protests also had no effect on meat-avoiders’ diets or general support for farmed animal welfare. We discuss possible reasons for the backfire effects in the Overall Conclusions section of the report.

3. **Whether someone is a meat-eater or a meat-avoider also influences how they respond to advocacy, which in turn predicts their likelihood to take a diet pledge and to sign a petition.** As expected, meat-eaters were more likely than meat-avoiders to be angry in response to animal advocacy, to perceive it as more condescending and misleading, and less clear, engaging, and informative. In turn, the people who react the most negatively are the least likely to sign a petition supporting welfare improvements and to take a diet pledge. See Recommendation #6 for how advocates can consider such reactions when designing their advocacy tactics.

4. **Educational information about animal welfare labels didn’t change people’s intentions to purchase animal products with or without a welfare label.** We had suspected that educational information about the meaning of welfare labels might increase purchase intentions for products with them and decrease purchase intentions for those without. However, the purchase intentions of meat-eaters and meat-avoiders who read educational information were no different than the control group.

5. **People’s support to sign a welfare petition was influenced by the species targeted.** Participants were less likely to sign a petition supporting fish welfare improvements (45% of participants in the fish condition) compared to one about farmed animals in general (52% of participants in the mix of farmed animals condition).

6. **41% of individuals who had experienced animal advocacy claimed that it influenced them to reduce their animal product consumption, with rates ranging from 24% for celebrity endorsements to 72% for reading a book about animal suffering.** There were similarly high claims and wide ranges for other effects. Overall, books, meat-free challenges, classroom education, and documentaries appeared to be most effective on the basis of self-report. However, these percentages are probably substantially inflated because participants had to remember their advocacy experiences to report their effects. In the case of experiences like books and challenges, the percentages may also be higher because people must choose to engage with them (see Conclusions section under Study 1). These results are most useful to provide a rough
idea of the relative effectiveness of different advocacy tactics under optimal circumstances with an engaged audience.

7. Different animal advocacy methods were similarly effective across racial and ethnic groups, but some baseline differences point to the need for a deeper understanding. Our experiment found no evidence that the relative effectiveness of different advocacy methods was any different for Black (n = 170 participants) or Hispanic/Latinx participants (n = 180), so the recommendations below also apply for advocates working in those communities. However, advocates should bear some baseline differences in mind: Hispanic or Latinx participants showed several more pro-animal behaviors and attitudes than the overall average, while Black participants showed fewer. However, both of these groups ate a similar amount of animal products as the overall sample. These findings suggest differences in challenges, constraints, and opportunities by community makeup, but please see the Overall Conclusions for more detailed implications.

Recommendations

For the full set of recommendations regarding the different forms of animal advocacy, please see Table 7 on the Overall Conclusions section.

1. The results of this project primarily support the use of two forms of advocacy: social media posts and news articles. Social media posts and news articles effectively reduced self-reported animal product consumption in meat-avoiders and had no harmful effects on meat-eaters. They are also easier to implement and are lower cost than many other strategies, so we unconditionally recommend their use. If it would decrease costs, organizations could also consider targeting posts toward reducetarians and vegetarians rather than trying to persuade a general audience.

2. We also recommend forms of animal advocacy that were described as behavior-changing by people in Study 1 and that have been supported by causal evidence in other experiments: classroom education and meat-free challenges. 58% and 63% of our participants who had experienced these forms of advocacy reported reduced animal product consumption, respectively, and other research supports this claim (see the Overall Conclusions section).

3. We weakly recommend forms of advocacy that positively impacted meat-eaters’ intentions or beliefs, but had no impact on behavior: graphic videos, leaflets, non-graphic videos, and celebrities. Our experiment did not find any impact of these forms of advocacy on behaviors, which is a substantial downside. However, if they can be made cost-effectively, swaying meat-eaters’ intentions or beliefs may also be useful, in that it moves them one step closer to behavior change. The impact of these advocacy
types on meat-eaters’ intentions and beliefs varied so there is not sufficient space to cover them fairly here. Please see the Overall Conclusions section for more information.

4. **We recommend caution around the use of advocacy types that have not been supported by experimental data: educational information about animal welfare labels, documentaries, and billboards.** The limited experimental research to date suggests that these advocacy types don’t impact people’s behaviors, with some evidence suggesting a positive impact on intentions only for documentaries and educational information. But we encourage additional experimental research for these three advocacy types since our caution is based on limited research.

5. **The limited evidence from our two studies suggests that protests aren’t helpful, and may in some cases cause harm.** While it’s important to note that our two studies don’t provide definitive proof of protests’ ineffectiveness by any means (and we don’t know of any other experimental research looking at them), our experiment found that disruptive protests *increased* meat-eaters’ self-reported consumption of animal products, while both disruptive and non-disruptive protests resulted in fewer petition signatures for animal welfare reforms in meat-avoiders. The accumulated evidence to date—which is minimal and would benefit from further study—leads us to believe that their impact is neutral at best, negative at worst.

6. **Advocates can ensure that their advocacy materials of any type are as impactful as possible by testing how people respond to them.** Specifically, advocates should strive to make their materials informative, engaging, and clear about the behavior change they suggest, as all of these characteristics were linked to taking a diet pledge and supporting welfare improvements. At the same time, advocates should aim to minimize perceptions of their materials as misleading, condescending, and angering, as these responses made people less willing to engage in pro-animal behavior. To support this kind of testing, we have included a simple survey and instructions for use on the Supplementary Materials section.

7. **Strong evidence about the impact of different advocacy types is still very limited, so more research is needed before making major changes to campaign or funding strategies.** Throughout the report, we have placed more weight on evidence of behavior change versus intentions or beliefs, but we recommend that advocates and funders continue to support and study advocacy types that positively impact intentions or beliefs, and continue to study all kinds of advocacy, even those that appeared to have negative implications in this research. Behavior change occurs in stages, so advocacy types that only influenced beliefs or intentions may still play a role in a long line of steps toward behavior change. And while we have strived to provide usable recommendations about all the advocacy types we considered, bear in mind that every study has its limitations, and no single report should ever be taken as definitive proof of impact.
Research Team

We are grateful to many people for their support and assistance with this project. We would like to thank Faunalytics volunteers Jennifer St. Onge and Clara Sanchez as well as former Faunalytics Research Scientist Tom Beggs for their work on the study design, and the many individuals and organizations who reviewed the study and provided feedback: the Beyond Carnism team, Daisy Freund and Melissa Thibault (ASPCA), Janosch Linkersdörfer (Humane League Labs), Meghan Lowery (Greenbaum Foundation), and David Meyer (Food Systems Research Fund). Special thanks to Ande Reisman and EBDI Consulting for their insightful review and assistance with selected findings. We are also very thankful to the Greenbaum Foundation for funding this research. Finally, we thank all of our survey respondents for their time and effort.

Method Overview

Types Of Animal Advocacy

The animal advocacy experiences that we investigated all focused on farmed animal suffering or meat reduction as their core message, but varied in their approach. In our experiment, we kept this focus as consistent as possible to maximize comparability between experimental conditions.

A list of the advocacy types studied can be found in Table 1, where we also indicate which studies they were included in. It should be noted that vegan/plant-based labels on food products were included in the first study to assess the frequency and impact of an experience that could raise a minimal amount of awareness of animal welfare issues and should be relatively common. Though we don’t consider it advocacy in the typical sense, it helps contextualize the other results.

Not all forms of animal advocacy from our first study could be experimentally tested in our second study for logistical reasons. Specifically, documentaries, peer-to-peer outreach, classroom education, meat-free challenges, and books were not feasible in a short online experiment. Therefore, we have referred to other experimental research that has focused specifically on these types of advocacy when making our recommendations above and in the Overall Conclusions.
Table 1. Types of Animal Advocacy Included

<table>
<thead>
<tr>
<th>Advocacy Type</th>
<th>Study 1</th>
<th>Study 2</th>
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<tbody>
<tr>
<td>Graphic Video</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Non-Graphic Video</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Disruptive Protest</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Non-Disruptive Protest</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Celebrity</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Ad or Billboard</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Leaflet or Flyer</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Social Media or Blog Post</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>News Article</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Educational Info About Welfare Labels</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Documentary</td>
<td>✔️</td>
<td></td>
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<tr>
<td>Peer-To-Peer Outreach (e.g., family, friend, or colleague who spoke about animal suffering/meat reduction)</td>
<td>✔️</td>
<td></td>
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<tr>
<td>Classroom Education</td>
<td>✔️</td>
<td></td>
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<tr>
<td>Meat-Free Challenge</td>
<td>✔️</td>
<td></td>
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<tr>
<td>Book</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Vegan/Plant-Based Labels</td>
<td>✔️</td>
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<tr>
<td>Control Condition</td>
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All materials used in this research are available on the Open Science Framework for both our retrospective study and our experiment.
Study 1: Retrospective Study

Method

Our first study examined the relationships between animal advocacy, behaviors, and attitudes using a retrospective, self-report method.

The survey began with questions about participants’ current behaviors and attitudes towards animals, followed by questions asking whether participants had experienced 16 different advocacy types (see Table 1) within the last five years. Each advocacy type was accompanied by three examples to ensure that people understood what we were talking about. See Figure 1 below for how this question was asked, using disruptive protests as an example. You can find the full set of example images here.

Figure 1. Example Of Survey Question Asking About An Animal Advocacy Experience
The second half of the survey narrowed in on participants who stated that they had experienced at least one of the forms of animal advocacy. They were asked whether they remembered their reaction to it and then, for those who did remember, to indicate its effect on their behaviors and attitudes. Additional details about the study procedure can be found in the Supplementary Materials.

Please note three things about this study:

1. If the percentages of advocacy’s impact on the outcome measures seem high, bear in mind that these are based on self-reports of whether an experience at least moderately affected one’s behavior or attitude, and that people aren’t always good at remembering or interpreting their own past behavior, so the percentages may be inflated.

2. The percentages may also seem high since they are based on participants who had remembered their experiences with animal advocacy (thereby excluding people who may not have been impacted by advocacy, yet couldn’t remember).

3. As such, these results are most useful to compare the effectiveness of different advocacy tactics under optimal circumstances with an engaged audience.

**Samples & Representativeness**

The final sample size was 4,155 after data cleaning (see Supplementary Materials for details), with 2,156 (52%) completing the questions about their responses to an animal advocacy experience. The overall survey margin of error was 1.5% for questions that were asked of the full sample and 2.1% for questions that were only asked of those who had experienced animal advocacy.

To ensure that this sample is as representative of the U.S. population as possible, we weighted the descriptive results, matching the full sample against U.S. population demographics for gender, age, income, region, and race/ethnicity. However, these weights did not substantially change most demographics, so we did not use weighting for any of the inferential statistics (e.g., t-tests and chi-square tests) to avoid introducing additional sources of error.

**Black & Hispanic Or Latinx Participants**

Our pre-registration also had minimum sample size targets for Black and Hispanic or Latinx participants, the goal of which was to provide data to support work with these marginalized communities who are often underrepresented in research. Overall, our sample included 306 Black and 288 Hispanic or Latinx participants, though unfortunately the proportions who recalled and answered questions about their recent animal advocacy encounters were fairly low: 45% of Black and 59% of Hispanic or Latinx participants completed those questions.
For Hispanic or Latinx participants, the overall survey margin of error was 5.8% for questions that were asked of all Hispanic or Latinx participants and 9.9% for questions that were only asked of those who had experienced animal advocacy.

For Black participants, the overall survey margin of error was 7.4% for questions that were asked of all Black participants and 11.0% for questions that were only asked of those who had experienced animal advocacy.

There is more variation because of the smaller sample sizes compared to the general population analyses. As such, the estimates reported for the Black and Hispanic or Latinx groups aren’t as precise as the full sample estimates. We also did not correct for multiple testing as we did for the general population analyses, due to the smaller sample sizes.

**Results**

This study’s pre-registration, survey instruments, analysis code, and data are available on the [Open Science Framework](https://osf.io).

For graphs with error bars, the error bars represent the 95% confidence intervals (CIs).

Also, when reading the results below, please keep in mind that our key findings and recommendations are based on the results from both studies.

**Frequency Of Experiencing Animal Advocacy**

**Full Participant Sample**

Setting aside vegan or plant-based labels, which were included as a non-advocacy benchmark and had been experienced by 83% of the U.S. population, the most frequently experienced form of animal advocacy was reading a news article about farmed animal suffering or meat reduction (59%), followed by education about animal welfare labels on animal products (52%), and social media or blog posts about meat reduction or farmed animal suffering (51%).
We also asked participants if they remembered their reaction to the animal advocacy that they had experienced, and if they did, how they came to experience it (e.g., by intentionally looking for it or coming across it randomly). These results are less central to the report and can be found in the Supplementary Materials.
**Black Participants**

Black participants had similar rates of experiencing animal advocacy to the overall sample, with news articles also being the most commonly experienced form of animal advocacy, as shown in the graph below.

**Figure 3. Percentage Of Black Participants Who Have Experienced Animal Advocacy**
Hispanic Or Latinx Participants

Similar to the overall sample, news articles were the most commonly experienced form of animal advocacy in Hispanic or Latinx participants. But rates of experiencing some forms of advocacy were substantially higher in Hispanic or Latinx participants than the overall sample, including peer-to-peer outreach, non-disruptive protests, documentaries, leaflets, and books (see Figure 4 below).

Figure 4. Percentage Of Hispanic Or Latinx Participants Who Have Experienced Animal Advocacy
Effectiveness Of Different Forms Of Animal Advocacy

In this section, we show the percentage of participants who reported that recently experiencing animal advocacy changed their behaviors or attitudes. Most outcomes were measured on a 5-point Likert scale ranging from ‘not at all’ to ‘extremely.’ The exception was a question asking whether the experience made people more or less sympathetic to animal suffering, which had response options ranging from ‘much less sympathetic’ to ‘much more sympathetic’, with ‘no effect’ at the midpoint.

