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Image and Slogan Message-Testing

Research Report

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Summary of findings

This report investigates the impact of different advocacy posters, similar to those often used in the animal freedom movement. The primary aim was to explore how different imagery—ranging from scenes of thriving animal communities to distressing farm conditions—affects emotional engagement and the persuasiveness of messages. Additionally, the research assessed the effectiveness of slogans and various calls to action to determine which strategies most inspire support for systemic change or individual behaviour change.

Methodology

Four experiments were conducted with a total of over 7,000 participants recruited online. Each participant viewed one of several uniquely designed posters and rated their agreement with the messages, emotional responses, and motivation to support the cause. The first two experiments used the images of chickens, and the second two used images of pigs. A range of images and slogans was tested, including contrasting idyllic and distressing scenes, and calls to action like "Go Vegan" versus "Support a plant-based future."

Key Findings

Impact of Imagery

Posters depicting harsh conditions for animals generally elicited the strongest emotional reactions, being rated as clearer, more motivating, and more effective than positive imagery alone. Juxtaposing hopeful scenes with distressing imagery yielded mixed results, sometimes enhancing emotional impact, while in other cases diluting it.

The driving factors appeared to be the narrative that could be created about the images, and the emotional responses to them (see below).

Slogan and Call-to-Action Effectiveness

Slogans which raised awareness of welfare washing ("The animal agriculture industry wants us to believe this is free-range...but this is the reality") were found most effective at prompting action. Calls to action favouring systemic change ("Support a plant-based future") were generally more motivating than individual-focused commands ("Go Vegan").

Emotional and Kinship Factors

We found that images which evoked empathy had the largest effect on persuasiveness, followed by feelings of similarity and family. Ratings of perceived intelligence and feeling sad in response to seeing the poster were also effective - to a lesser extent. Ratings of happiness, personality, and emotions seemed to have no effect on support for animal protection. Ratings of perceived manipulateness had a counter-productive effect on effectiveness.

Implications

The findings underscore the importance of strategic imagery and narrative framing in animal advocacy. Campaigns should carefully balance emotional engagement with a sense of hope and kinship to maximise public support. Additionally, fostering a perception of shared values and community with our animal cousins can strengthen the movement's message and reduce backlash.

Introduction

Posters featuring eye-catching images and strong slogans are ubiquitous in the animal freedom movement, often used to grab the attention of the public and spread important messages. Given their widespread use and potential to influence a large audience, it is essential to understand exactly how elements of such materials affect people's perceptions and support for animal freedom. By studying the impact of various images, slogans, and calls to action, the aim of this research was to provide actionable insights that can help animal freedom groups communicate more effectively, ultimately leading to greater public support for the movement.

Specifically, the research objectives are as follows: First, to assess how different images - ranging from those depicting animals in natural, healthy environments to those showing animals in distressing conditions - affect viewers' emotional responses, perceptions of the message's clarity, and overall agreement with the message. Second, to examine the influence of various slogans on the viewers' agreement with the message, the perceived clarity of the message, and its overall impact. Finally, this research aims to compare the effectiveness of different calls to action, such as "Go Vegan", "Support a plant-based future", and "Support a transition away from farming animals" in motivating individuals to support animal rights causes, and whether individual-based or system-based changes are more appealing to the general public. In summary, the research addresses a critical gap in understanding how different elements of advocacy messages—imagery, slogans, and calls to action—resonate with the UK public.

Experiment one

Introduction

Experiment one investigated the impact of various poster designs on promoting animal freedom. We engaged 2,606 participants who were shown one of forty distinct posters, each integrating different images, slogans, and calls to action concerning animal freedom. The objective is to determine how these components influence viewers' understanding and response to the advocacy messages.

For experiments one and two, we chose farmed chickens as the context animal. The focus on chickens serves as an initial point of inquiry due to their status as one of the most extensively farmed animals, making them a critical subject for discussions on animal freedom. The imagery ranges from depictions of chickens thriving in natural environments to portrayals of their suffering in farming contexts. We tested the following slogans:

1. I am someone not something.
2. What happens to me matters to me.
3. I deserve happiness too.
4. I deserve freedom too.

As well as the following calls-to-action: "Go vegan" or "Support a plant-based future". The aim of testing these two calls to action were to test the effect of individual ("Go vegan") or systemic (Plant based future) change as potential Solutions.

Method

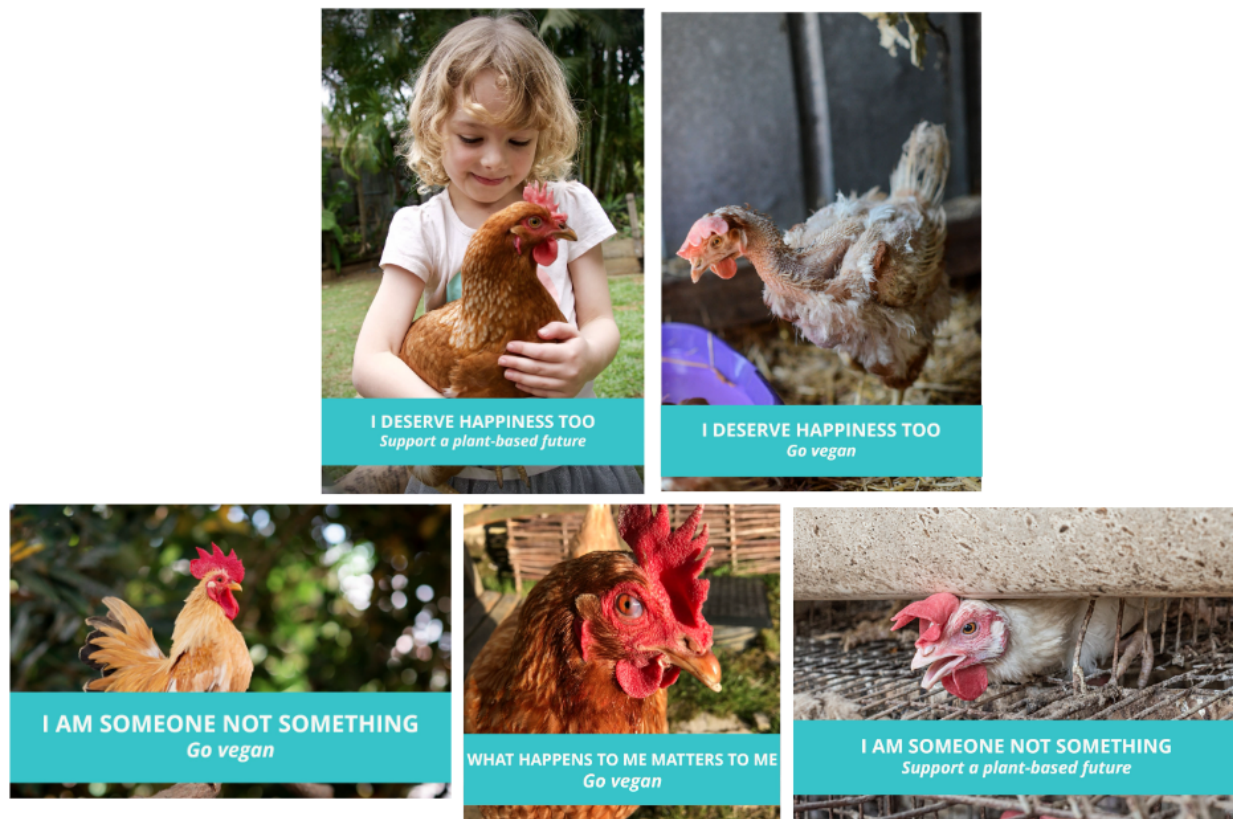
Participants

2,606 participants were recruited through prolific.com and reimbursed financially for their participation. Participants were recruited using a first-come-first-serve sampling method. The Female:Male ratio was 1.42:1. The median age was 39, with a standard deviation of 13.57.

Procedure

Each participant saw one of forty possible posters. The posters were created using a combination of 5 images, 4 slogans, and two call-to-actions. All posters can be found in Appendix one. Figure 1 shows a selection of example posters, including each of the five images.

Figure 1. *Examples of the posters used in Experiment 1:*



Description of images

1. A healthy looking chicken in profile in a natural environment.
2. A healthy looking chicken staring directly at the camera.
3. A young girl holding a healthy looking chicken.
4. An unhealthy looking chicken in a farm/sanctuary with a pale and dropping comb, missing many feathers that have been plucked.
5. A chicken pressing their head through a gap in the floor of a cage. The cage floor comprises a metal grid covered in faeces.

Slogans

1. I am someone not something.
2. What happens to me matters to me.
3. I deserve happiness too.

4. I deserve freedom too.

Calls to action

1. Go vegan.
2. Support a plant-based future.

After viewing the poster, participants were asked to write what they felt the poster was trying to convey, followed by various questions about the poster:

1. How clear is the message being conveyed? [Extremely clear, Very clear, Somewhat clear, Not to clear, Not at all clear].
2. How much do you agree with the message being conveyed? [Strong agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree].
3. How effective do you feel the image and text are? [Extremely effective, Very effective, Somewhat effective, Not so effective, Not at all effective].
4. How emotionally manipulative is the text and image? [A great deal, A lot, A moderate amount, A little, Not at all].
5. How motivated are you to support this cause? [A great deal, A lot, A moderate amount, A little, Not at all].

They were then given the opportunity to provide any further comments followed by the following animal attitudes scale we have developed in previous studies. Participants were asked how strongly they agreed with the following statements. The response options for all scale items were [Strongly disagree, Somewhat disagree, Neither agree nor disagree, Somewhat agree, Strongly agree].

Meat-eating justifications scale

1. Animals are a necessary resource for human benefit.
2. Killing animals for food is unnecessary (Reverse scored).
3. We should all try to reduce our meat consumption (Reverse scored).

Sentientism

1. Many animal species possess intelligence levels similar to humans.
2. Many animals are capable of feeling emotions similar to humans.
3. Many animals have conscious experiences.

Anthropocentrism

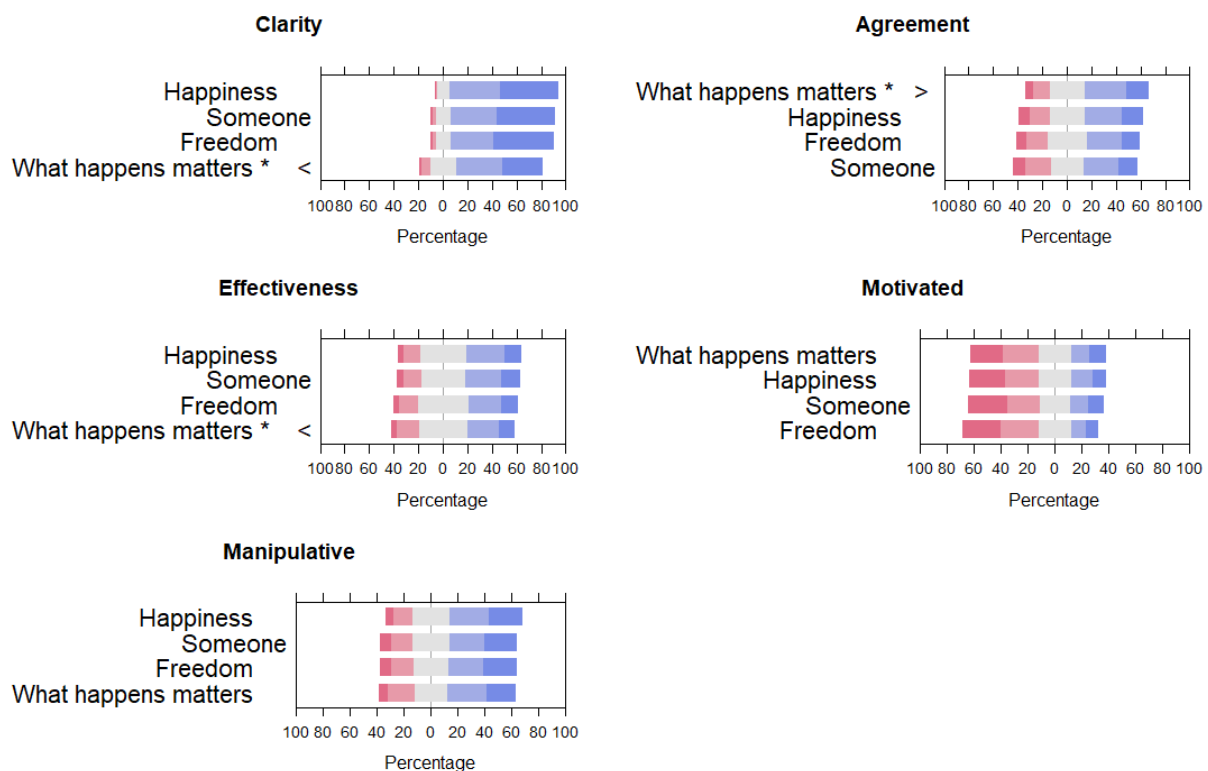
1. Different species have different levels of moral worth.
2. Human life is more valuable than the life of other animals.
3. It's acceptable to prioritise the needs of humans over those of other animals.

Results

The analysis was conducted by fitting a Bayesian ordinal logistic regression model to responses to the 5 questions about the posters, with slogan, image, and call-to-action as the predictor variables with no interaction terms. We used the default priors set by the BRMS package in R, and ran 10,000 MCMC samples with 1000 burn-in samples.

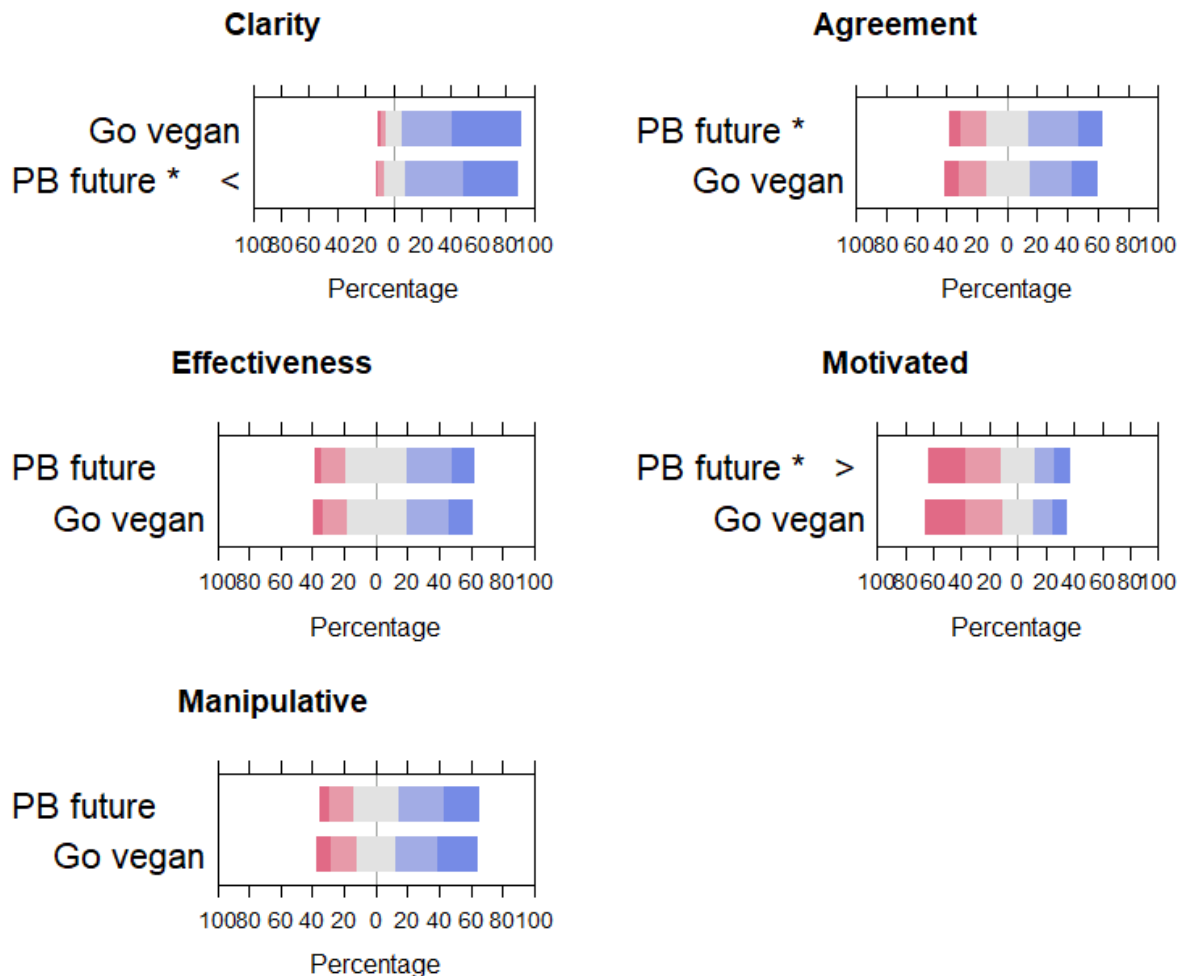
We found that, amongst ratings of the posters with the different slogans (Figure 2), there were no significant differences, apart from posters containing slogan 2 ("What happens to me matters to me"), which were rated as less clear, less effective, but were agreed with more.

Figure 2. Poster ratings split by slogan (text). The > icon indicates 95% of the posterior probability distribution for the estimate of the log odds was greater than 0 (conversely < indicates 95% below 0). The * indicates a significant difference according to a null-hypothesis significance tests (NHST).



Amongst the two calls to action (Figure 3), posters with "Support a plant-based future" were rated as more agreeable and motivating, but less clear than posters with "Go vegan". Although statistically significant, the differences in ratings of posters with the two calls to action were small.