We compared the averages of these scales between all advocacy types (pairwise mean comparisons) to draw rough conclusions about which forms were most effective or ineffective according to those who had experienced them. However, a lack of significant results comparing advocacy types among Black and Hispanic or Latinx participants could reflect their smaller sample sizes.

Methodological note: Per our pre-registration, p-values weren’t adjusted here so the results are used to highlight major patterns only. Pairwise comparisons for Black and Hispanic or Latinx participants were only run if there was sufficient data (n = 30) on at least two advocacy types per scale. As such, results for Black and Hispanic or Latinx participants exclude five forms of advocacy due to insufficient data: books, classroom education, leaflets or flyers, disruptive protests, and non-disruptive protests. P-values from all pairwise comparisons can be found in the Supplementary Materials.

Reducing Animal Product Consumption

Full Participant Sample
Overall, 41% of individuals who had experienced animal advocacy said that it had caused them to reduce their consumption of animal products. As shown in the graph below and supported by the pairwise mean comparisons (ps <.05), long-form advocacy types (books, meat-free challenges, classroom education, and documentaries) were described by respondents as the most effective at reducing meat consumption.

In contrast, only a quarter of people reported reduced animal product consumption from celebrities and ads/billboards. Pairwise comparisons also found that they were significantly less effective than most of the other advocacy types (ps <.05).
Black Participants
Like the overall sample, the long-form advocacy types—documentary and meat-free challenge—rose to the top. But documentaries were only significantly different from celebrities and billboards in the pairwise mean comparisons (ps <.05). Additionally, meat-free challenges were significantly different from celebrities, billboards, news articles, social media posts, and educational info about welfare labels (ps <.05).

Some key differences from the overall sample emerged too. Black participants were substantially more likely to say they had reduced animal product consumption in response to advocacy, particularly for peer-to-peer outreach, graphic videos, non-graphic videos, social media or blog posts, news articles, and educational info about welfare labels, as can be seen in the graph below.
Hispanic Or Latinx Participants

Like the overall sample, documentaries and meat-free challenges were also reported by most Hispanic or Latinx participants to reduce their animal product consumption. But, unlike the overall sample, non-graphic videos were the least likely form of advocacy to be reported by Hispanic or Latinx participants to reduce their consumption of animal products (although the difference was only statistically significant compared to documentaries, probably because of the small sample sizes).

Some key differences from the overall sample emerged too. As shown in Figure 7 below, there were substantially higher rates of Hispanic or Latinx participants reporting reduced animal product consumption after experiencing ad/billboards, celebrities, news articles, social media or blog posts, and educational info about welfare labels compared to the overall sample.
Paying More Attention To Welfare Labels

Full Participant Sample
Overall, 45% of individuals who had experienced any form of animal advocacy said that it had caused them to pay more attention to animal welfare labels. Books and classroom education were the most effective here, while celebrities and ads/billboards were reported as the least effective, as shown in the graph below. This was supported by most pairwise comparisons (ps < .05).
**Black Participants**

Like the overall sample, documentaries were reported as more effective than both celebrities and ad/billboards in increasing attention to animal welfare labels among Black participants ($p < .05$). However, there were substantially higher rates of Black participants reporting increased attention to welfare labels than the overall sample for experiencing some forms of advocacy, including documentaries and non-graphic videos, as can be seen in the figure below.
Figure 9. Attention To Animal Welfare Labels In Black Participants

Like the overall sample, meat-free challenges and documentaries were reported as more effective than celebrities in increasing attention to animal welfare labels among Hispanic or Latinx participants ($p < .05$). However, there were also substantially higher rates of Hispanic or Latinx participants reporting increased attention to welfare labels than the overall sample after experiencing meat-free challenges, ad/billboards, and celebrities, as can be seen in the graph below.
Figure 10. Attention To Animal Welfare Labels In Hispanic Or Latinx Participants

Seeking Out More Information About Farmed Animal Welfare

Full Participant Sample

Overall, 58% of individuals who had experienced any form of animal advocacy said that it had caused them to seek out more information about farmed animal welfare. Longer forms of advocacy were reported as the most impactful here: specifically books, classroom education, and documentaries. Celebrities were described as having the lowest impact, as depicted in the graph below and supported by most pairwise comparisons (ps < .05).
**Black Participants**

Unlike the overall sample, non-graphic videos were reported by most Black participants to increase information-seeking about farmed animal welfare, while educational info about welfare labels was one of the advocacy types least likely to increase information-seeking in Black participants, as shown in the graph below. But, pairwise comparisons did not find significant differences between non-graphic videos and the other forms of advocacy here.

Furthermore, there were substantially higher rates of information-seeking in Black participants than the overall sample after experiencing some advocacy types, including non-graphic videos, meat-free challenges, and social media or blog posts (see figure below).
**Hispanic Or Latinx Participants**

Like the overall sample, documentaries were reported as more effective than most other advocacy types in increasing information-seeking about farmed animal welfare among Hispanic or Latinx participants \((ps < .05)\).

Additionally, there were substantially higher rates of information-seeking in Hispanic or Latinx participants compared to the overall sample after experiencing most forms of advocacy, as shown in the graph below.
Increasing Sympathy To Animal Suffering

Full Participant Sample
Overall, 69% of individuals who experienced any form of animal advocacy said that it had caused them to be more sympathetic to animal suffering. However, unlike the other results above, watching a graphic video was the most effective here, as depicted in the graph below and also supported by all pairwise comparisons (ps <.05). The forms of advocacy described as least effective at increasing sympathy were disruptive protests and celebrities (ps <.05).
Black Participants

Like the overall sample, graphic videos were described as the most effective by Black individuals to increase their sympathy to animal suffering, which was also supported by most pairwise comparisons ($p < .05$). However, there were substantially lower rates of sympathy in Black participants compared to the overall sample after experiencing some forms of advocacy, including meat-free challenges and education about welfare labels (see graph below).
Hispanic Or Latinx Participants

Like the overall sample, graphic videos were described as the most effective by Hispanic or Latinx individuals to increase their sympathy to animal suffering, which was also supported by most pairwise comparisons ($p < .05$). However, there were substantially lower rates of sympathy in Hispanic or Latinx participants after experiencing social media or blog posts than the overall sample, as shown in the graph below.
Anger Towards Advocates

**Full Participant Sample**

This question asked participants whether experiencing animal advocacy had made them angry at the advocates (e.g., at the protesters in protests, the writers for news articles and books, the organizers of meat-free challenges, and so on).

Overall, 20% of individuals who had experienced any form of animal advocacy said that it made them angry. However, some forms of advocacy caused substantially more anger than others. As shown in the graph below and also supported by most pairwise comparisons ($p < .05$), disruptive protests caused the most anger (49%), while education about welfare labels caused the least (8%).
**Figure 17. Anger Towards Advocates**

![Bar chart showing the percentage of participants reporting anger for different advocacy types.

Note: % includes those who selected ‘moderately’, ‘very much’, or ‘extremely’

**Black Participants**

Unlike the overall sample, meat-free challenges and graphic videos were reported as the advocacy types most likely to cause anger among Black participants, despite graphic videos also being reported as causing the most sympathy (see above). While meat-free challenges weren't significantly different from all other advocacy types, graphic videos scored significantly higher in causing anger than non-graphic videos, peer-to-peer outreach, news articles, documentaries, celebrities, and educational info about welfare labels (ps <.05).

As well, there were substantially higher rates of anger reported in Black participants than the overall sample for most forms of advocacy (see figure below).
Unlike the overall sample, graphic videos were reported as the advocacy type most likely to cause anger among Hispanic or Latinx participants, but graphic videos only scored significantly higher in causing anger than non-graphic videos, peer-to-peer outreach, and educational info about welfare labels \( (p < .05) \).

Furthermore, there were substantially higher rates of anger in Hispanic or Latinx participants than the overall sample for most forms of advocacy (see figure below).
Estimating Total Effectiveness

The total effectiveness of different forms of advocacy on reducing people's animal product consumption depends on both how many people are exposed to it and what impact it has on their consumption—that is, the two previous sections combined.

While some advocacy types may be more effective than others in reducing people’s animal product consumption, their impact may be limited by their low frequency. Take long-form advocacy types as examples (i.e., books, meat-free challenges, classroom education, and documentaries). These were reported by most participants who experienced them as reducing their animal product consumption, yet they were experienced fairly rarely so their total effectiveness is low compared to other, more common experiences.

The figure below shows our best estimates of how many people in the U.S. have been influenced to reduce their animal product consumption by each form of animal advocacy we investigated.
This analysis multiplies the percentage of the population who experienced each form of advocacy in the past five years by the percentage of people who said that the experience caused at least a moderate reduction in their consumption of animal products. This bottom-line percentage is represented in the figure below.

Here we see that long-form advocacy types no longer rank as the most effective when considering their lower frequency compared to other forms of advocacy. Indeed, we estimate that 5-14% of the U.S. population would say that they have reduced their animal product consumption as a result of any of these advocacy types, compared to 23% of people who would say that they've reduced their animal product consumption from reading news articles about meat reduction or farmed animal suffering.

![Figure 20. Estimated Percentage Of U.S. Population That Has Reduced Their Animal Product Consumption](image)

It should be noted that these estimates provide only general guidance about total effectiveness. For instance, just because we estimate that currently 4% of the U.S. population has reduced their animal product consumption due to disruptive protests, that could change if resources are reallocated. However, using these figures we can see that it would take a lot more funding and
resources to put disruptive protests on par with news articles than it would for something like meat-free challenges or non-graphic videos.

Open-Ended Responses

At the end of the survey, we asked participants to tell us about influential and non-influential forms of animal advocacy that they had experienced—specifically, which aspects made them want to (or not want to) change their behavior towards farmed animals. For influential experiences, we also asked participants if anything else in the moment had made that experience particularly influential for them (e.g., if they were with friends and family, had personal motivations, etc.). We conducted a thematic analysis of the responses and we present major themes below.

Influential Forms Of Animal Advocacy

Some people said that graphic content about the conditions of factory farms (e.g., short videos, documentaries, books, articles, and social media posts) was shocking and that learning about the conditions of farmed animals was influential in changing their behavior. However, people also reported that they disliked when the content was “too” graphic. Graphic content was polarizing, with many people saying that they had stopped watching or engaging due to it being too shocking.

Many advocacy experiences that people found influential also appeared to elicit emotional reactions—people mentioned feeling sad, disgusted, or sorry for the animals upon learning about their suffering. At the same time, a few people reported that they were swayed by information presented in a more detailed, objective way (e.g., an unbiased article).

Participants also mentioned many factors that they saw as having made them more receptive towards different types of advocacy. Some of those included having a friend or family member who was a vegan or vegetarian, being an animal lover, looking to improve their health, trying plant-based alternatives, raising their own chickens, and in general spending time with farmed animals.

Non-Influential Forms Of Animal Advocacy

People more often said that animal advocacy had no effect on their behavior versus a negative effect.

However, people commonly disliked content from People for the Ethical Treatment of Animals (PETA), which may also reflect how well-known this organization is. Several individuals voiced that they thought the organization was “extreme” or “annoying,” and said it made them dismiss
PETA’s content as dishonest or over the top. Likewise, disruptive protests were described by some commenters as aggressive and one-sided, which turned off participants from wanting to engage or learn about the protest.

Many participants also disliked celebrities telling them what they should eat, frequently noting that celebrities don’t have the same concerns as regular people (e.g., the cost of food).

While some people, as noted above, found graphic content influential, it was also frequently mentioned in the opposite way, as turning people away from animal welfare issues. For example, some participants stated that they tried hard to not think about what they saw. Further, some participants who were either raised on farms or knew farmers believed that graphic videos of animal suffering are not representative of the entire industry.

Several participants mentioned that advertisements and billboards are easy to ignore. In fact, ads and billboards were almost never mentioned in response to the question about influential experiences. Content that was too dry (e.g., not enough images) was also cited as ineffective.

**Participant Characteristics**

**Demographics**

The table below shows the basic demographic characteristics of our full sample. Overall, our sample was more white than the U.S. population, and as mentioned earlier, the descriptive results were weighted against U.S. population demographics to increase representativeness.
## Table 2. Participant Demographics

<table>
<thead>
<tr>
<th>Gender</th>
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</thead>
<tbody>
<tr>
<td>Woman/Other</td>
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<tr>
<td>Man</td>
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<table>
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</tr>
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<td>25-34</td>
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<tr>
<td>35-44</td>
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<td>45-54</td>
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<td>55-64</td>
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<td>65 and Older</td>
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<td>Multi-Racial</td>
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<td>Other Race</td>
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<td>West</td>
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<tr>
<td>Northeast</td>
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<table>
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<td>$50,000 to $59,999</td>
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<td>$60,000 to $84,999</td>
<td>14.8%</td>
</tr>
<tr>
<td>$85,000 to $114,999</td>
<td>15.4%</td>
</tr>
</tbody>
</table>
**Diet**

Across the entire sample, most participants ate meat (93%), but 5% identified as vegetarian and 2% as vegan.

Please see Supplementary Materials for additional analyses that compared the proportion of vegetarians and vegans between participants who have experienced animal advocacy within the last five years versus those who haven’t.

**Speciesism**

Speciesism, which means placing more value on humans compared to other animals, was measured with six items created and validated by Caviola et al. (2018), using a 5-point Likert scale (from 1, strongly disagree, to 5, strongly agree). Speciesism was relatively low across the entire sample, with an average score of 2.42.

Please see Supplementary Materials for additional analyses that compared speciesism between participants who have experienced animal advocacy within the last five years versus those who haven’t.

**Animal Protection And Consumer Behaviors**

We asked participants whether they had participated in behaviors related to animal protection and relevant consumer behaviors within the last year.