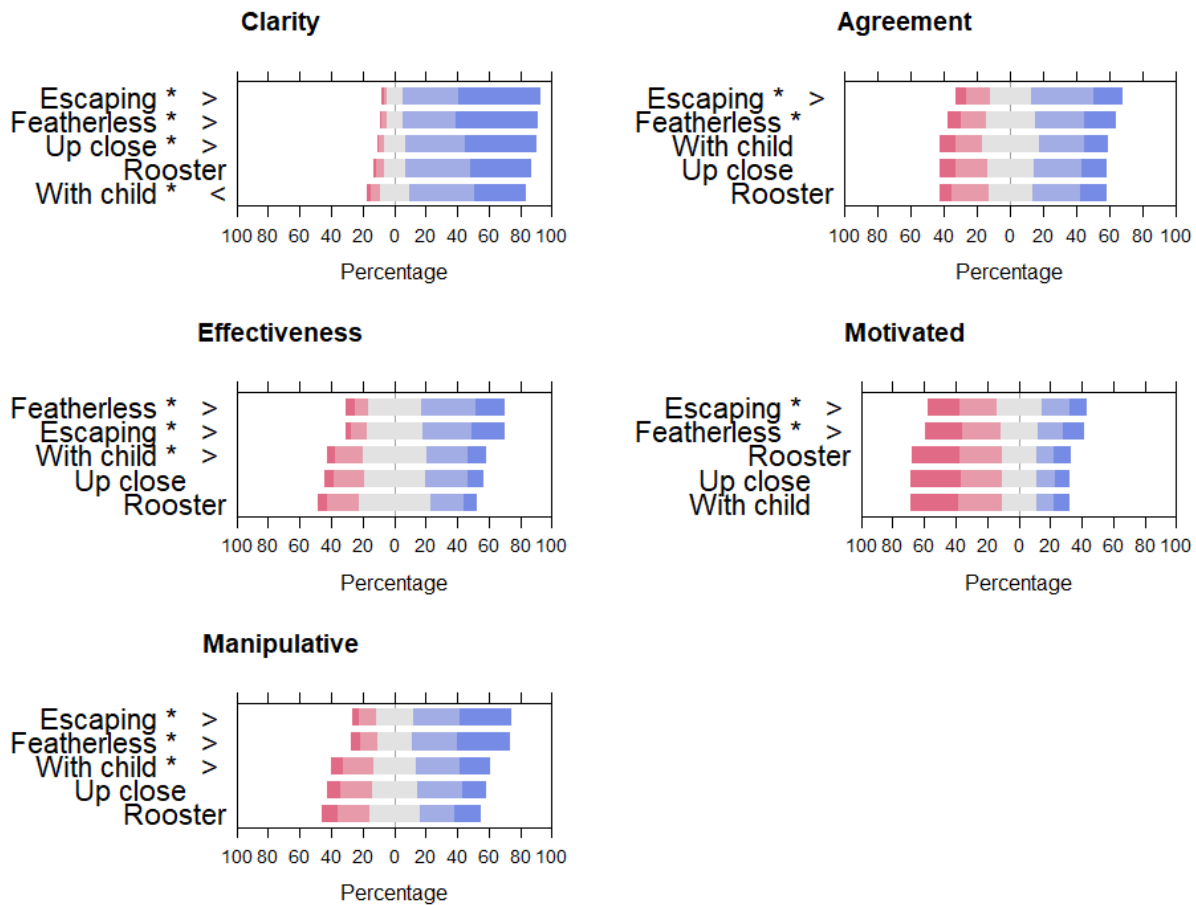
Figure 3. Ratings of the posters used in Experiment one, split by the call-to-action used.



The largest differences between ratings of the posters could be attributed to the images used (Figure 4). In particular, posters containing the two pictures depicting cruel conditions (pictures 4 and 5) were rated as the clearest, the most agreeable, the most effective, the most motivating, and the most manipulative. Posters containing the image

of a young girl holding a chicken were rated as least clear, somewhat effective, and somewhat manipulative. The other two images of individual healthy-looking chickens (pictures 1 and 2) seemed to have little effect on ratings.

Figure 4. *Poster ratings in experiment one, split by the image used.*



Experiment two

Introduction

In Experiment 2, we shifted our focus to explore the effect of juxtaposing pleasant and unpleasant imagery in addition to the effect of how the slogan effects the interpretation of the image. We engaged 1,397 participants, assessing their reactions to a series of 15 posters, each designed to prompt reflections on the transition away from farming animals. The posters employed imagery that either showcased chickens in idyllic settings or highlighted the grim realities of their confinement, with some juxtaposing both to starkly contrast the perceived versus actual conditions of farmed animals.

We tested three narratives through the messages associated with the images: a 'welfare washing' narrative which compared how adverts portray free-range farming, versus the reality, second, a narrative which emphasised freedom, and finally, a narrative that emphasised that no matter how they are farmed, they do not want to be killed.

As an additional exploratory analysis, we asked gauging participants' about their attitudes towards a broad spectrum of social justice issues. With this approach, we aimed to gain insights into how advocacy for animal freedom intersects with broader social justice movements.

Method

Participants

1,397 participants were recruited through prolific.co and reimbursed financially for participation. Participants were recruited using a first-come-first-serve sampling method. The Female:Male ratio was 1.45:1. The median age was 41, with a standard deviation of 13.54.

Procedure

At the beginning of the survey, we asked participants to rate how strongly they felt about several social justice issues [Completely unimportant to me, Mostly unimportant to me, Slightly unimportant to me, Neutral / no strong feelings, Slightly important to me, Mostly important to me, Extremely important to me]. The issues (presented in a random order) were:

1. Animal rights
2. Racism
3. Gender equality and reproductive rights
4. Climate change
5. Poverty
6. Immigration
7. Mental health
8. LGBTI rights
9. Homelessness

Next, the participants saw one of 15 posters. All posters had the same call to action: "Support a transition away from farming animals". The images used were as follows:

1. An image of chickens roaming in a grassy meadow.
2. An image of hundreds of chickens confined in a barn and tightly packed together.
3. An image of a single unhealthy looking chicken in a farm/sanctuary with a pale and dropping comb, missing many feathers that have been plucked.
4. An image of chickens roaming in a grassy meadow, juxtaposed against an image of hundreds of chickens confined in a barn and tightly packed together.
5. An image of chickens roaming in a grassy meadow, juxtaposed against a single unhealthy looking chicken in a farm/sanctuary with a pale and dropping comb, missing many feathers that have been plucked.

We tested three messages, which differed slightly depending on whether a juxtaposition was present:

1. The animal agriculture industry wants us to believe this is what free-range looks like... But this is the reality.
 - a. Free-roaming chickens without juxtaposition: The animal agriculture industry wants us to believe that this is what free-range looks like.
 - b. Farmed animal images without juxtaposition: This is the reality of free-range farming that the industry does not want us to see.
2. Imagine a world where all animals can live free... rather than be denied their freedom.
3. No matter how they are farmed... They do not want to be killed.

After viewing the poster, the participants then answered the same questions as the participants in Experiment one. Examples of some of the posters used are presented in Figure 5.

Figure 5. *Examples of the posters used in Experiment two.*



Results

Main analysis

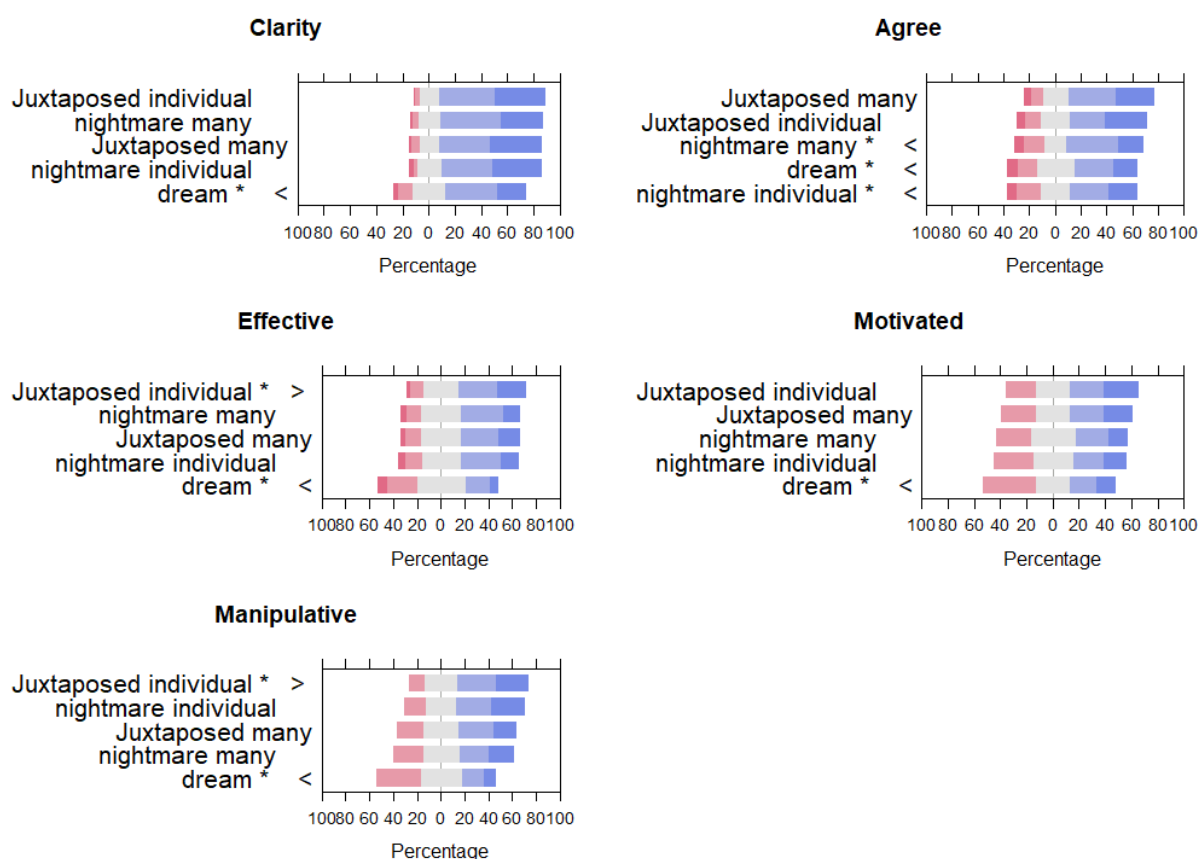
Plots containing the ratings of all posters from both experiments can be found in Appendix three. The analysis was conducted by fitting a Bayesian logistic ordinal regression model to responses to the 5 questions about the posters, with image and slogan as predictors, with no interaction terms. We used the default priors set by the BRMS package in R, and ran 10,000 MCMC samples with 1000 burn-in samples.

Posters containing image 3 (healthy chickens roaming an open field) were the least effective - being rated as the least clear, second lowest agreement, and least effective, motivating, and manipulative. On the other hand, posters containing depictions of cruel living conditions alongside this image (images 1 and 2) were the most effective, being rated as the clearest, most agreeable, and most motivating.

The posters containing a juxtaposition of a shed of farmed chickens and free-roaming chickens, were rated as more agreeable, but just as equal in terms of clarity, effectiveness, motivation, and manipulateness. In contrast, the posters containing the juxtaposition of a single chicken in poor health against the free-roaming chickens were rated as more effective, more motivating, and more manipulative.

These results suggest that the most effective imagery are those that contain a juxtaposition between healthy "happy" chickens, and single individuals with poor wellbeing.

Figure 6. Comparison of poster ratings in experiment two, split by image content.



The three slogans tested were all perceived as equally clear. Slogan 1 ("The animal agriculture wants us to believe this is what free-range looks like... but this is the reality") was rated as the most effective, motivating, and manipulative.

Slogan 2 ("Imagine a world where all animals can live free... rather than be denied their freedom") was agreed with the most, and rated the least manipulative.

Slogan 3 ("No matter how they are farmed... they do not want to be killed") was rated lowest in agreement, effectiveness, and motivation.

All slogans were rated as equally clear.

These results suggest that a narrative around pulling back the curtain on industry propaganda ('welfare washing') might be the most effective at moving the public towards supporting an end to farming animals. In contrast, a narrative around all animals being able to live in freedom may increase agreement with the issue, but not move participants. Finally, a narrative that focuses on farmed animals not wanting to die appears to be the least effective, perhaps due to beliefs around chicken's lack of agency, or due to an overpowering welfarist narrative.

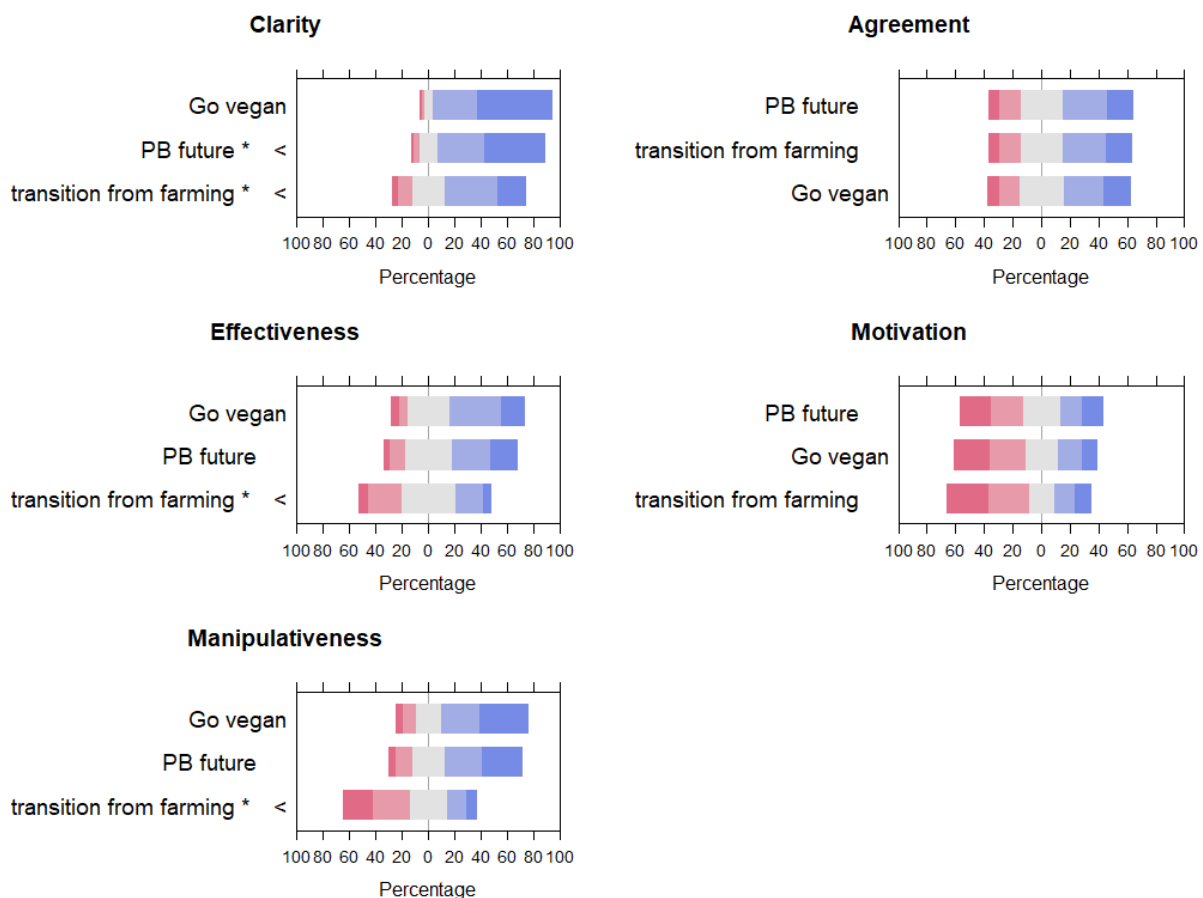
Figure 7. Comparison of poster ratings in experiment two, split by slogan used.



Comparison of calls-to-action across experiments

We compared ratings of the posters, split by the call to action, across both experiments. To make a fair comparison, we only analysed the posters containing images of the low-welfare chicken, which appeared in both experiments. Of course, one slight weakness to this analysis is that the slogans differed between those with call-to-action 3 (Experiment 2) than from those used in calls-to-action 1 and 2 (Experiment 1).

Figure 8. Comparison of poster ratings across both experiments, split by the call-to-action used.