For behaviors related to animal protection (including one that captures the opposite, animal harm), we found that out of all participants:

- 14% had gone hunting or fishing.
- 9% had donated to an organization that supports farmed animals.
- 8% had signed a petition to improve the lives of farmed animals.
- 6% had boycotted a product or brand because it harms animals or isn’t vegan.
- 3% had worked or volunteered for an organization or campaign that supports farmed animals.

For animal consumer behaviors, we found that out of all participants:

- 56% had purchased meat *without* a welfare label such as “humane” or “pasture raised”.
- 52% had purchased eggs with a welfare label such as “free range” or “cage free”.
- 52% had purchased eggs *without* a welfare label such as “free range” or “cage free”.
- 47% had eaten plant-based meat alternatives (e.g., veggie burger, Beyond sausage, tofu).
- 47% had consumed plant-based dairy products (e.g., oat milk, cashew ice cream, plant-based cheese).
- 36% had purchased meat with a welfare label such as “humane” or “pasture raised”.
- 27% had bought clothing containing an animal product (e.g., leather, wool, down).
• 15% had consumed plant-based egg substitutes (e.g., Just Egg, egg replacer, scrambled tofu).

Please see Supplementary Materials for additional analyses that compared these behaviors between participants who have experienced animal advocacy within the last five years versus those who haven’t.

**Conclusions**

**Effectiveness**

Longer forms of animal advocacy, such as reading a book, participating in a meat-free challenge, receiving classroom education, or watching a documentary, were described as having the greatest positive impacts on individuals who had experienced them. However, these advocacy forms were experienced the least frequently. With the exception of graphic footage used in documentaries, they also weren’t mentioned often in the open-ended responses about which forms of advocacy were most and least effective, which we suspect is partially due to their infrequency. Alternatively, this may also indicate that people generally seek out long-form advocacy types after they decide to change their behaviors, rather than those advocacy types providing the motivation to change.

Most importantly, the total effectiveness of long-form advocacy types was limited by their low frequency. We estimate that long-form advocacy types reduce animal product consumption in at most 5-14% of the U.S. population in a five-year period, while news articles were estimated to reduce animal product consumption in at most 25%.

Notably, Black and Hispanic or Latinx participants reported that advocacy had made them reduce their animal product consumption substantially more often than the overall sample. Hence, some forms of animal advocacy appeared more effective in changing Black and Hispanic or Latinx individuals’ short-term behaviors, including news articles and social media or blog posts.

**Negative Reactions**

Overall, 1 in 5 people (about 20%) who experienced animal advocacy reported that the experience made them angry towards the advocates. While this is a relatively small proportion, it is notable that this varied a lot by advocacy type.

Disruptive protests seemed to be the most angering, with 1 in 2 people who experienced them saying it made them angry towards the protestors, and open-ended responses describing them as aggressive and making people walk away from the cause. Non-disruptive protests, on the other hand, were only reported as angering by approximately 1 in 5 people who experienced them.
It should also be noted that Black and Hispanic or Latinx participants were substantially more likely to say animal advocacy experiences had made them angry than the overall sample. This was true for most forms of advocacy, excluding protests, books, classroom education, and leaflets.

**Limitations**

As with all studies, this one has some important caveats and limitations to bear in mind. For all of these reasons, it is important to consider the results of Studies 1 and 2 together, as their different designs compensate somewhat for one another’s limitations.

**Self-Report Bias & Error**

This study focused on self-reported experiences with different advocacy types, which may have produced overestimates of impact for a variety of reasons. Most notably, the self-serving bias—in which respondents present themselves more positively than accurately—and/or the social desirability bias—in which respondents answer questions as they believe the researchers would want to, may have overstated the effectiveness of advocacy on participants’ behaviors and attitudes. Some of the responses may also have been influenced by availability bias, a form of memory error in which more memorable experiences (for better or for worse) are more likely to be remembered and captured in the study.

The design of Study 2 helps overcome many of these biases by using an experimental design that compares the responses of participants in the advocacy conditions against participants in a control condition.

**Establishing Causation**

In this study, we asked people whether experiencing advocacy changed their behaviors and attitudes. While straightforward, this method comes with all of the biases listed above as well as a more general issue known as the introspection illusion: people aren’t very good at understanding the reasons for their own behavior. So while people may report that their meat reduction was driven by a particular advocacy experience, we can’t be entirely confident that that is true.

Study 2 also helps overcome this difficulty by using an experimental design: Randomly assigning people to a particular type of advocacy and comparing their responses against the responses of people in a control condition means that we aren’t reliant on anyone’s ability to interpret the cause of their behavior—we can observe it directly because the advocacy type is the only thing that differs between experimental conditions.
Study 2: Experiment

Method

Study 1 is valuable in understanding how often animal advocacy campaigns are experienced and remembered, and how the general public thinks about and reacts to them. However, the study relied on participants' ability to self-report the reasons for their behavior. Despite this, it's reasonable to assume that the relative effectiveness of one advocacy type (as described by participants in Study 1) compared to another would be accurate, because the limitations of self-report apply equally to all questions. But more evidence is needed to show whether any of these types of advocacy really change behavior on average, across a large group of people from the general population.

For these reasons, we designed an experiment in our second study. We removed any plea to reduce or eliminate animal products from one’s diet, in order to isolate and investigate the effect of the medium rather than message on behavior and attitude change. Participants were randomly assigned to view one of ten forms of animal advocacy (see Table 1) or to be in a control condition where no animal advocacy was shown, only a basic picture of the relevant animal or group of animals. We included three versions of each form of advocacy, focused on egg-laying hens, fishes, or a mix of farmed animals (see Figure 21 below).

Each participant viewed just one form of advocacy (e.g., a news article or a graphic video) with a message focused on just one of those groups of animals (hens, fishes, or a mix of farmed animals). Before viewing the animal advocacy or the control, we asked participants to report how many animal products they had consumed within the last week as a way to account for their baseline consumption in some analyses. Participants then viewed advocacy or the control and answered more questions immediately after viewing the advocacy or the control. Two weeks later they were asked to report how many animal products they had consumed within the last week.

See examples of the experimental materials below in Figure 22. All experimental stimuli are available here, but please note that some of this content contains graphic or upsetting content. See our pre-registration for additional details of the procedure and materials.
Figure 21. Experimental Procedure
(click here to go to interactive online version)

Experimental Procedure
(tap or mouse over the icons)
Figure 22. Examples Of Experimental Materials

A) Educational Information About Animal Welfare Labels (Egg-Laying Hen)

B) Social Media Post (Fish)

C) Control (Mix Of Farmed Animals)
Outcome Measures

We hypothesized that animal advocacy would result in more positive outcomes for animals than the control condition. We measured three key behaviors:

- Follow-up animal product consumption (measured two weeks after the experiment as the number of servings consumed of dairy, eggs, fish, seafood, chicken, turkey, pork, and beef in the past week);
- Active intentions to reduce animal product consumption: we asked them whether they would take a diet pledge or not; and
- Active support for farmed animal welfare reform: we asked them whether they would sign a petition or not.

In addition, we measured several other outcomes, including speciesism (measured on a 7-point scale from ‘strongly disagree’ to ‘strongly agree’). Please note that speciesism here was measured slightly differently than our first study which used a 5-point scale, so the results from this experiment shouldn't be interpreted as higher speciesism than the first study.

We also measured participants’ animal protection behavior intentions (measured on an 11-point probability scale from ‘no chance’ to ‘certain’) by asking them whether they intended to do any of the following behaviors in the next month (items with asterisks were considered negative): seek out more information about farm animal welfare; donate to an organization that supports farm animals; boycott a brand because it harms animals or isn't cruelty-free; work or volunteer for an organization or campaign that supports farm animals; go hunting or fishing*; and buy clothing or goods containing an animal product (leather, suede, down, fur, etc)*.

Further, we measured participants’ intentions to purchase the following items the next time they were at the grocery store (measured on an 11-point probability scale from ‘no chance’ to ‘certain’): meat with (or without) a welfare label suggesting animals were 'humanely raised' or 'pasture raised'; dairy products with (or without) a welfare label suggesting animals were 'humanely raised' or 'pasture raised'; and eggs with (or without) a welfare label suggesting animals were 'free range' or 'cage free'.

As well, we measured participants’ beliefs about farmed animals (measured on a 7-point scale from ‘strongly disagree’ to ‘strongly agree’) by asking them whether they agree or disagree with the following statements (items with asterisks were considered negative): most farm animals are treated humanely*; eating meat contributes to the suffering of farmed animals; animals used for food have approximately the same ability to feel pain and discomfort as human; and it is acceptable to raise and kill animals for food*.

Lastly, we measured participants’ support for farmed animal welfare (measured on a 7-point scale from ‘strongly disagree’ to ‘strongly agree’) by asking them whether they agree or disagree with the following statements: corporations should commit to treating farm animals well; my government should pass laws to ensure that farm animals are treated well; my
government should pass laws to ensure that farm animals' needs are met; and corporations should commit to ensuring that farm animals' needs are met.

Sample & Representativeness
The final sample size was 2,405 people after data cleaning (see Supplementary Materials for details). Of those, 2,138 (88.9%) completed the two-week follow-up question about animal product consumption.

The table below shows the basic demographic characteristics of our sample, which were compared to U.S. population values to assess representativeness. Overall, our sample was somewhat younger, more white, and more female than the U.S. population. It was also more politically liberal. However, because the focus of an experiment is on the comparison between groups rather than absolute values, this is not a major limitation of the study. The rates of pro-animal behaviors that we observed in this study are probably somewhat higher than in the general population because younger people and women were generally more pro-animal than older people and men (see Effect of Participant Characteristics section), but this does not affect the crucial between-group differences.
# Table 3. Participant Demographics

<table>
<thead>
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<td>Average Age (Standard Error)</td>
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<td>29.1%</td>
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<td>25-34</td>
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<td>35-44</td>
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<tr>
<td>45-64</td>
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<td>65-64</td>
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<td>65 and Older</td>
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<td>Multi-Racial</td>
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<tr>
<td>Other Race</td>
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<tr>
<td>West</td>
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<td>Northeast</td>
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<td>High School Graduate</td>
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<td>Masters Degree</td>
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<td>Doctorate or Professional Degree</td>
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<td>Conservative</td>
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<td>Moderate</td>
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<tr>
<td>Liberal</td>
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<tr>
<td>Very Liberal</td>
<td>23.90%</td>
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Results

This study’s pre-registration, survey instruments, analysis code, and data are available on the Open Science Framework.

For graphs with error bars, the error bars represent the 95% CIs.

Effects Of Animal Advocacy

Our main preregistered analyses involved comparing results in each advocacy condition against results in the control condition, to see whether people who experienced animal advocacy were affected by it on any of our outcome measures. Due to multiple comparisons, p-values were adjusted for using the Benjamini-Hochberg correction for false discovery rate (i.e., FDR correction).

However, looking at overall averages, almost none of these comparisons were significant ($p$s >.10), so we explored whether people’s pre-existing diets influenced the impact of animal advocacy.

We looked at participants’ diets in two ways: by consumption level and self-identification. For the first method, we used baseline consumption of animal products in servings. For the latter method, we split people by self-identified diet into meat-avoiders (a category including self-identified reducetarians, pescetarians, and vegetarians; 25% of participants) and meat-eaters (self-identified omnivores; 75% of participants). As mentioned in the Supplementary Materials, vegans were excluded from participating in this study. P-values were not adjusted since these were exploratory analyses and applying corrections to the subset of meat-avoiders ($n = 605$) would substantially limit our ability to find useful effects. As a result, these results should be considered preliminary and preferably replicated in another study.

We found that the effects of animal advocacy on behaviors did not vary by baseline consumption of animal products. In other words, how many animal products people ate before the experiment didn’t influence the effectiveness of animal advocacy (all $p$s >.05). However, the effects of some forms of advocacy on predicting follow-up animal product consumption and petition-signing varied by self-identified diet.

We found that meat-avoiders ate fewer animal products if they read a news article or social media post compared to meat-avoiders in the control group ($p$s <.05). In contrast, meat-eaters in most advocacy conditions ate a similar amount of animal products to controls, but meat-eaters who watched a disruptive protest ate more animal products than those in the control group ($p$ <.05), as shown in the graph below.
Regarding support for welfare improvements, meat-avoiders were less likely to sign a petition if they watched a disruptive or non-disruptive protest compared to meat-avoiders in the control group ($p < .05$), as shown in the figure below.

Meat-eaters’ petition-signing wasn’t significantly affected by animal advocacy.
Diet had no significant effect on whether advocacy influenced people to take a diet pledge (all $ps > .10$), as shown in the graph below. However, it’s worth noting that the pattern for meat-avoiders was similar here to the pattern observed for petitions: fewer pledges were taken in both protest conditions compared to the control, but the differences weren’t statistically significant.
Since the effectiveness of some forms of advocacy varied by participants’ self-identified diet, we also explored whether our other outcome measures differed between meat-eaters and meat-avoiders. Meat-avoiders’ animal protection behavior intentions, purchase intentions, beliefs about farmed animals, support for farmed animal welfare, and speciesism weren’t affected by animal advocacy (all $p > .10$), yet some of these measures were influenced by advocacy in meat-eaters.

Meat-eaters who watched a graphic video or who read a news article showed more support for farmed animal welfare than those in the control group ($p < .05$), as shown in Figure 26 below.
Also, meat-eaters who watched a non-graphic video had more positive beliefs about farmed animals than those in the control group ($p < .05$), and meat-eaters who read a leaflet had more animal protection behavior intentions than controls ($p < .05$), as shown in Figures 27-28 below.
Figure 27. Beliefs About Farmed Animals By Self-Identified Diet & Advocacy Type

The meat-avoider category includes people who self-labeled as reducetarian, vegetarian, or pescetarian, while the meat-eater category includes those who self-labeled as omnivores.
Additionally, meat-eaters who watched a celebrity, graphic, or non-disruptive protest video, or who read a leaflet, had lower intentions to purchase animal products without a welfare label than those in the control group (ps < .05), as shown in Figure 29 below.
Figure 29. Intentions To Purchase Animal Products Without A Welfare Label By Self-Identified Diet & Advocacy Type

The effect of animal advocacy on intentions to purchase animal products with a welfare label, intentions to purchase plant-based products, and speciesism did not vary by participants’ self-identified diet, as shown in Figures 30-32 below.

It’s also worth noting that educational information about welfare labels didn’t significantly impact participants’ intentions to purchase animal products with or without a welfare label ($p > .10$), as shown in Figure 29 above and Figure 30 below.
Figure 30. Intentions To Purchase Animal Products With A Welfare Label By Self-Identified Diet & Advocacy Type

The meat-avoider category includes people who self-labeled as reducetarian, vegetarian, or pescetarian, while the meat-eater category includes those who self-labeled as omnivores.
Figure 31. Intentions To Purchase Plant-Based Products By Self-Identified Diet & Advocacy Type

The meat-avoider category includes people who self-labeled as reducetarian, vegetarian, or pescetarian, while the meat-eater category includes those who self-labeled as omnivores.
Effect Of Species Targeted

We also explored whether our outcome variables were influenced by the species targeted (fish, egg-laying hen, or a mix of farmed animals). As above, \( p \)-values were adjusted for using the Benjamini-Hochberg correction for false discovery rate.

People’s beliefs towards farmed animals and the behavior of signing a petition were the only outcomes that were influenced by the species targeted. As shown in the graphs below, participants were less likely to sign a petition if they were given a fish message rather than a message containing a mix of farmed animals \( (p < .05) \). Also, participants in the fish and egg conditions held fewer positive beliefs towards farmed animals than participants who viewed a mix of farmed animals \( (ps < .05) \).
Figure 33. Petition-Signing By Species

- Egg-Laying Hen: 54%
- Fish: 45%
- Mix Of Farmed Animals: 52%

Figure 34. Beliefs About Farmed Animals By Species

- Egg-Laying Hen: 4.4
- Fish: 4.3
- Mix Of Farmed Animals: 4.5

Percentage Of Participants Who Signed A Petition

Farmed Animal Beliefs
We also explored whether the effects of animal advocacy on our outcome variables varied by the species targeted in the advocacy, but our results did not support the existence of such a pattern ($ps > .10$).

**Effect Of Participant Characteristics**

We explored whether any of our outcome measures were influenced by participants’ demographic characteristics, namely: gender, ethnicity/race, age, household income, education, and political affiliation.

The sections below present the significant results for each demographic variable, while Tables 4-6 show all results broken down by demographic. Results were also similar when demographic characteristics were considered all at once (controlling for one another), but some results became non-significant here.

In addition to looking at the direct impact of demographic variables on outcome variables, we also examined whether the impact of animal advocacy differed by demographic. Notably, no consistent patterns emerged, suggesting that animal advocacy's effectiveness didn't vary by demographics like ethnicity or gender.

**Gender**

Women were more likely to take a diet pledge and to sign a petition compared to the overall sample average ($ps < .05$).

Women also showed more farmed animal welfare support, positive beliefs about farmed animals, more animal protection behavior intentions, and higher intentions to purchase plant-based products and animal products with a welfare label than the overall average ($ps < .05$).

Women were also less speciesist and they also had lower intentions to purchase animal products without a welfare label than the overall average ($ps < .05$).

**Ethnicity/Race**

Hispanic or Latinx individuals were more likely to take a diet pledge and to sign a petition compared to the sample average ($ps < .05$). They also showed more farmed animal welfare support, positive beliefs, more animal protection behavior intentions, and higher intentions to purchase animal products with a welfare label ($ps < .05$). Hispanic or Latinx individuals were also less speciesist and had lower intentions to purchase animal products without a welfare label than the overall average ($ps < .05$). However, their consumption of animal products was on par with the overall average ($p > .10$). It should also be noted that most of these findings became non-significant after controlling for other demographic characteristics, which means that other
competing factors (e.g., gender, age, and/or income) influenced these outcomes for Hispanic and Latinx participants.

Black individuals were less likely to sign a petition compared to the overall sample, and they also showed more speciesism and fewer animal protection behavior intentions than the overall average ($ps < .05$). These results still held even after accounting for other demographic variables, meaning that gender, age, income, education, and political affiliation didn’t explain pro-animal behaviors and attitudes for Black participants (but we didn't account for all possible demographic variables, such as religion, region, or urban/rural background). Nonetheless, Black participants’ consumption of animal products was on par with the overall average ($p > .10$). Please see the “Overall Conclusions” section for how we suspect these results relate to structural inequalities.

Asian participants had higher intentions to purchase plant-based products than the overall average ($p < .05$), which still held even after accounting for other demographic variables. However, their consumption of animal products and their rate of petition-signing was on par with the overall average ($ps > .10$).

Finally, white individuals had fewer animal protection behavior intentions and lower intentions to purchase plant-based products than the overall average ($ps < .05$), which still held even after accounting for other demographic variables. However, their behaviors were on par with the overall sample average ($ps > .10$).

**Age**

Younger adults were more likely to take a diet pledge and to sign a petition than older adults. Younger adults also showed more farmed animal welfare support, positive beliefs, more animal protection behavior intentions, and higher intentions to purchase plant-based products and animal products with a welfare label than older adults ($ps < .05$).

Younger adults were also less speciesist and had lower intentions to purchase animal products without a welfare label than older adults ($ps < .05$).

**Income**

Individuals with less than a $25,000 household income were more likely to sign a petition than the overall sample, and they were also less speciesist than the overall average ($ps < .05$). But individuals with less than a $25,000 income had lower intentions to purchase animal products with a welfare label than the sample average ($p < .05$), perhaps reflecting their greater cost.

Individuals with an income under $50,000 showed more farmed animal welfare support than the overall sample ($p < .05$).
Individuals with a household income of $50,000-$74,999 were more likely to take a diet pledge compared to the sample average (p < .05), while those with an income of $75,000-$99,999 were less likely to take the pledge (p < .05).

**Education**

Individuals with less than a high school diploma held more positive beliefs about farmed animals than the overall average (p < .05).

Individuals with just a high school education were less likely to take a diet pledge and had lower intentions to purchase plant-based products compared to the sample average. However, individuals with just a high school degree or less were less speciesist than the overall average (p < .05).

Those with an associate’s degree had higher intentions to purchase animal products with a welfare label compared to the overall average (p < .05). Those with some college education had lower intentions to purchase plant-based products versus the overall average (p < .05).

Those with a master’s degree were less likely to sign a petition compared to the overall sample (p < .05). Also, those with a master’s degree were more speciesist and had higher intentions to purchase animal products without a welfare label than the overall average (p < .05); they also showed less farmed animal welfare support and held fewer positive beliefs about farmed animals (p < .05).

**Political Affiliation**

More politically liberal individuals ate fewer animal products at follow-up, and they were also more likely to take a diet pledge and to sign a petition compared to less politically liberal individuals (p < .05). They also showed more farmed animal welfare support, positive beliefs, more animal protection behavior intentions, and they had higher intentions to purchase plant-based products and animal products with a welfare label (p < .05).

More politically liberal individuals were also less speciesist and they also had lower intentions to purchase animal products without a welfare label than less politically liberal individuals (p < .05).
Table 4: Behaviors Based On Group Membership

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<tr>
<th>Characteristic</th>
<th>Average Animal Product Servings</th>
<th>Diet Pledge</th>
<th>Petition Signature</th>
</tr>
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<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td>Gender</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Woman</td>
<td>14.2</td>
<td>51%</td>
<td>56%</td>
</tr>
<tr>
<td>Man</td>
<td>14.9</td>
<td>37%</td>
<td>40%</td>
</tr>
<tr>
<td>Non-Binary/Other</td>
<td>13.5</td>
<td>56%</td>
<td>66%</td>
</tr>
<tr>
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<td>*</td>
<td>*</td>
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<tr>
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<td>44%</td>
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<td>46%</td>
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<td>43%</td>
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<td>Multi-Racial</td>
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<td>58%</td>
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<td>54%</td>
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<td>$100,000+</td>
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<td>Doctorate/Professional Degree</td>
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Notes. An asterisk (*) indicates that there was a statistically significant difference between a particular group and the overall sample average (see text in the report for details).
Table 5: Attitudes Based On Group Membership

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<th>Characteristic</th>
<th>Average Animal Protection Behavior Intentions</th>
<th>Average Animal Welfare Purchase Intentions</th>
<th>Average Non-Animal Welfare Purchase Intentions</th>
<th>Average Plant-Based Purchase Intentions</th>
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<td>*</td>
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</table>

Notes. An asterisk (*) indicates that there was a statistically significant difference between a particular group and the overall sample average (see text in the report for details).
## Table 6: Intentions Based On Group Membership

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Average Animal Protection Behavior Intentions</th>
<th>Average Animal Welfare Purchase Intentions</th>
<th>Average Non-Animal Welfare Purchase Intentions</th>
<th>Average Plant-Based Purchase Intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Sample</td>
<td>5.5</td>
<td>6.5</td>
<td>5.3</td>
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<td>Gender</td>
<td>*</td>
<td>*</td>
<td>*</td>
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</tr>
<tr>
<td>Woman</td>
<td>5.8</td>
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<td>4.9</td>
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<td>Man</td>
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<td>6.0</td>
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<td>*</td>
<td>*</td>
<td>*</td>
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<td>Hispanic or Latinx</td>
<td>6.1</td>
<td>7.0</td>
<td>4.9</td>
<td>4.9</td>
</tr>
<tr>
<td>Black</td>
<td>5.3</td>
<td>6.2</td>
<td>5.7</td>
<td>4.8</td>
</tr>
<tr>
<td>Asian</td>
<td>5.7</td>
<td>6.8</td>
<td>5.1</td>
<td>5.4</td>
</tr>
<tr>
<td>White</td>
<td>5.5*</td>
<td>6.5</td>
<td>5.3</td>
<td>4.2</td>
</tr>
<tr>
<td>Multi-Racial</td>
<td>5.6</td>
<td>6.7</td>
<td>5.5</td>
<td>4.9</td>
</tr>
<tr>
<td>Other</td>
<td>5.6</td>
<td>6.5</td>
<td>5.7</td>
<td>3.9</td>
</tr>
<tr>
<td>Income</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>&lt; $25,000</td>
<td>5.5</td>
<td>6.1</td>
<td>5.5</td>
<td>4.3</td>
</tr>
<tr>
<td>$25,000-$49,999</td>
<td>5.6</td>
<td>6.5</td>
<td>5.3</td>
<td>4.4</td>
</tr>
<tr>
<td>$50,000-$74,999</td>
<td>5.6</td>
<td>6.6</td>
<td>5.3</td>
<td>4.6</td>
</tr>
<tr>
<td>$75,000-$99,999</td>
<td>5.5</td>
<td>6.7</td>
<td>5.4</td>
<td>4.4</td>
</tr>
<tr>
<td>$100,000+</td>
<td>5.3</td>
<td>6.7</td>
<td>5.4</td>
<td>4.5</td>
</tr>
<tr>
<td>Education</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>&lt; High School</td>
<td>5.4</td>
<td>5.9</td>
<td>4.8</td>
<td>5.0</td>
</tr>
<tr>
<td>High School</td>
<td>5.6</td>
<td>6.4</td>
<td>5.1</td>
<td>4.1</td>
</tr>
<tr>
<td>Some College</td>
<td>5.6</td>
<td>6.4</td>
<td>5.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>5.6</td>
<td>6.6</td>
<td>5.4</td>
<td>4.8</td>
</tr>
<tr>
<td>Bachelors Degree</td>
<td>5.5</td>
<td>7.0</td>
<td>5.4</td>
<td>4.6</td>
</tr>
<tr>
<td>Masters Degree</td>
<td>5.4</td>
<td>6.4</td>
<td>5.7</td>
<td>4.6</td>
</tr>
<tr>
<td>Doctorate/Professional Degree</td>
<td>5.3</td>
<td>6.6</td>
<td>4.9</td>
<td>4.3</td>
</tr>
<tr>
<td>Political Affiliation</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Very Conservative</td>
<td>4.7</td>
<td>6.6</td>
<td>6.7</td>
<td>3.1</td>
</tr>
<tr>
<td>Conservative</td>
<td>4.9</td>
<td>6.4</td>
<td>6.1</td>
<td>3.3</td>
</tr>
<tr>
<td>Moderate</td>
<td>5.2</td>
<td>6.3</td>
<td>5.7</td>
<td>4.0</td>
</tr>
<tr>
<td>Liberal</td>
<td>5.8</td>
<td>6.7</td>
<td>5.1</td>
<td>4.8</td>
</tr>
<tr>
<td>Very Liberal</td>
<td>5.9</td>
<td>6.7</td>
<td>4.7</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Notes. An asterisk (*) indicates that there was a statistically significant difference between a particular group and the overall sample average (see text in the report for details).

Values in the table were rounded to one decimal point. A carat (¨) indicates that the average animal protection intention behaviors for White participants was 5.46, which was significantly lower than the average for the overall sample (5.52).
Responses To Animal Advocacy

After viewing one of the ten forms of animal advocacy, we asked participants to rate their agreement with each of the following items on a 7-point Likert scale, from 'strongly disagree' to 'strongly agree':

- I felt angry towards the people who created the [advocacy type].
- I found this [advocacy type] informative.
- I believe that the message presented in this [advocacy type] was misleading.
- The way the message was presented in this [advocacy type] was engaging.
- I felt shocked watching/seeing this [advocacy type].
- I agreed with the message of this [advocacy type].
- I felt that this [advocacy type] was condescending or talking down to me.
- The message in this [advocacy type] was new to me.
- It is clear from this [advocacy type] how I could change my behavior.