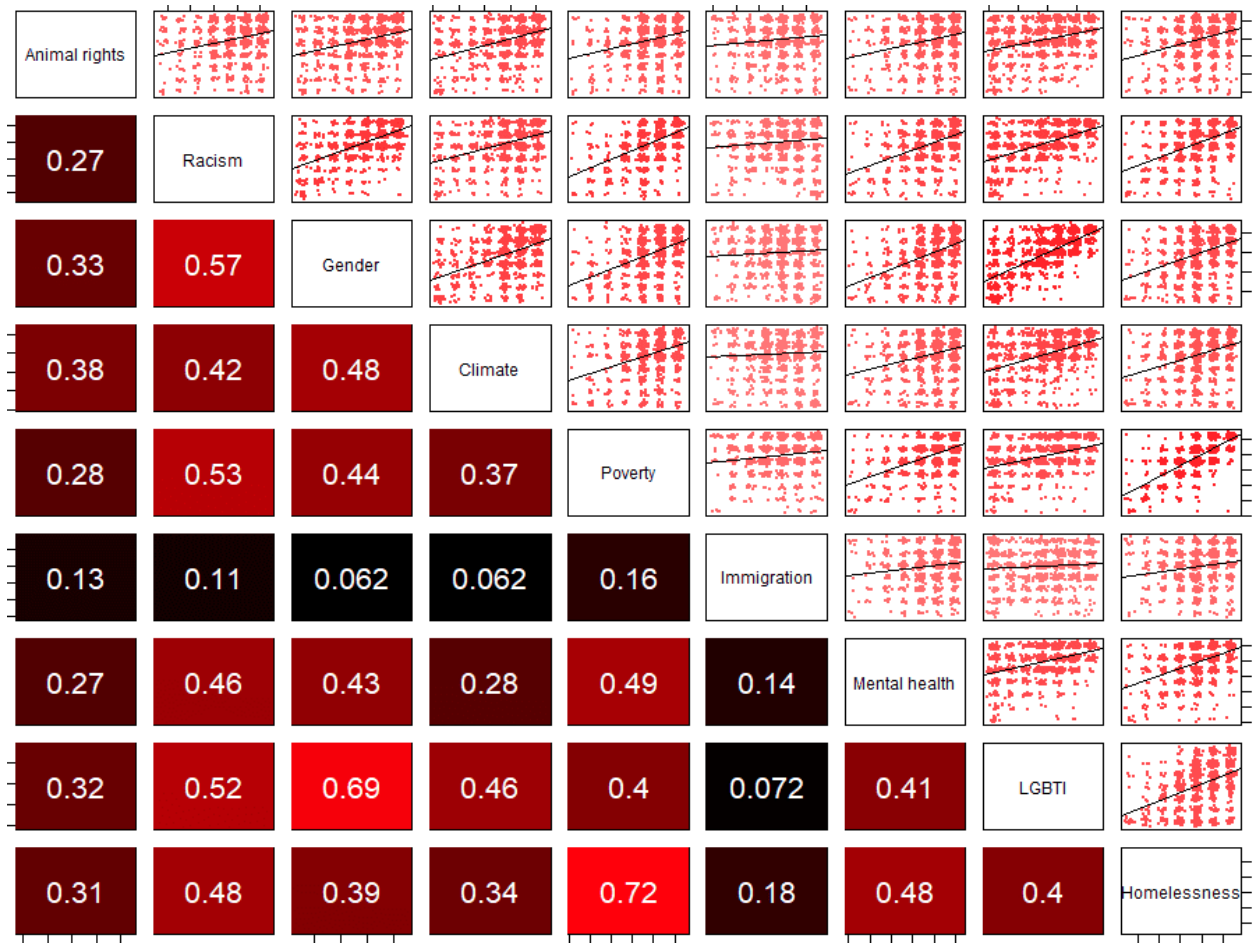
Overall, support for these three calls-to-action were quite high, with 44-56% (depending on the action) responding either "agree" or "strongly agree" with the message, and

22-32% responding "a lot" or "a great deal" to the question of how motivated they are to support the cause. Call to action 1 ("Go vegan") was perceived as the clearest, most effective, and most manipulative call-to-action. Call to action 2 ("Support a plant-based future") was rated as slightly less clear than call-to-action 1, but equally effective, and equally manipulative. Call to action 3 ("Support a transition away from farming animals") was rated as the least clear, least effective, and least manipulative. There were no significant differences between calls-to-action in action agreement, and motivation to support the action.

Correlations between concern for animal rights and other issues

Figure 9 plots the correlation matrix (bottom left) and scatter plots (top right) of importance ratings for each nine social justice issues (Animal rights, Racism, Gender, Climate, Poverty, Immigration, Mental health, LGBTI, and Homelessness). Of particular importance to us, the importance of animal rights was positively correlated with importance ratings of all issues. There were correlations with a small effect size (coefficients <0.3) with Racism, Poverty, Immigration, and mental health. There were correlations with medium effect size (coefficients $0.3-0.5$) with Gender, Climate, LGBTI, and homelessness.

Figure 9. *Correlation matrix and scatter plots of social justice issues. Strength of the colour represents the strength of the correlation, measured using Pearson's correlation coefficient.*



Experiment three

Methods

Participants

A representative sample (based on age, ethnicity, and gender compared to the 2021 UK census) of 1,017 UK participants were recruited through the participant recruitment platform prolific.com.

Stimuli

Posters

The posters were one of either five 'dream' pictures or five 'nightmare' pictures. The images were surrounded by the text "Billions of animals are farmed and killed each year, denied their freedom to live" and "Let's create a future where all beings live free by supporting an end to farming animals".

Image ratings

After viewing the above image, please rate how strongly you agree or disagree with the following statements [7 point scale from Strongly disagree to Strongly agree].

There are no right or wrong answers - Please be completely honest.

1. I feel a great deal of empathy towards the pig(s) in this image.
2. This image makes me feel happy.

3. This image makes me feel sad.
4. This image makes me feel disgusted.
5. The pig(s) in this image appears to be intelligent.
6. The pig(s) in this image has a strong personality.
7. The pig(s) in this image express their emotions clearly.
8. The pig(s) in this image are similar to humans in their emotional capacity.
9. I support the idea of pigs having the freedom to play, thrive and live their lives as they choose.
10. Pigs have the right to live free from all forms of exploitation.
11. Pigs deserve not to be killed.
12. Pigs deserve not to be harmed.
13. I find this image persuasive.
14. The message conveyed by the image is clear to me.
15. The image used is emotionally manipulative.
16. I am motivated to support this cause.
17. I feel connected with the pig(s) in this image.
18. I see the pig(s) in this image as part of our extended animal family.

Animal attitude scale

Please rate how strongly you agree or disagree with the following statements. There are no right or wrong answers.

Responses were on a 7-point scale from Strongly disagree - Strongly Agree.

1. Animals are a necessary resource for human benefit.
2. Killing animals for food is unnecessary.
3. We should all try to reduce our meat consumption.

4. Many animal species possess intelligence levels similar to humans.
5. Many animals are capable of feeling emotions similar to humans.
6. Many animals have conscious experiences.
7. Different species have different levels of worth.
8. Human life is more valuable than the life of other animals.
9. It's acceptable to prioritise the needs of humans over those of other animals.

Procedure

Participants each saw one of the posters, followed by the ratings of their agreement with the items in the image rating scale, and the animal attitudes scale.

They were also given the opportunity to provide qualitative feedback after reading the following prompt: "We are interested in finding ways to convince the general public to support animal freedom in all of its forms. This would mean moving towards a future where animals are no longer exploited, harmed or killed by humans - such as in farming, scientific research, or in sport. What do you believe would make campaigns such as the one above more convincing towards that goal?"

Results

We analysed the data using an ordinal logistic regression model, implemented via the BRMS package in R. The independent variable was the type of image presented, and the dependent variables were the various image ratings provided by participants. For each analysis, we ran 10,000 samples, with a burn-in of 500 samples, and relied on default priors throughout the analysis.

Figure 10 displays the response distributions. Overall, the 'nightmare' images were the most effective in eliciting emotional responses from participants. These images led to higher levels of empathy towards pigs, making participants feel more sad and less happy. They also provoked stronger feelings of disgust and increased the likelihood of participants feeling persuaded to support the cause. However, the impact on motivation was less consistent, as one or two of the nightmare images did not significantly enhance motivation.

Despite these emotional responses, there was no significant effect of the images on general attitudes toward animal freedom. Participants expressed high baseline support for the following statements, irrespective of the images they were shown:

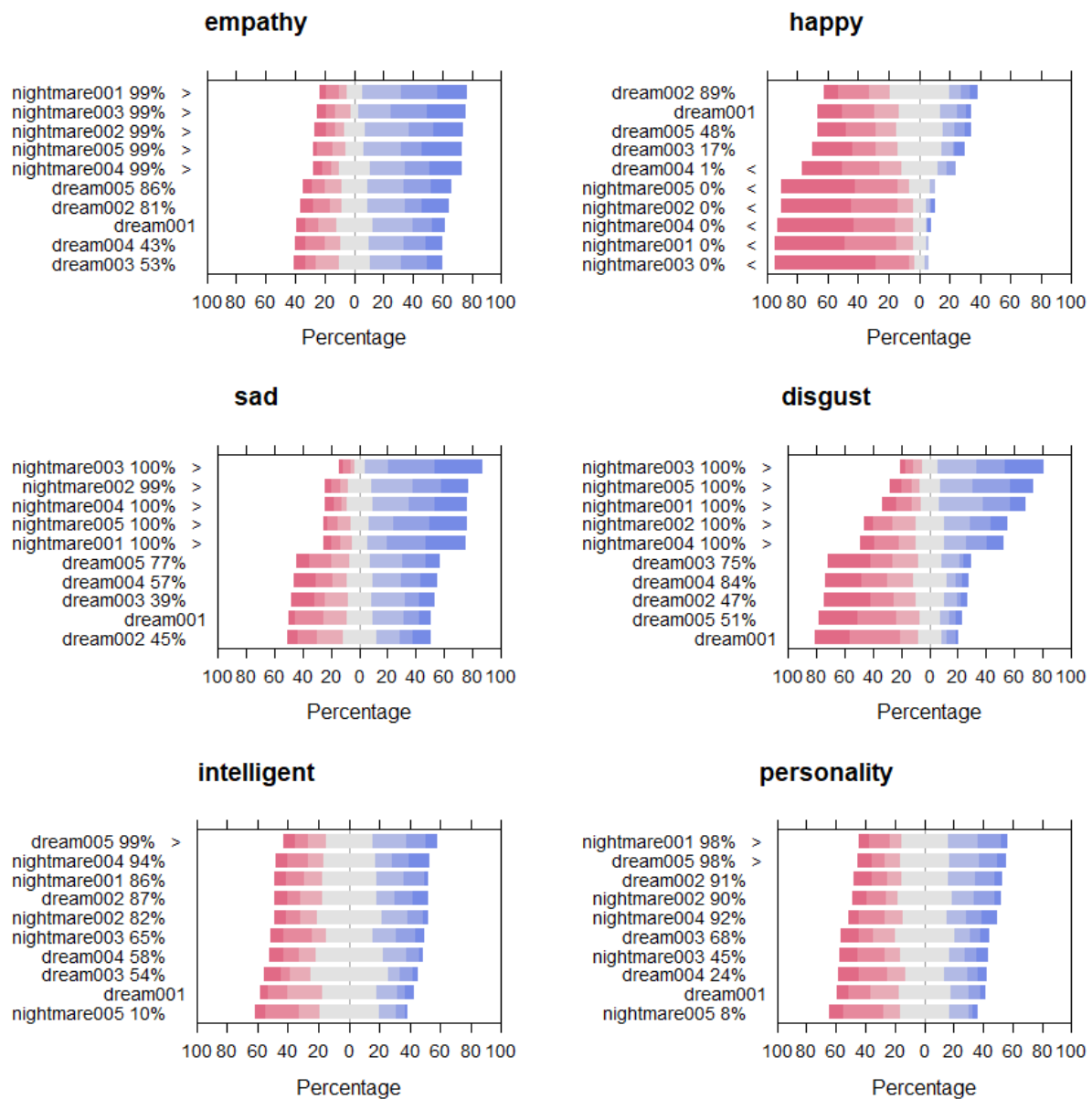
1. I support the idea of pigs having the freedom to play, thrive and live their lives as they choose.
2. Pigs have the right to live free from all forms of exploitation.
3. Pigs deserve not to be killed.
4. Pigs deserve not to be harmed.