Figures 35-43 below depict each response by advocacy type.
Figure 36. Misleading

Educational Info About Welfare Labels: 2.6
News Article: 2.6
Non-Graphic Video: 2.7
Celebrity: 2.8
Leaflet: 3
Graphic Video: 3.1
Social Media Post: 3.1
Non-Distructive Protest: 3.2
Disruptive Protest: 3.3
Billboard: 3.6

Scale range was 1-7

Figure 37. Condescending

Educational Info About Welfare Labels: 2
News Article: 2.4
Non-Graphic Video: 2.7
Graphic Video: 2.7
Social Media Post: 2.7
Celebrity: 2.8
Leaflet: 2.8
Non-Distructive Protest: 2.9
Disruptive Protest: 3.2
Billboard: 3.9

Scale range was 1-7
**Diet & Responses To Animal Advocacy**

Given that the effectiveness of some forms of advocacy varied by participants’ self-identified diet, we also explored whether that diet influenced their responses to animal advocacy.

We found that self-identified diet predicted all responses to advocacy, such that meat-eaters were more likely than meat-avoiders to be angrier at the people who created the advocacy, and more likely to perceive the advocacy as condescending and misleading ($p < .05$). On a more positive note, meat-eaters were also more likely to say that the advocacy contained new information ($p < .05$).

At the same time, meat-avoiders were more likely than meat-eaters to say the advocacy was clear, shocking, engaging, and informative, and that they agreed with its message ($p < .05$).

All of these associations are shown in the figure below.

*Figure 44. Associations Between Diet, Responses To Advocacy, & Behaviors*
Responses To Animal Advocacy & Follow-Up Behaviors

We also looked at whether participants’ responses to animal advocacy predicted our three key outcome behaviors (animal product consumption, diet pledge, and petition). None of the responses to advocacy predicted follow-up animal product consumption (all ps > .10), but all of the responses shown in the figure predicted taking a diet pledge or signing a petition.

As shown in green in the figure above, advocacy is most likely to make people pledge to reduce their animal product consumption and/or sign a petition to improve farmed animal welfare when it is informative, engaging, shocking, clear, or has a message people tend to agree with.

As shown in orange in the figure above, advocacy that was seen as condescending or misleading, or made participants angry at the people who created it was less likely to get people to take a diet pledge or sign a petition (ps < .05). This means that negative responses to animal advocacy are associated with a backfiring effect—potentially causing people to be less motivated to change their behaviors to help farmed animals.

The only response that had no effect on pledges and petition-signing was the extent to which the message was new information to participants (ps > .10)

Conclusions

People’s Diets Influence The Effectiveness Of Animal Advocacy

This study showed that, unfortunately, none of the ten advocacy types we tested produced significant overall changes in animal product consumption, pledges, or rates of signing a welfare petition. However, some forms of advocacy were effective for some people.

Two advocacy types—social media posts and news articles—reduced animal product consumption compared to a control condition, but only if participants identified as meat-avoiders (i.e., reducetarians, pescetarians, and vegetarians). But we also found protests to be less effective than the control condition in getting meat-avoiders to sign a petition. We discuss the implications of these results in the Overall Conclusions section.

Although meat-eaters’ behaviors weren’t positively impacted by animal advocacy, their beliefs, support, and animal protection behavior intentions regarding farmed animals were positively influenced if they watched a graphic or non-graphic video, or if they read a news article or a leaflet. However, these effects didn’t translate into behavior change for meat-eaters, which suggests that animal advocacy is only effective for changing meat-eaters’ beliefs and intentions. This likely reflects the theory of change regarding animal product consumption, in which

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meat-eaters are further from behavior change than meat-avoiders, as discussed in the Overall Conclusions.

**People’s Diets Influence Their Responses To Animal Advocacy, Which Then Influences Their Behaviors**

People’s self-identified diet also predicted how they would react to animal advocacy, with meat-eaters responding more negatively than meat-avoiders: for instance, they found the advocacy more condescending and less engaging, and were more likely to be angry towards the advocates involved. Meat-eaters also found animal advocacy to be less informative than meat-avoiders. This is similar to recent work finding that a stronger commitment to meat-eating is associated with a greater avoidance of information about farmed animal sentience (Leach et al., 2022). In sum, meat-eaters appear to be less receptive to animal advocacy and/or animal welfare information than meat-avoiders.

Those responses to animal advocacy (anger, agreement, etc.) also predicted some key behaviors. While it’s important to note that none of the responses predicted animal product consumption, there was a clear pattern for diet pledge and petition. Negative responses like anger towards the advocate were associated with fewer pledges and petition signatures, while positive responses like finding the advocacy informative and engaging were associated with more pledges and petition signatures.

This suggests that how individuals respond to animal advocacy is important for determining its effect on some behaviors, namely taking a diet pledge or signing a petition. While both of these behaviors are positive on the surface, we know that actual animal product consumption was unaffected, so the influence on diet pledge is less meaningful in that it didn’t translate into real behavior. But support for welfare reform is a valuable commodity—whether in the form of petition signatures, emails to representatives, or votes—so advocates should pilot test their advocacy materials to pick ones that generate the most positive responses (green in Figure 44 above) and the fewest negative (orange) responses.

**Species Targeted Also Influence The Effectiveness Of Animal Advocacy**

We also found that, compared to messages about farmed animals in general, people were less likely to sign a petition if they viewed a fish message, and they also held fewer positive beliefs about farmed animals. People also held fewer positive beliefs about farmed animals if they viewed a message about eggs.

These results suggest that advocating for chickens and especially fishes may be more difficult in some ways than advocating for farmed animals more generally.
Limitations

Like all studies, this one has a number of caveats and limitations to bear in mind. In this case, you may notice that many of the limitations of this experimental study are the inverse of the limitations of the retrospective study. This is exactly why we ran both for this report: the strengths of one approach balance the weaknesses of the other, so putting them together gives the best understanding of effects.

Experimental Versus Real-World Experiences

Studying advocacy in an experimental context means having to make some compromises to keep the experimental conditions as similar to one another as possible (with the exception of the variable of interest: advocacy type). The main compromise here was that all conditions were presented online, so advocacy types that would normally be experienced firsthand—protests and billboards—were experienced differently than they would be in real-world situations. As noted above, these limitations are offset by the real-world, retrospective findings of Study 1, and we took both into account when drawing up recommendations.

Generalizability From Specific Materials

A second limitation of this study is about the specific materials we used. Real-world advocacy has a wide range of styles, messages, and other features while our experimental advocacy materials were just a few specific examples of that. One might wonder how generalizable the findings are from these specific materials to all advocacy.

In short, we believe they are reasonably (but not perfectly) generalizable. The reasons are that, first, we excluded any specific appeals from them—like “go vegan” or “abolish factory farming.” Therefore, they are not tied to particular campaign goals. Second, all of our materials were taken from real-world campaigns or scenarios, thereby making them as realistic as possible. And lastly, we had three different examples of each advocacy type, representing different animal groups: egg-laying hens, fishes, and a mix of farmed animals. This means that while there are specific examples in play, the results are at least averaged across several of them, making them much more generalizable than they would be if we were relying on a single example per advocacy type.

However, there are a few areas where caution is particularly warranted:

- Because the materials we used all focused on farmed animals, the results don’t necessarily generalize to advocacy for other groups of animals, though we suspect that many of them may.
- There were very few examples of celebrity videos that met our criteria, so all of our experimental materials in that condition came from a single celebrity, Joaquin Phoenix.
That means that the experimental results for celebrities may not generalize well to messages from other celebrities.

- If you, the reader, use a particular type of advocacy, we recommend that you take a look at the three experimental stimuli we used for that type of advocacy. The more similar those materials look to the work you do, the more you can assume that the results will apply to you.

**Associations Between Responses To Advocacy & Behaviors**

As a reminder, we found that individuals’ responses to advocacy predicted some of their behaviors. However, these findings are correlational, meaning that we cannot show that these responses are what caused behavior change per se, although it's likely they do.

Experimentally investigating this cause-and-effect wouldn't be possible because experiments require random assignment of participants to conditions and an experimenter can’t randomly decide which participants will have a positive or negative response. As such, our correlational results are the best we can manage. They imply, but don’t prove, that responses to advocacy cause behavior change.
Overall Conclusions

Receptivity Towards Advocacy

In our first study, people reported several factors that made them more receptive towards animal advocacy, one of which included trying plant-based options. Similarly, our experiment found that meat-avoiders were more receptive to social media posts and news articles than meat-eaters.

Given these results, we recommend that advocates and organizations become familiar with their audiences’ diet to effectively target interventions towards meat-avoiders. Indeed, advocacy that’s matched to participants’ diet-related intentions (e.g., meat-reducing strategies being emphasized for meat-avoiders) are more effective at reducing animal product consumption than when there’s a mismatch (e.g., meat-reducing strategies being emphasized for meat-eaters; Lacroix & Gifford, 2020).

Self-Identified Diet Versus Consumption

Our experiment found that the effects of animal advocacy on behavior weren’t influenced by diet when it was measured quantitatively, such as the number of animal product servings consumed. Yet, when diet was measured by how people identify, that’s where we saw the effectiveness of some advocacy forms differing between meat-eaters and meat-avoiders.

These results reflect the importance of identity surrounding animal product consumption and how identity doesn’t always reflect actual consumption per se. Regarding the first point, previous work has found that people who identify as meat-eaters tend to not want to reduce their meat consumption overall (Carfora, Caso, & Conner, 2017), which may reflect the extent to which they enjoy eating meat and/or view veg*nism as a threat to society (Bagci, Rosenfeld, & Uslu, 2021).

It’s likely that meat-eaters engaged in various strategies to justify their eating behaviors if they experienced cognitive dissonance when they viewed animal advocacy in this experiment. In contrast, those who actively identify as meat-avoiders may be more receptive to changing their behaviors, rather than their beliefs, in response to any cognitive dissonance that they may have experienced from viewing animal advocacy in this experiment.

As for why diet per se didn’t predict the effectiveness of animal advocacy while identity did, it’s important to bear in mind that the actual amount of animal products consumed doesn’t always reflect whether people are actively reducing their consumption of animal products or not. Some meat-avoiders may still eat more animal products than meat-eaters (and vice versa). Indeed, it’s identity that’s crucial for determining the effectiveness of advocacy, as found in our experiment. This makes sense in terms of what we know about the stages of behavior change: full meat-eaters may not have even started thinking about reasons for reducing consumption and
they likely aren’t ready to change, whereas people who identify as meat-avoiders are already in an action stage (see Bryant et al., 2021).

**Protests Backfiring For Meat-Avoiders**

It may be perplexing that protests made meat-avoiders less likely to sign a petition and to take a diet pledge in our experiment. This suggests that protests backfire for meat-avoiders, at least for immediate behaviors like signing a petition or taking a pledge.

This backfire effect may reflect how vegetarians, reducetarians, and pescetarians see themselves relative to vegans or animal rights activists. For instance, it’s possible that meat-avoiders didn’t want to be associated with the protesters they saw in the videos, given that people tend to view activists negatively in general (e.g., as militant or hostile), and not want to associate with them (Bashir et al., 2013). Similarly, research has shown that there can be tension between vegans and people who are less strict animal product avoiders. Specifically, vegetarians report more discrimination from vegans than other vegetarians, and feeling more anxiety and vigilance when interacting with animal-rights-based vegans than individuals who are vegan for other reasons (MacInnis & Hodson, 2021).

We speculate that these results may have arisen due to tense feelings or negative reactions toward activists or (assumed) vegans—that they may have turned off meat-avoiders from associating with protestors by taking a pledge or signing a petition. However, please note that this is an educated guess based on previous research—it has not been proven.

**The Role Of Race/Ethnicity**

It’s important to recognize the diversity of communities that advocates work with, and how marginalized groups are often underrepresented in research. For these reasons we looked at whether any effect of animal advocacy varied by different race/ethnicity groups, in addition to understanding what impact, if any, race/ethnicity had on our outcome measures to identify opportunities and challenges.

Our first study found that Black and Hispanic or Latinx participants reported substantially higher reductions of animal product consumption than the overall sample. However, our experiment didn’t find the effectiveness of any form of animal advocacy to differ by ethnicity/race, so it’s likely that the results from our first study were prone to self-report biases (as outlined above in the “Limitations” section). Most importantly, the results from our experiment mean that our overall recommendations below are applicable to different communities.

That said, we did identify some differences between racial/ethnic groups regarding pro-animal behaviors and attitudes in our experiment. Most notably, despite eating a similar amount of animal products as the average participant, Hispanic or Latinx individuals were more likely than average to sign a petition, while Black individuals were less likely to sign a petition and showed
more speciesist beliefs than average. At face value, these results may indicate that some groups face more challenges than others regarding behavior change. For Black communities, it is likely that structural inequalities play a key role in those challenges.

In particular, research has long shown that Black Americans experience more oppression, barriers, and limited opportunities in almost every aspect of their lives. For example, Black Americans have less access to affordable healthy foods (Myers & Painter, 2017), and Black Americans are more likely to be discriminated against than white people for housing opportunities (Banaji et al., 2021) and job applications (Kline et al., 2021), among other things. We strongly suspect that this marginalization is behind the differences observed here, in that experiences of scarcity, powerlessness, and oppression will, of necessity, cause one to focus on navigating those challenges, thereby limiting their opportunities to engage with other issues of less immediate relevance (e.g., see Richardson et al., 2020).

Unfortunately, we don’t have the data to pinpoint which structural barriers were in place for Black participants in our sample, and animal advocacy research specifically pertaining to Black, Indigenous, and People of the Global Majority (BIPGM) experiences is scarce, though there is some excellent work on the topic (e.g., Brown, 2005). Given findings like these, and limited empirical work regarding how structural inequalities impact pro-animal behaviors of some marginalized groups but not others, we encourage future cultural research to better understand these issues.