Regarding the sense of kinship, there was no notable effect from the images, except one nightmare image featuring multiple piglets facing the camera on a farm, which slightly increased feelings of connection. Responses to kinship-related statements, such as "I feel connected with the pig(s) in this image" and "I see the pig(s) in this image as part of our extended animal family," showed minimal variation across image types.

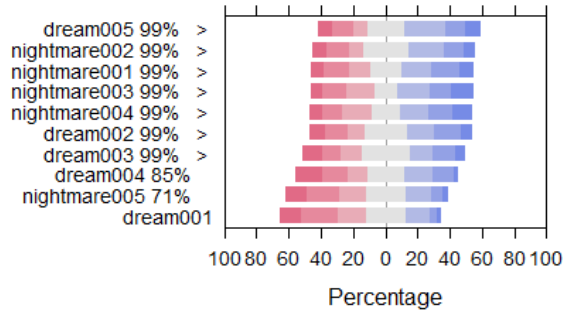
The 'dream' images were less clear in their impact, especially those depicting a wild boar or a dog playing with a pig. However, Dream 5, showing a piglet and mother nuzzling each other, was somewhat effective at increasing participants' perceptions of pig-human similarity in terms of emotions, intelligence, and personality. Interestingly, Nightmare 1, with the multiple piglets facing the camera, also significantly increased perceptions of pig emotions, personality, and similarity.

In fact, all the nightmare images were successful in raising participants' awareness of pigs' emotional capacities. This highlights the strong emotional responses that distressing imagery can evoke, though its broader impact on motivation and kinship remains more variable.

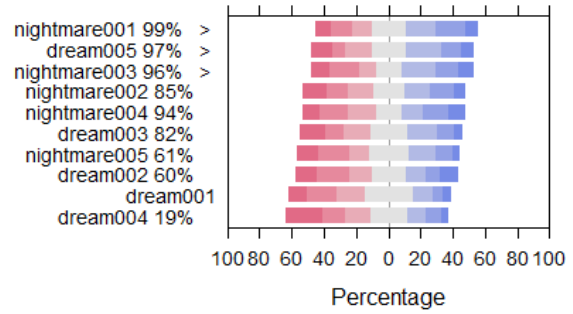
Figure 10. Comparison of poster ratings in experiment two, split by image content.