**Animal Advocacy Recommendations**

Here we compare the results for each advocacy type included in both studies to better understand the effectiveness or ineffectiveness of animal advocacy on changing people’s behaviors, intentions, beliefs, and attitudes towards farmed animals. In making recommendations, we have placed more weight on positive experimental, behavioral results, particularly those for animal product consumption. For this reason, our recommended advocacy types are those that have shown a positive impact on self-reported animal product consumption.

On the other hand, we recommend against using advocacy types that have shown a negative impact on animal product consumption or other pro-animal behaviors. And we advise caution around several advocacy types that have been minimally researched, but existing evidence is negative (see Table 7 below).

Furthermore, we weakly recommend advocacy types that have been shown to positively impact intentions or beliefs, though we suggest that advocates carefully consider the cost of these interventions. This is because people’s beliefs, attitudes, and intentions play a bigger role in the earlier stages of behavior change, as depicted in the Transtheoretical or Stages of Change Model of behavior change. In other words, advocacy types that only impact intentions, beliefs, or attitudes may still be effective for people who are in the “precontemplation” stage by bringing them one step closer to behavior change (Bryant et al., 2021).
Throughout the sections below, we considered implications for advocates and funders but have not explicitly included cost-effectiveness in our considerations, as it can vary substantially. We strongly recommend that advocates and funders include the relative cost of different approaches in their own decision-making.

Also bear in mind that in a research setting where people agree to participate, there is a strong expectation that they will read or watch everything the researchers put in front of them. People exposed to advocacy in real life have much more of a choice about whether to engage with it—whether to read the news article they see, watch the documentary advertised on Netflix, or avoid a crowd of protesters. Study 1’s results about the frequency of experiencing each type of advocacy provide some hint about how common this is, but there are multiple possible explanations for low frequencies that can’t be teased apart with this research. So we remind the reader that if few people are willing to engage with a particular type of advocacy, it may be substantially less impactful. For instance, one of the biggest potential issues with randomly distributing leaflets is the low frequency of people reading them. These considerations should be part of pilot testing and cost-effectiveness calculations.

See the table below for a summary and the accompanying text for more detail about all advocacy types considered in this report.
<table>
<thead>
<tr>
<th>Advocacy Type</th>
<th>Recommendation</th>
<th>Reasons (see text in the report for more details)</th>
</tr>
</thead>
<tbody>
<tr>
<td>News Article</td>
<td>Recommend</td>
<td>Our experiment found reduced self-reported animal product consumption in meat-avoiders and no negative impact on meat-eaters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approximately 40% of participants surveyed in our first study reported reduced animal product consumption.</td>
</tr>
<tr>
<td>Social Media Post</td>
<td>Recommend</td>
<td>These forms of advocacy weren't included in our experiment for practical reasons, but approximately 60% of participants surveyed in the first study reported reduced animal product consumption.</td>
</tr>
<tr>
<td>Classroom Education</td>
<td>Recommend*</td>
<td>Other published studies suggest they can reduce animal product consumption.</td>
</tr>
<tr>
<td>Meat-Free Challenge</td>
<td>Recommend*</td>
<td>Other published studies suggest they can reduce animal product consumption.</td>
</tr>
<tr>
<td>Graphic Video</td>
<td>Weakly recommend</td>
<td>40% of respondents who experienced graphic videos in our first study reported reduced animal product consumption, but our experiment found no causal evidence for behavior change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Graphic videos did reduce intentions to purchase animal products without a welfare label and increased farmed animal welfare support among meat-eaters in our experiment. There was no impact on meat-avoiders.</td>
</tr>
<tr>
<td>Leaflet</td>
<td>Weakly recommend</td>
<td>43% of respondents who experienced leaflets in our first study reported reduced animal product consumption, but our experiment found no causal evidence for behavior change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Leaflets did reduce intentions to purchase animal products without a welfare label and increased animal protection behavior intentions among meat-eaters in our experiment. There was no impact on meat-avoiders.</td>
</tr>
<tr>
<td>Non-Graphic Video</td>
<td>Weakly recommend</td>
<td>38% of respondents who experienced non-graphic videos in our first study reported reduced animal product consumption, but our experiment found no causal evidence for behavior change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non-graphic videos did increase positive beliefs about farmed animals among meat-eaters in our experiment. There was no impact on meat-avoiders.</td>
</tr>
<tr>
<td>Celebrity</td>
<td>Weakly recommend</td>
<td>24% of respondents who experienced celebrity endorsements in our first study reported reduced animal product consumption, but our experiment found no causal evidence for behavior change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Celebrity endorsements did reduce intentions to purchase animal products without a welfare label among meat-eaters in our experiment. There was no impact on meat-avoiders.</td>
</tr>
</tbody>
</table>
**News Article**

We recommend news articles because they reduced meat-avoiders’ self-reported animal product consumption and they didn’t negatively impact meat-eaters’ behaviors in our experiment. News articles did however increase farmed animal welfare support among meat-eaters, despite not impacting meat-eaters’ petition-signing. Likewise, Study 1 found that news articles were reported as reducing animal product consumption by almost 40% of respondents who remembered experiencing them.
We also recommend news articles because they didn’t tend to cause negative responses like anger in both studies, nor were they perceived as misleading in our experiment—responses that may reduce positive behaviors. As well, news articles in our experiment were perceived as one of the most informative forms of advocacy and they were also one of the forms of advocacy people were most likely to say they agreed with. We suspect that this combination of responses is due to the format of news articles—they have the space to cover an issue fairly, without seeming one-sided.

**Social Media Post**

We recommend social media posts because, like news articles, they also reduced meat-avoiders’ self-reported animal product consumption, while not negatively impacting meat-eaters’ behaviors in our experiment. Similarly, in our first study, social media posts were reported as reducing animal product consumption by almost 40% of respondents who remembered experiencing them.

We also recommend social media posts because they didn’t tend to cause anger in our experiment (though they were average in the first study, causing anger in 19% of respondents who remembered seeing them). They also scored around the middle for being perceived as misleading and condescending, while also scoring the lowest for being perceived as clear regarding behavior change by participants in our experiment. While this could be specific to our particular examples, we suggest that advocates and organizations make sure it’s clear how people can change their behavior when creating social media posts. This is especially important considering that the clearer people found animal advocacy regarding behavior change, the more likely they were to sign a petition.

Thus, the effectiveness of social media posts (and other advocacy forms) may be strengthened by adding more explicit guidance or recommendations on behavior change—as long as it’s handled in a way that doesn’t make it, for example, more angering or condescending.

**Classroom Education**

We recommend classroom education, but primarily due to previously published research supporting its effectiveness as we weren’t able to include it in our experiment. In our first study, almost 60% of respondents who remembered participating in one said it reduced their animal product consumption. Likewise, several previous studies, including experimental work, have found evidence that classroom education can reduce meat consumption in undergraduate students (Bryant, 2021; Jalil et al., 2020; Schwitzgebel et al., 2020; Schwitzgebel et al., 2021).

It should be noted that classroom education also caused anger in approximately 41% of respondents who experienced it in our first study. But as long as attention is given to appropriate targeting—for which Bryant (2021) provides recommendations—it may be possible to use classroom education effectively at scale.
**Meat-Free Challenge**

We recommend meat-free challenges, but primarily due to previously published research supporting its effectiveness as we weren’t able to include it in our experiment. Meat-free challenges were only included as a form of advocacy in our first study, where 63% of respondents who remembered participating in one said it reduced their animal product consumption. Similarly, previous work suggests that various types of meat-free challenges can reduce animal product consumption (e.g., Challenge 22, 2019; Grassian, 2019; Veganuary, 2021). However, most are not experimental, which limits our knowledge of how much of the reduction observed can be attributed to the challenges themselves versus being something participants might have done on their own.

To the best of our knowledge, there has only been one published experiment on the effectiveness of a meat-free challenge on changing people’s meat consumption (Piazza et al., 2022). They found that a 28-day meat-free challenge reduced meat consumption in individuals who had participated compared to individuals who hadn’t participated. However, the reduction went away once the challenge was over.

Considering all of these findings together, we recommend the use of meat-free challenges, but advise additional experimental research on the topic.

**Graphic Video**

We weakly recommend using graphic videos as an advocacy strategy since they positively impacted non-behavioral measures in our experiment. First, they reduced intentions to purchase animal products without a welfare label in meat-eaters. Graphic videos also increased farmed animal welfare support among meat-eaters, though they did not increase the likelihood of signing a welfare petition. Further, graphic videos scored the highest for being seen as clear regarding behavior change in our experiment.

However, there was no causal evidence of graphic videos directly changing behavior in our experiment. Despite this, our first study found that graphic videos were self-reported as reducing animal product consumption by 40% of respondents who remembered experiencing them.

Also, given the wide range of ways that graphic videos are used—often as part of other types of advocacy—we recommend that advocates use them carefully, and pilot test the reactions if possible (see Supplementary Materials for details), to find a balance of positive outcomes like clarity and negative ones like anger to maximize impact.

Although we did not test this directly for ethical reasons, we also recommend that advocates show graphic videos only to forewarned viewers, as it is reasonable to assume that anger would be higher in individuals who find the content objectionable (rightly or wrongly) and did not consent to see it. Indeed, graphic videos scored the highest for anger towards advocates in our experiment and they also caused an above-average level of anger in 27% of respondents in our first study, on top of being described by some people as turning them away from learning about
animal suffering. It is worth noting that all our participants were aware that they would see graphic content and gave consent.

**Leaflet**

We weakly recommend using leaflets as an advocacy strategy since they positively impacted non-behavioral measures in our experiment. First, leaflets reduced intentions to purchase animal products without a welfare label in meat-eaters. Leaflets also increased animal protection behavior *intentions* in meat-eaters, but not behavior. It should also be noted that leaflets scored around the midpoint of responses in our experiment—that is, people didn’t react particularly negatively or positively to leaflets.

However, our experiment didn’t find causal evidence of leaflets on changing people’s behaviors. Despite this, 43% of respondents who remembered experiencing them in our first study said that leaflets reduced their animal product consumption as a result. Even so, a previous experiment also didn’t find an overall effect of leaflets on changing college students’ meal purchases in dining halls (*Haile et al.*, 2021). Likewise, previous research by Vegan Outreach (2018) provides weak evidence supporting the effectiveness of leafleting, but it was limited by a very low response rate.

**Non-Graphic Video**

We weakly recommend using non-graphic videos as an advocacy tactic since they positively impacted non-behavioral measures in our experiment. Non-graphic videos increased positive beliefs about farmed animals in meat-eaters. They were also one of the top-scoring forms of advocacy for being perceived as informative and clear (although they scored around the midpoint for causing anger in our experiment).

However, we didn’t find causal evidence for non-graphic videos to change people’s behaviors in our experiment. Despite this, 38% of respondents who remembered experiencing them in our first study reported reduced animal product consumption.

We also acknowledge that non-graphic videos are sometimes incorporated into other forms of advocacy, such as social media posts. Given this, we think that non-graphic videos can be useful when combined with recommended forms of advocacy.

**Celebrity**

We weakly recommend using celebrity endorsements as a form of advocacy. This is because celebrity videos reduced intentions to purchase animal products without a welfare label in meat-eaters in our experiment.

However, we didn’t find causal evidence for celebrities to change people’s behaviors in our experiment, despite that almost 25% of respondents who remembered experiencing celebrity messages in our first study said it reduced their animal product consumption. It should also be noted that responses to celebrity influences were neutral to negative in both of our studies, and
one of our previous reports found that receiving information from celebrities was associated with less success at attaining a veg*n dietary goal (Faunalytics, 2021).

The evidence pertaining to celebrity endorsements is clearly mixed, and it is the weakest of our recommendations. We strongly suggest that groups considering celebrity-based campaigns pilot test their reception and probable cost-effectiveness.

**Educational Information About Animal Welfare Labels**

We advise caution and additional research into the efficacy of educational information about welfare labels as an advocacy strategy since our experiment didn’t find causal evidence for this type of advocacy to change people’s behaviors, nor did it change people’s intentions to purchase animal products with or without a welfare label. The latter finding is in contrast with previous work that has found educational information to be associated with a higher intention to purchase high-welfare animal products (Cornish et al., 2020). As such we recommend further research, especially since 36% of respondents who remembered experiencing this form of advocacy said it reduced their animal product consumption in our first study.

Despite the lack of causal evidence, we did find this form of advocacy to cause the least amount of anger in both studies, and it was also the advocacy type least likely to be perceived as misleading or condescending. Moreover, this advocacy form was rated as the most informative advocacy type by participants, and it also scored as the second-highest for being clear regarding how people can change their behavior in our experiment.

Nonetheless, these positive responses weren’t sufficient to cause behavior change or to increase purchase intentions in participants who received educational information about welfare labels in our experiment. So advocates may wish to pursue further research to guide campaign decisions.

**Documentary**

We advise caution and additional research into the efficacy of documentaries as an advocacy strategy. This form of advocacy was only included in our first study where 56% of respondents who remembered experiencing them said it reduced their animal product consumption. Experimental research from other sources is limited and doesn’t support documentaries’ effectiveness with the general population.

For instance, a recent experiment found no effect of a 20-minute documentary versus a control video on people’s consumption of animal products two weeks later, despite the documentary increasing diet pledges (Mathur et al., 2021). Similarly, one experiment found ‘Cowspiracy’ to reduce people’s intentions to consume meat (Pabian et al., 2020), while another found no effect of a shortened version of the documentary on actual meat consumption (Bschaden et al., 2020).
Our caution is based on very limited research, so we encourage additional experimental research on the efficacy of documentaries—particularly research that takes into account base rates of willingness to watch them as well as their impact on people who choose to watch them.

**Billboards**

We also advise caution and additional research into the efficacy of billboards as an advocacy strategy. There was no impact of billboards on people’s behaviors, beliefs, attitudes, or intentions in our experiment, despite our first study finding that 25% of respondents who remembered experiencing them said that it reduced their animal product consumption.

We also advise caution since billboards were perceived as the most condescending and misleading form of advocacy in our experiment. They were also found to be one of the most angering in our experiment, though they were average in the first study, causing anger in 19% of respondents who remembered seeing them.

In short, billboards appear to cause above-average negative responses and have no clear impact on people’s behaviors, attitudes, beliefs, or intentions. Nonetheless, we acknowledge that our caution is based on very limited research, so we encourage additional experimental research on the efficacy of billboards if groups wish to use them.

**Non-Disruptive Protest**

We recommend against using non-disruptive protests as an advocacy strategy since our experiment found them to reduce petition-signing in meat-avoiders. Non-disruptive protests also didn’t change people’s other behaviors in our experiment, despite almost 40% of respondents who remembered experiencing them in our first study reporting reduced animal product consumption. We did find that non-disruptive protests reduced intentions to purchase animal products without a welfare label in meat-eaters in our experiment, but this didn’t translate into behavior change.

Another reason why we don’t recommend non-disruptive protests is that they were one of the top-scoring forms of advocacy for being perceived as condescending and misleading in our experiment, despite scoring around the average for causing anger towards advocates in both studies. Furthermore, non-disruptive protests were also one of the advocacy forms least likely to be seen as informative by participants, and they were the advocacy form for which participants were least likely to agree with the message.

It is worth noting that our findings of negative-to-neutral effects are potentially at odds with previous work finding that climate protests increased public support for climate issues ([Budgen, 2020](#)), though that may be due to differences in the issues. Overall, the backfire effects of non-disruptive protests on meat-avoiders’ likelihood of signing a petition and the lack of causal evidence of these protests on changing people’s diet in our experiment led us to recommend against its use, but additional research is warranted.
**Disruptive Protest**

We also recommend against using disruptive protests because we found them to increase self-reported animal product consumption in meat-eaters in our experiment, despite 26% of respondents who remembered experiencing them in our first study reporting reduced animal product consumption. Meat-avoiders were also less likely to sign a petition if they watched a disruptive protest.

We also don’t recommend disruptive protests since they were reported to cause anger towards protestors in almost half (49%) of the respondents who remembered experiencing them in our first study. Likewise, disruptive protests were one of the advocacy forms that were most likely to cause anger in our experiment, and they were the second most likely form of advocacy to be perceived as condescending and misleading. As well, disruptive protests were also one of the advocacy forms least likely to be seen as informative, and one of the advocacy forms least likely for participants to agree with its message.

We will again note that our findings of negative-to-neutral effects for protests are potentially at odds with Budgen’s (2020) previous work, though that may be due to differences in how animal and climate issues are perceived by the public. In sum, there were more negative than positive effects of disruptive protests on people’s behaviors, support, and responses in our studies so we recommend against their use, but we hope to see more research on the topic.

**Peer-To-Peer Outreach**

We feel that there isn’t sufficient data on this form of advocacy to make a recommendation about it. Experimentally testing the effects of outreach is logistically difficult, especially when involving friends and family. This is likely why there’s a lack of experimental research for this advocacy type and why we didn’t include it in our own experiment.

But there is some retrospective research that suggests that peer-to-peer outreach may be effective. For instance, in one of our previous studies, 41% of new veg*ns said that they had received information about plant-based eating from a peer in the month prior to starting their veg*n diet (Faunalytics, 2021). This evidence is suggestive, as is the fact that approximately 40% of respondents in the first study who remembered experiencing them said it reduced their animal product consumption. But given the limitations of self-report studies (see ‘Limitations’ from Study 1), we can’t be certain that peer-to-peer outreach causes behavior change. Faunalytics is currently preparing for a project designed to estimate peer-to-peer spread of veg*nism, to be published later in 2022.

**Book**

We feel that there isn’t sufficient data on books as advocacy tools to make a recommendation about them. Experimentally testing the effects of reading a book is logistically difficult because of their length. This is likely why there’s a lack of experimental research for this advocacy type and why we didn’t include it in our own experiment. Indeed, the only experiment we know of is
unpublished and described in a conference presentation (Salmen, 2021; Animal Advocacy Conference). It found no significant effect of the book ‘Eating Animals’ versus a control book on people’s meat consumption.

However, our first study provides limited evidence that books may be effective, at least with those who choose to read them: 72% of respondents who remembered reading a book said that it caused them to reduce their animal product consumption. Given the limitations of self-report studies (see ‘Limitations’ from Study 1), we are very uncertain about books’ potential to cause behavior change, but again, we recommend more research on this question.
Supplementary Materials

Survey For Picking Your Advocacy Materials

As recommended, we advise that you test out different versions of advocacy materials on people from the general public by asking them to complete a survey for each version. Once responses have been collected, choose the advocacy material that results in the most positive responses (informative, engaging, agreement, and clarity regarding behavior change) and the least negative responses (anger, misleading, and condescending).

Copy the following survey and give it to participants after they read or watch your advocacy materials:

1. **How angry did it make you?**
   a. Not at all angry
   b. Slightly angry
   c. Moderately angry
   d. Very angry
2. **How informative did you find it?**
   a. Not at all informative
   b. Slightly informative
   c. Moderately informative
   d. Very informative
3. **How misleading did you find it?**
   a. Not at all misleading
   b. Slightly misleading
   c. Moderately misleading
   d. Very misleading
4. **How engaging did you find it?**
   a. Not at all engaging
   b. Slightly engaging
   c. Moderately engaging
   d. Very engaging
5. **How condescending did you find it?**
   a. Not at all condescending
   b. Slightly condescending
   c. Moderately condescending
   d. Very condescending
6. **How much did you agree or disagree with the message?**
a. Strongly disagree
b. Somewhat disagree
c. Neither disagree or agree
d. Somewhat agree
e. Strongly agree

7. How clear did you find it regarding how you could change your behavior?
   a. Not at all clear
   b. Slightly clear
c. Moderately clear
d. Very clear

Study 1

Detailed Procedure

Participants were recruited using Positly. To be eligible for the study, participants had to live in the U.S. and be at least 18 years of age. Recruitment continued until there were sufficient participants to conduct the necessary statistical tests, as outlined in the pre-registration plan. To ensure that the results would be relevant to advocates who work with Black and Hispanic or Latinx communities, these two groups were oversampled to ensure that at least 150 participants per group completed the entire survey.

Participants who stated in the first part of the survey that they had encountered at least one advocacy type within the previous five years were invited to complete the second section, where they were asked to provide details about their attitudes towards the advocacy that they had been exposed to and whether it affected their behavior or attitudes. Those who had been vegan for more than five years were not invited to take part in the second part of the survey, because they were not part of the target audience.

To minimize the risk that participants would overreport their experiences with advocacy in order to get paid more, the survey advertisement only mentioned the first section, for a payment of USD $0.80. Participants who had experienced advocacy were invited to complete the second part in exchange for an additional payment of USD $1.

Exclusion Criteria

Our participant exclusion criteria were defined in our pre-registration. Participants were automatically ejected from the study if they indicated that they were under the age of 18; were not living in the U.S.; or failed a captcha designed to catch bots.
Cases were excluded after data collection if any ONE of the following conditions were met:

- The participant ID was a duplicate of another one in the file, in which case we kept the earliest complete response;
- The case was incomplete (i.e., the participant did not finish the survey); or
- A non-trivial, multi-word open-ended response was an exact duplicate of another response in the file, implying copy-pasting.

Participants were excluded after data collection if any TWO of the following conditions were met:

- They failed an attention check that required them to say they HAVE used the internet;
- They failed an attention check that required them to say they have NOT run a mile in less than a minute;
- They failed a quality check on an open-ended item (which occurs if it has very poor grammar, is unintelligible, is very clunky, or does not answer the question);
- They completed the survey in less than one-third of the median time; or
- They were characterized as having a duplicate IP address as another survey respondent, having a suspicious IP address (as determined by https://itaysisso.shinyapps.io/Bots/), or coming from outside the geographic location included in the desired sample.

**Detailed Analysis Method**

**Effects Of Animal Advocacy**

_T-tests_ were used to compare the means of each self-reported effectiveness scale between all advocacy types. Per our _pre-registration_, _p_-values weren’t adjusted here and the results were used to highlight major patterns only. Pairwise comparisons for Black and Hispanic or Latinx participants were only run if there was sufficient data (_n_ = 30) on at least two advocacy types per scale. _P_-values from all pairwise comparisons can be found below.

Table 8. _P_-Values Of Pairwise Tests Comparing Reduction In Animal Product Consumption In The Full Participant Sample

https://infogram.com/1pkgl3zl1xkzd7i9ynpwn0kmrec325l3p1y?live

Table 9. _P_-Values Of Pairwise Tests Comparing Attention To Animal Welfare Labels In The Full Participant Sample

https://infogram.com/1p2m37pnw10jknf0n2rxg29yyv5h9lwk31w?live
Table 10. P-Values Of Pairwise Tests Comparing Information-Seeking About Farmed Animal Welfare In The Full Participant Sample

https://infogram.com/1p9gqvxe105qr6c7geq3zy0260f3nz569wk?live

Table 11. P-Values Of Pairwise Tests Comparing Sympathy To Animal Suffering In The Full Participant Sample

https://infogram.com/1prjd0xgg05p7ig15vzj13w2jfmdpgpz?live

Table 12. P-Values Of Pairwise Tests Comparing Anger Towards Advocates In The Full Participant Sample

https://infogram.com/1pnm5nyg5vk290sz3m06kmywngimpgeye57?live

Table 13. P-Values Of Pairwise Tests Comparing Reduction In Animal Product Consumption In Black Participants

https://infogram.com/1pxxyew2ddk0gdiq1gez1xp19bn12jx332?live

Table 14. P-Values Of Pairwise Tests Comparing Attention To Animal Welfare Labels In Black Participants

https://infogram.com/1p2xknk639m06ic0eznmdgpr9brjqrpin?live

Table 15. P-Values Of Pairwise Tests Comparing Information-Seeking About Farmed Animal Welfare In Black Participants

https://infogram.com/1prdi5lq1gg11kcgvxe069072jime26r9wk?live

Table 16. P-Values Of Pairwise Tests Comparing Sympathy To Animal Suffering In Black Participants

https://infogram.com/1p5713zxp1wg2ap55vgmeqj1yt35rxjdj1?live

Table 17. P-Values Of Pairwise Tests Comparing Anger Towards Advocates In Black Participants

https://infogram.com/1pv2kk5lmmp3grhx67glrdw35z5cr9ywq01?live

Table 18. P-Values Of Pairwise Tests Comparing Reduction In Animal Product Consumption In Hispanic or Latinx Participants

https://infogram.com/1px09dywppd0dijq1x15kwn7rxhndwex0vn?live

Table 19. P-Values Of Pairwise Tests Comparing Attention To Animal Welfare Labels In Hispanic or Latinx Participants

https://infogram.com/1p2iq335myjimrb0vqyidp0klvjr720k0k?live
Table 20. P-Values Of Pairwise Tests Comparing Information-Seeking About Farmed Animal Welfare In Hispanic or Latinx Participants

https://infogram.com/1pxd56q1zy2qyiaqmdzqvy9yieanxzm9l6z?live

Table 21. P-Values Of Pairwise Tests Comparing Sympathy To Animal Suffering In Hispanic or Latinx Participants

https://infogram.com/1pgd7pj7z3j672i93kw2d1j7mvfw3qo79f?live

Table 22. P-Values Of Pairwise Tests Comparing Anger Towards Advocates In Hispanic or Latinx Participants

https://infogram.com/1pegyl9dm6qwdvhm9w0kxq93m6tlpr9079?live

Remembering Animal Advocacy

We asked participants if they remembered their reaction to the animal advocacy that they had experienced. The primary goal was so that we could ask them follow-up questions about that experience while avoiding the potential for made-up answers if they didn’t remember. However, this also provides an indication of how memorable—which is distinct from effectiveness—each form of advocacy is. The table below shows the percentage of participants, of those who experienced each advocacy type, who remembered their reaction to it.

Table 23. Percentage Of Participants Who Remembered Their Reaction To Advocacy

<table>
<thead>
<tr>
<th>Advocacy Type</th>
<th>Participants Who Remembered Reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphic Video</td>
<td>86%</td>
</tr>
<tr>
<td>Documentary</td>
<td>79%</td>
</tr>
<tr>
<td>Peer-To-Peer Outreach</td>
<td>76%</td>
</tr>
<tr>
<td>Classroom Education</td>
<td>68%</td>
</tr>
<tr>
<td>Book</td>
<td>67%</td>
</tr>
<tr>
<td>Meat-Free Challenge</td>
<td>67%</td>
</tr>
<tr>
<td>Disruptive Protest</td>
<td>66%</td>
</tr>
<tr>
<td>Social Media or Blog Post</td>
<td>64%</td>
</tr>
<tr>
<td>News Article</td>
<td>62%</td>
</tr>
<tr>
<td>Non-Graphic Video</td>
<td>61%</td>
</tr>
<tr>
<td>Vegan/Plant-Based Labels</td>
<td>59%</td>
</tr>
<tr>
<td>Leaflet or Flyer</td>
<td>58%</td>
</tr>
<tr>
<td>Non-Disruptive Protest</td>
<td>55%</td>
</tr>
<tr>
<td>Educational Info About Welfare Labels</td>
<td>55%</td>
</tr>
<tr>
<td>Celebrity</td>
<td>54%</td>
</tr>
<tr>
<td>Ad or Billboard</td>
<td>50%</td>
</tr>
</tbody>
</table>
For participants who recalled a recent experience of animal advocacy, we also asked them how they came to experience it (e.g., by intentionally looking for it or coming across it randomly). As shown in the graph below, most experiences of animal advocacy occurred by chance. The notable exceptions (books, documentaries, and classroom education) make sense as they would be harder to stumble upon.