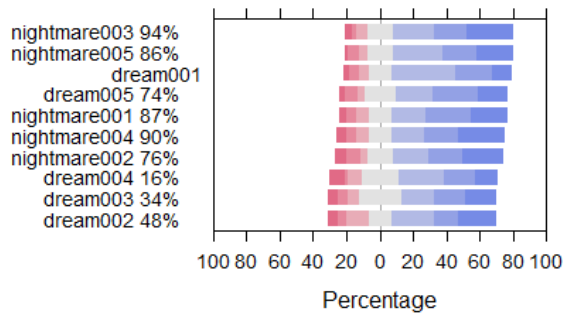
emotions



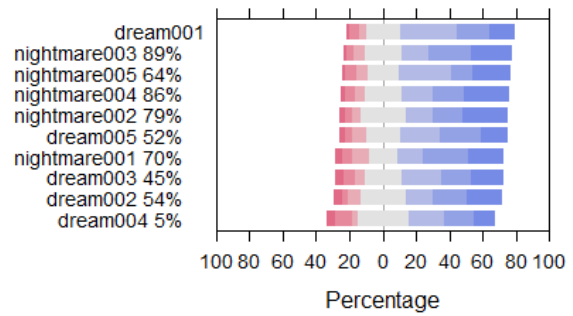
similar



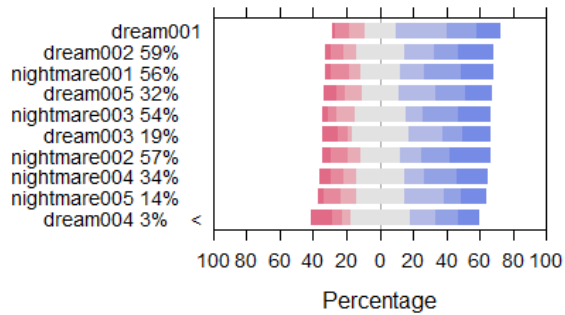
supportFreedom



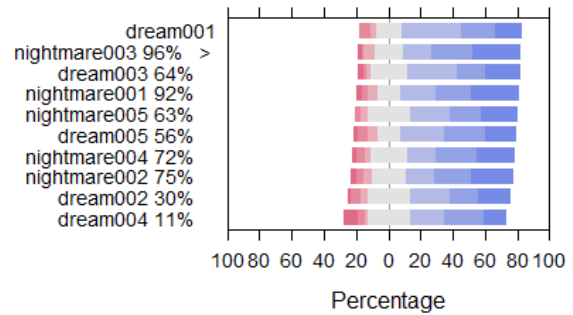
freeFromExploitation



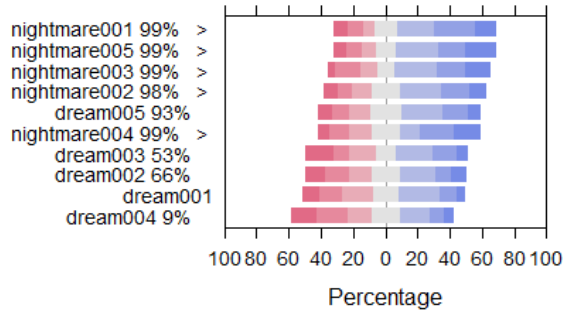
NoKill



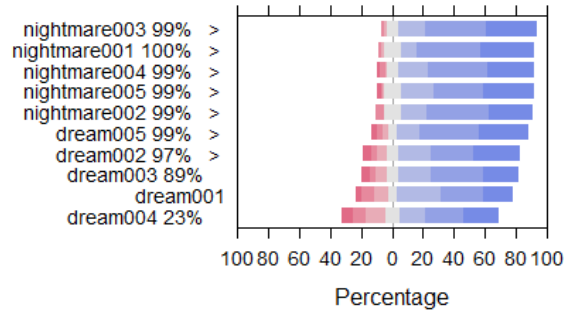
noHarm



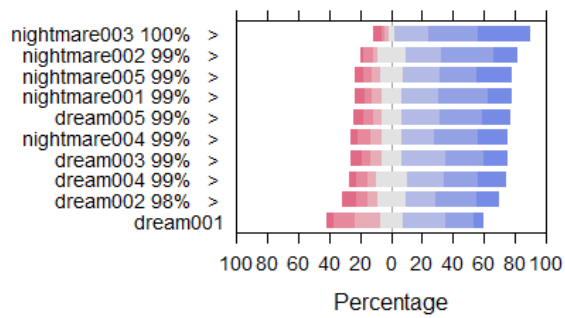
persuasive



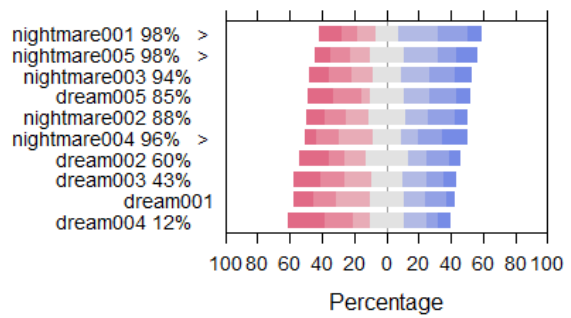
clear



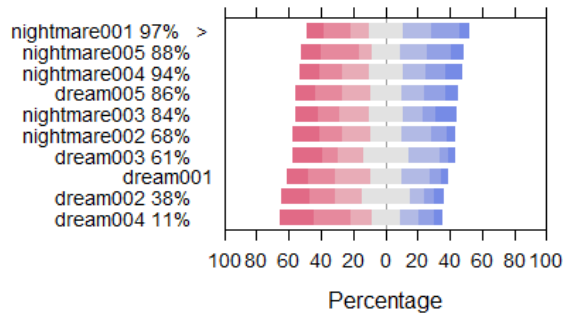
manipulative



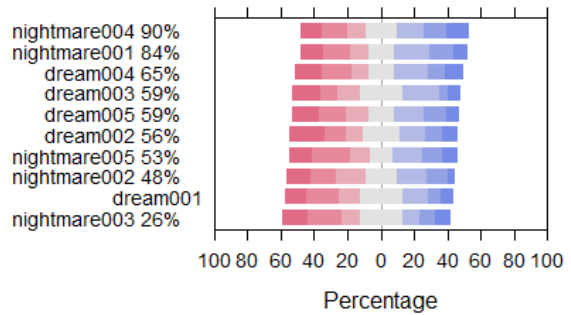
motivated



connected



family



Experiment four

Method

Participants

A representative sample (based on age, ethnicity, and gender compared to the 2021 UK census) of 2,544 UK participants were recruited through the participant recruitment platform prolific.com.

Stimuli

Pre/post attitudes scale

The order of all items on all sub-scales was fully randomised.

Please rate how strongly you agree or disagree to the following statements.

Responses were on a 7-point scale from Strongly disagree - Strongly Agree.

1. Humans should have the right to use animals for food, clothing, and other purposes.
2. Animals should not be used for food, regardless of how well they are treated.
3. It would be better if society did eventually stop using animals for human benefit (e.g., food, entertainment, clothing) all together.
4. I would support a law which protected the rights of all animals in not being harmed, exploited or killed - even if it would mean that humans could no longer use animals for their meat, milk, eggs, or other body parts.
5. Elevating the status of animals through rights could diminish the perceived value

of human life.

6. Animals are fundamentally different from humans, and should not be given similar rights.
7. Animals deserve legal protections similar to humans because they are sentient beings capable of joy and suffering.
8. Protecting animal freedom is as important as protecting human freedom.
9. Improving animal rights reflects moral progress in our society.
10. The act of granting more rights to animals can help reduce violence and cruelty in society at large.
11. More rights for animals can enrich our culture by fostering a deeper appreciation and respect for all life.
12. Increasing animal rights can negatively impact industries that rely on animal products.
13. More rights for animals would be too disruptive to people's lifestyles.
14. Policies that initially aim to stop animal cruelty could evolve into restrictive regulations that interfere with personal freedoms.
15. Enhancing animal rights could threaten traditional practices and cultural heritage that involve animals.
16. There is nothing wrong with the way we currently treat other animals.
17. There might be some problems with the way we currently treat some animals, but nothing needs to change fundamentally.

Image-rating scale

After viewing the above image, please rate how strongly you agree or disagree with the following statements.

There are no right or wrong answers - Please be completely honest.

Responses were on a 7-point scale from Strongly disagree - Strongly Agree.

1. I feel a great deal of empathy towards the pig(s) in this image.
2. This image makes me feel happy.
3. This image makes me feel sad.
4. This image makes me feel disgusted.
5. The pig(s) in this image appears to be intelligent.
6. The pig(s) in this image has a strong personality.
7. The pig(s) in this image express their emotions clearly.
8. The pig(s) in this image are similar to humans in their emotional capacity.
9. I support the idea of pigs having the freedom to play, thrive and live their lives as they choose.
10. Pigs have the right to live free from all forms of exploitation.
11. Pigs deserve not to be killed.
12. Pigs deserve not to be harmed.
13. I find this image persuasive.
14. The message conveyed by the image is clear to me.
15. The image used is emotionally manipulative.
16. I am motivated to support this cause.
17. I feel connected with the pig(s) in this image.
18. I see the pig(s) in this image as part of our extended animal family.
19. This image makes me feel conflicted.

Animal attitude scale

Please rate how strongly you agree or disagree with the following statements. There are no right or wrong answers.

Responses were on a 7-point scale from Strongly disagree - Strongly Agree.

1. Animals are a necessary resource for human benefit.
2. Killing animals for food is unnecessary.
3. We should all try to reduce our meat consumption.
4. Many animal species possess intelligence levels similar to humans.
5. Many animals are capable of feeling emotions similar to humans.
6. Many animals have conscious experiences.
7. Different species have different levels of worth.
8. Human life is more valuable than the life of other animals.
9. It's acceptable to prioritise the needs of humans over those of other animals.

Posters

The posters were created through combining each of the 'dream' pictures from experiment three with each of the 'nightmare' pictures from experiment three. The nightmare image was placed above the dream image, surrounded by the text "Billions of animals are farmed and killed each year, denied their freedom to live" and "Let's create a future where all beings live free by supporting an end to farming animals". There were 25 posters tested in total.

Procedure

First, participants rated their agreement with the statements in the pre/post measures scale. Next, they saw one of the posters, followed by the ratings of their agreement with the items in the image rating scale, the pre/post scale, and the animal attitudes scale.

They were also given the opportunity to provide qualitative feedback after reading the following prompt: "We are interested in finding ways to convince the general public to support animal freedom in all of its forms. This would mean moving towards a future where animals are no longer exploited, harmed or killed by humans - such as in farming, scientific research, or in sport. What do you believe would make campaigns such as the one above more convincing towards that goal?"

Results

We first analysed the change in participant responses to the same items after seeing the poster. We calculated a net change score for each image, which was the percentage of participants who scored higher after seeing the image than before minus the percentage who scored lower. While there were no discernible patterns in how participants changed their responses across different poster conditions (Figure 11), there were effects overall as a function of seeing the poster, regardless of the specific image (Table 1). Table one shows the net change score for each of the items asked both before and after seeing the poster.

The study revealed complex dynamics in how participants responded to the animal freedom campaign. Agreement with the statement "Animals should not be used for food" increased by 16%pts, and support for laws protecting all animals' rights grew by 8%pts, indicating more openness to ending animal farming after seeing the posters. However, there were contradictory shifts: agreement with "There is nothing wrong with how we treat animals" rose by 5%pts, while support for stopping animal use decreased by 6%pts. These mixed responses could be due to framing effects.

Participants also expressed heightened concern about the negative impacts of ending farming, with agreement on animal rights being disruptive to lifestyles increasing by 14%pts, and concerns about threats to cultural heritage rising by 10%pts. Speciesist attitudes grew, as agreement with "Animals are fundamentally different from humans" increased by 10%pts, while support for "Protecting animal freedom is as important as human freedom" fell by 17%pts.

These shifts suggest polarisation, with some participants increasing support for animal rights, while others reacted negatively, perhaps due to psychological reactance. Overall, the posters seemed to prompt both stronger support and heightened awareness of challenges, leading to divergent attitudes.

Figure 11. Net change (proportion of participants who increased their agreement minus the percentage of participants who decreased their agreement) with each of the pre/post survey items, split by the poster that they saw.