**Figure 45. How Participants Came To See Each Advocacy Type**

For peer-to-peer outreach, response options were changed to fit the different context of this advocacy type. 53% of participants who had experienced this advocacy form said that the other person brought up the topic in a friendly way; 27% said that the topic came up by chance; 8% said that the other person brought up the topic in an unfriendly way; 7% said that they brought up the topic themselves; and 5% said ‘other’ or that they didn’t remember.
Past Experiences With Animal Advocacy And Current Behaviors

We pre-registered analyses to compare whether there were more veg*ns (pooling vegetarians and vegans) among people who had previously experienced animal advocacy within the last five years versus those who hadn’t. We also pre-registered analyses to compare speciesism, animal protection behaviors, and relevant consumer behaviors within the last year between participants who had previously experienced animal advocacy within the last five years versus those who hadn’t.

Specifically, the chi-square test of independence was used to compare veg*ns, while two-tailed t-tests were run to compare speciesism, animal protection behaviors, and consumer behaviors among people who had previously experienced animal advocacy versus those who hadn’t. P-values for the entire sample were adjusted using the Benjamini-Hochberg correction for false discovery rate. P-values were not adjusted for the Black and Hispanic or Latinx samples due to the smaller sample sizes.

However, we can’t infer that these experiences made someone go veg*n or become less speciesist as it’s possible that people who are interested in reducing their consumption of animal products seek out more of these experiences. Given that our experiment found that advocacy more positively influences the behaviors of meat-avoiders than meat-eaters, we are inclined to think that the analyses below reflect self-selection rather than causation per se. As such, these results are presented as supplementary materials.

Keeping this caveat in mind, we found the following:

Diet

Full Participant Sample

As shown in the graph below, there were more veg*ns among participants who had experienced animal advocacy than those who hadn’t experienced it across all forms of animal advocacy investigated (all ps <.05).
Black Participants

Black participants who had experienced leaflets, documentaries, social media or blog posts, classroom education, meat-free challenges, and books were significantly more likely to be veg*n than those who hadn’t experienced each (ps < .05), as shown in the graph below.
Hispanic or Latinx Participants

Hispanic or Latinx participants who had experienced books, leaflets or flyers, classroom education, meat-free challenges, documentaries, non-disruptive protests, ads or billboards, educational information about welfare labels, and social media or blog posts were significantly more likely to be veg*n than those who hadn't experienced each (ps < .05), as shown in the graph below.

An asterisk (*) indicates that there was a statistically significant difference between groups (all ps < .05). For details on how these analyses were conducted, see the Supplementary Materials.
Speciesism

Full Participant Sample

For most forms of advocacy, individuals who had experienced them were less speciesist than those who hadn't ($p < .05$). But individuals who had seen a disruptive protest, participated in classroom education, or read a book about farmed animal suffering were more speciesist than individuals who hadn’t experienced them ($p < .05$), as shown in the graph below.
**Black Participants**

Black participants who had participated in a classroom education or read a book were *more* speciesist than those who hadn’t experienced these advocacy types, like the overall sample (*p* < .05). But, unlike the overall sample, Black participants who previously read a leaflet were also more speciesist than those who hadn’t experienced this form of advocacy (*p* < .05), as shown in the graph below.
**Hispanic Or Latinx Participants**

Like the overall sample, Hispanic or Latinx participants who had participated in classroom education or read a book were more speciesist than those who hadn't experienced these advocacy types, while those who experienced a social media post, news article, graphic video, and celebrity were less speciesist than those who hadn't experienced these advocacy types ($p < .05$).

But, unlike the overall sample, Hispanic or Latinx participants who had previously read a leaflet or participated in a meat-free challenge were also more speciesist than those who hadn't experienced these forms of advocacy ($p < .05$), as shown in the graph below.
Animal Protection & Consumer Behaviors

In our pre-registration, we planned to construct a structural and measurement model with these two groups of behaviors. However, behaviors weren’t sufficiently correlated to proceed with this type of analysis, so we instead created a more basic composite variable.

We created total scores for the animal protection behaviors and, separately, for the consumer behaviors, where a larger number means more animal-friendly behaviors.

Specifically, for the animal protection behaviors scale, we added the number of animal-friendly items selected (donation; petition; boycott; volunteering) and subtracted the animal-harming item (hunting/fishing) if selected. To make the graph easier to read, we transformed the scores by adding a value of 2 to each participant’s score so that the final scores would all be positive (this does not affect the differences between conditions). The consumer behaviors scale...
followed the same process, but there were five animal-friendly behaviors (purchased meat with a welfare label, purchased eggs with a welfare label, consumed plant-based egg substitutes, consumed plant-based dairy products, and eaten plant-based meat alternatives) and three animal-harming ones (bought clothing containing animal products, purchased meat without a welfare label, and purchased eggs without a welfare label).

**Animal Protection**

**Full Participant Sample**

Across all advocacy types, participants who had experienced animal advocacy showed more positive animal protection behaviors than participants who hadn’t experienced animal advocacy (ps < .05), as shown in the graph below.

*Figure 52. Animal Protection Behaviors*

An asterisk (*) indicates that there was a statistically significant difference between groups (p < .05) after correcting for FDR. For details on how these analyses were conducted, see the Supplementary Materials.
**Black Participants**

Unlike the overall sample, Black individuals showed more positive behaviors if they had experienced peer-to-peer outreach, non-graphic videos, news articles, meat-free challenges, leaflets, classroom education, and books than Black individuals who hadn’t ($p < .05$), as shown in the graph below.

**Figure 53. Animal Protection Behaviors In Black Participants**

Hispanic or Latinx participants showed more positive behaviors if they had experienced peer-to-peer outreach, protests (disruptive and non-disruptive), meat-free challenges, leaflets, education about welfare labels, classroom education, documentaries, ad/billboards, and books.
than those who hadn’t (ps < .05), as shown in the graph below.

**Figure 54. Animal Protection Behaviors In Hispanic Or Latinx Participants**

Across all advocacy types, participants who had experienced animal advocacy showed more positive animal consumer behaviors than participants who hadn’t experienced animal advocacy (ps < .05), as shown in the graph below.

**Animal Consumer Behaviors**

**Full Participant Sample**

Across all advocacy types, participants who had experienced animal advocacy showed more positive animal consumer behaviors than participants who hadn’t experienced animal advocacy (ps < .05), as shown in the graph below.
Black Participants

Similar to the overall sample, Black participants who had experienced most forms of animal advocacy showed more positive animal consumer behaviors than those who hadn’t (ps < .05), as shown in the graph below.
Figure 56. Animal Consumer Behaviors In Black Participants

An asterisk (*) indicates that there was a statistically significant difference between groups (p < .05). For details on how these analyses were conducted, see the Supplementary Materials.

**Hispanic Or Latinx Participants**

Similar to the overall sample, Hispanic or Latinx participants who had experienced most forms of animal advocacy showed more positive animal consumer behaviors than those who hadn't (ps < .05), as shown in the graph below.
Figure 57. Animal Consumer Behaviors In Hispanic Or Latinx Participants

An asterisk (*) indicates that there was a statistically significant difference between groups (p < .05). For details on how these analyses were conducted, see the Supplementary Materials.
Study 2

Detailed Procedure

Participants were recruited using Prolific. To be eligible for the study, participants had to live in the U.S., be at least 18 years of age, and not identify as vegan. Like Study 1, recruitment continued until there were sufficient participants to conduct the necessary statistical tests, as outlined in the pre-registration plan, and we again ensured that we had at least 150 Black and 150 Hispanic or Latinx participants.

Participants who met the relevant pre-screening criteria and who passed two attention checks were asked to fill out a Food Frequency Questionnaire that measured baseline consumption of animal products. Participants were then randomly assigned to one of 33 conditions in an 11 x 3 factorial design: advocacy type (10 types + control) x message (species: egg-laying hen, fish, or mix of farmed animals).

After exposure to a form of animal advocacy or a control stimulus (2 minutes or less in length), participants then answered questions about their beliefs, attitudes, and intentions in a randomized order. The experiment ended by asking participants an open-ended question about their thoughts on animal advocates, and demographic information.

Participants were paid USD $2 to participate in this experiment, and an additional USD $0.40 for the follow-up survey.

Pilot

We pre-tested 44 different advocacy materials on Prolific. This included the 10 advocacy types and our control condition from our experiment, but across four different species: dairy cow, egg-laying hen, fish, and a mix of different farmed animals. We measured characteristics of the advocacy that could have affected people’s behaviors or attitudes in our experiment (e.g., ‘cuteness’ of the animals depicted, the valence of the surroundings in the videos, and the level of confrontation elicited by the advocacy). For details, please refer to our pre-registration for the experiment, where we described the pilot results in the section Manipulated Variables.

The goals of the pilot were to examine similarities and differences in the characteristics of the materials, with the intention to keep them as similar as possible across conditions, and to select three of the four target species for the experiment. We chose to exclude the dairy cow condition in part because it was less similar to the other stimuli in several cases, and in part due to potentially lower impact.
Exclusion Criteria

Our participant exclusion criteria were defined in our pre-registration. Participants were automatically ejected from the study if they indicated they were vegan.

Cases were excluded after data collection if any ONE of the following conditions were met:

- The participant ID was a duplicate of another one in the file, in which case we kept the earliest complete response;
- The case was incomplete (i.e., the participant did not finish the survey);
- A non-trivial, multi-word open-ended response was an exact duplicate of another response in the file, implying copy-pasting;
- They selected “phone” in a food list*; or
- They selected “tire” in a food list*;

Participants were excluded after data collection if any TWO of the following conditions were met:

- They failed a quality check on an open-ended item (which occurs if it has very poor grammar, is unintelligible, is very clunky, or does not answer the question); or
- They completed the survey in less than one third of the median time

* It should be noted that participants were erroneously excluded from the study if they failed one of the two attention checks, thereby resulting in a stricter exclusion criteria than planned.

Detailed Analysis Method

Effects Of Animal Advocacy

For each outcome variable, we ran linear regression models (for composite scores or animal product servings) or logistic regression models (for diet pledge and signing a petition). For each model, the key predictor variable was advocacy type (11 levels: 10 advocacy conditions, and control as the reference level), while controlling for target species (3 levels: egg-laying hen, fish, and mix of farmed animals), which was effect-coded. For the model predicting animal product consumption two weeks post-treatment, we additionally controlled for baseline servings of animal products (as a centred covariate). For all of these models, we corrected for multiple testing using the Benjamini-Hochberg correction for false discovery rate (i.e., FDR correction) across the ten contrasts for advocacy type.

We also explored the interaction between advocacy type (control set as the reference) and self-identified diet (each meat-eater and meat-avoider group set as the reference) for all outcome variables using regression analyses. As mentioned earlier, $P$-values were not adjusted
here since these were exploratory analyses and applying corrections to the subset of meat-avoiders ($n = 605$) would substantially limit our ability to find useful effects.

**Effects Of Species Targeted**

Lastly, we ran additional regression models where advocacy type was effect coded and species was dummy coded (with a mix of farmed animals as the reference level) to explore the effect of species targeted on all outcome variables. For all of these models, we corrected for multiple testing using the Benjamini-Hochberg correction for false discovery rate across the two contrasts for species.

Likewise, we also explored the interaction between advocacy type (control set as the reference) and species (each species set as the reference) for all outcome variables. Here, contrasts between each advocacy type and the control were stratified by species. $P$-values were corrected since there were 30 contrasts per outcome behavior.

**Effect Of Participant Characteristics**

To explore whether all of our outcome measures were influenced by participants’ demographic characteristics, we ran separate regression models per demographic variable, while also including advocacy type and species in the models (both effect-coded). Baseline consumption of animal products was additionally controlled for in the models predicting follow-up animal product consumption. We also ran regression models with all demographic variables together as predictor variables to better understand which demographic characteristics are most influential in predicting our outcome measures when they are adjusted for each other.

We also explored the interactions between advocacy type and age, income, gender, education, and political affiliation by running separate models with the inclusion of these interaction terms. Here, control was set as the reference for advocacy type, while message was effect-coded.

To explore the interaction between advocacy type and ethnicity, we looked at whether the inclusion of this interaction term further improved model fit compared to the main effect models, and if it did, then we interpreted the results. This analysis was done differently since ethnicity was a categorical variable with six levels.

$P$-values were not adjusted here since these were exploratory analyses.

**Responses To Animal Advocacy**

To investigate whether self-identified diet predicted people’s responses to advocacy, we ran regression analyses where each response was the outcome variable and predictor variables were self-identified diet (meat-avoider as the reference), advocacy type (effect coded), and species (effect coded).

Further, we explored whether participants’ responses to animal advocacy predicted our three key outcome behaviors (animal product consumption, diet pledge, and petition) using regression
analyses. Predictor variables were the specific response to advocacy, advocacy type (effect coded), and species (effect coded). For the models predicting follow-up animal product consumption, we controlled for baseline consumption (as a centered covariate).

P-values were not adjusted here since these were exploratory analyses.

**Sensitivity Analyses**

We ran two types of sensitivity analyses in our experiment, as written in our pre-registration. First, we re-ran all of the main models investigating the effects of animal advocacy, excluding participants who watched less than half of the video (for video conditions) as recorded by Qualtrics’ timer. This allowed us to note whether results would be stronger if they included only people who got the full effect of the advocacy videos. However, there was still no significant difference between participants who experienced animal advocacy or the control condition on any of the dependent variables.

Additionally, we re-ran all of the main models comparing the non-disruptive protest condition to the control condition with the egg conditions excluded. This was done to examine whether the results were influenced by the non-disruptive egg protest being overly disruptive, as identified during pilot testing. However, there was still no significant difference between participants who experienced the non-disruptive protest or the control condition on any dependent variable after removing the egg stimuli.