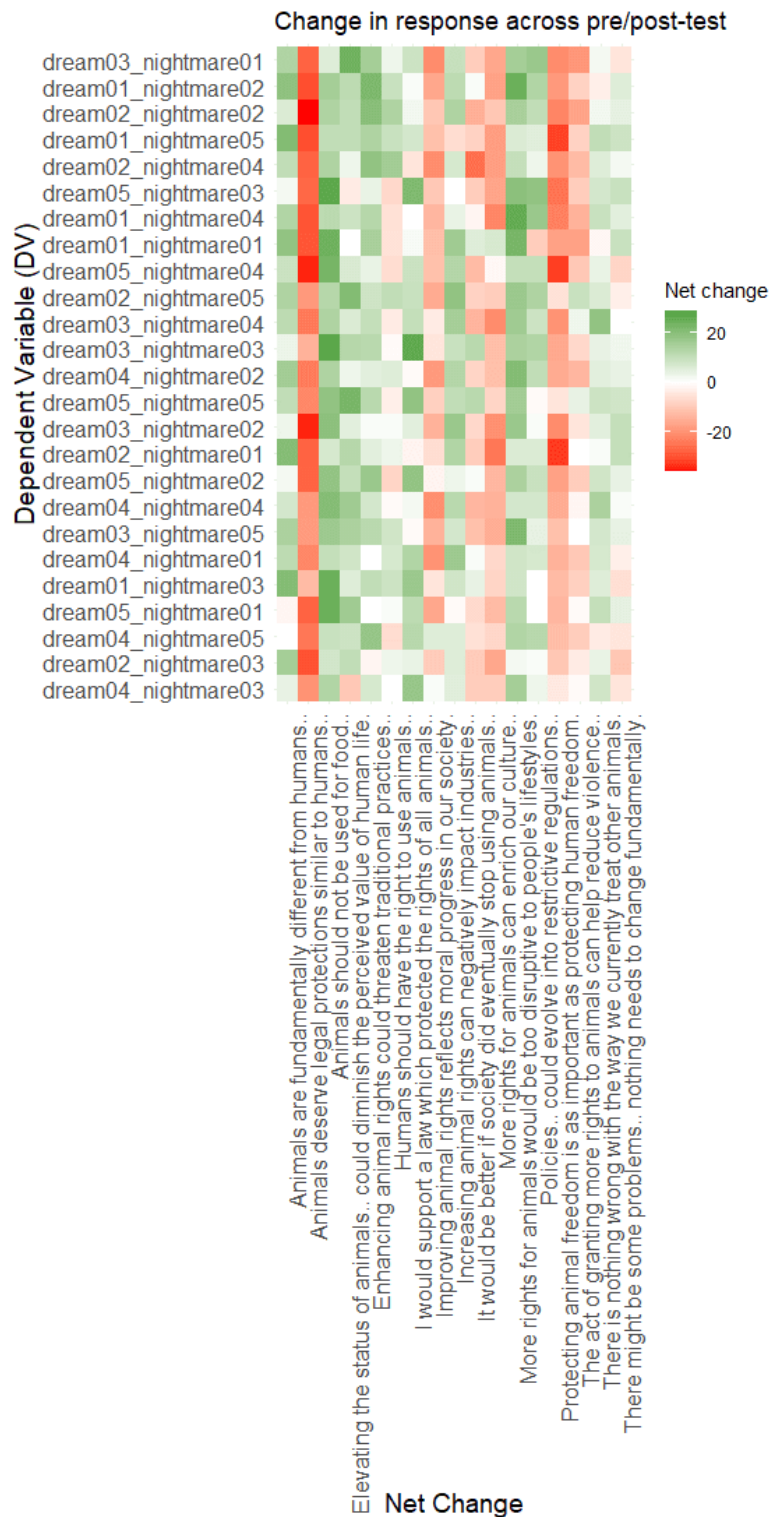


Table 1. Net change (proportion of participants who increased their agreement minus the percentage of participants who decreased their agreement) with each of the pre/post survey items, collapsed across the poster they saw.

Question	Mean net change
Animals should not be used for food, regardless of how well they are treated.	16.1%
More rights for animals would be too disruptive to people's lifestyles.	14.29%
Animals are fundamentally different from humans, and should not be given similar rights.	10.57%
Enhancing animal rights could threaten traditional practices and cultural heritage that involve animals.	9.88%
Elevating the status of animals through rights could diminish the perceived value of human life.	9.29%
Increasing animal rights can negatively impact industries that rely on animal products.	9.09%
I would support a law which protected the rights of all animals in not being harmed, exploited or killed - even if it would mean that humans could no longer use animals for their meat, milk, eggs, or other body parts.	8.22%
Policies that initially aim to stop animal cruelty could evolve into restrictive regulations that interfere with personal freedoms.	7.3%
There is nothing wrong with the way we currently treat other animals.	5.89%
Humans should have the right to use animals for food, clothing, and other purposes.	2.06%
There might be some problems with the way we currently treat some animals, but nothing needs to change fundamentally.	1.85%
It would be better if society did eventually stop using animals for human benefit (e.g., food, entertainment, clothing) all together.	-5.95%
The act of granting more rights to animals can help reduce violence and cruelty in society at large.	-6.87%
Improving animal rights reflects moral progress in our society.	-11.14%
More rights for animals can enrich our culture by fostering a deeper appreciation and	-12.9%

respect for all life.	
Protecting animal freedom is as important as protecting human freedom.	-17.5%
Animals deserve legal protections similar to humans because they are sentient beings capable of joy and suffering.	-25.4%

Next, we analysed the effect of the image used in the poster on the poster ratings. In order to analyse the effect of single images versus juxtaposed images, we analysed the data from experiments three and four. Specifically, we compared the ratings of the posters that participants completed after seeing the poster. Because there were 18 dependant variables, we first performed a factor analysis in order to reduce the number of variables in the analysis. The first principle factor had an Eigen value of 9.22 (all others were below 1). Table two shows the factor loadings for each of the rating variables.

Table two. *Factor loadings of the ratings of the images used in experiments 3-4.*

Rating variable	Factor score
Empathy	0.859
Happy	-0.127
Sad	0.749
Disgust	0.596
Intelligent	0.719
Personality	0.748
Emotions	0.742
Similar	0.792
Support freedom	0.782
Free from exploitation	0.813
No kill	0.79
No harm	0.774
Persuasive	0.787

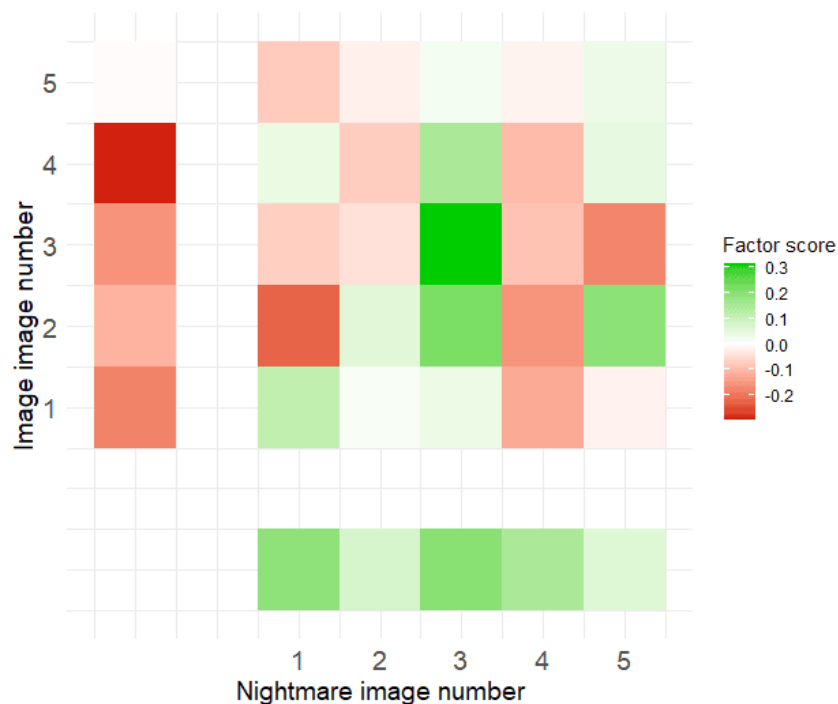
Clear	0.428
Manipulative	-0.16
Motivated	0.869
Connected	0.824
Family	0.735

From the results of this factor analysis, we calculated a factor score for each participant, which allowed us to assess the effect of the image on the overall emotional response to the image (Figure 13). There was a clear effect of the type of imagery when only a single poster was used - posters containing nightmare images had consistently stronger emotional responses than posters containing dream imagery. The effect of juxtaposing the nightmare and dream imagery within the same poster had mixed effects. Three of the nightmare images consistently performed best when presented alone. However, responses to the remaining two nightmare images were somewhat improved by juxtaposing them with dream imagery. Specifically, one was improved by juxtaposing it with one of the dream images, albeit made worse when combined with the other four dream images. Another was improved by three juxtapositions, albeit made worse when combined with the other two dream images.

This suggests that while nightmare imagery generally evokes stronger emotional responses when presented in isolation, its impact can be either enhanced or diminished when juxtaposed with dream imagery. The variability in the emotional response based on the specific combinations of nightmare and dream imagery highlights the complexity of how such visual contrasts influence perception. Some nightmare images benefit from the contrast with particular dream images, which may provide a sense of relief or hope, thereby tempering the emotional intensity. However, not all juxtapositions are equally effective, as certain combinations can dilute the impact or create dissonance that weakens the overall emotional response.

These findings indicate that the careful selection of imagery, particularly in campaigns that mix contrasting visual themes, can significantly affect the emotional resonance of the message. Tailoring the juxtaposition to ensure complementary effects between nightmare and dream imagery could maximise engagement and emotional impact.

Figure 13. Emotional response to the different imagery used in the posters, quantified as a factor score, split by each combination of image (individual dream/nightmare images and juxtapositions). Red indicates a lower than average response, green indicates a higher than average response.



Finally, we analysed the effect that ratings of the posters had on support for different factors of animal freedom - regardless of the specific poster that they saw. We analysed the data by fitted ordinal logistic regressions using the BRMS package in R (Figure 14 showed the posterior probability distributions of the log-odds of the model parameters). The dependant variables were the ratings support for animal protection as dependant variables (support freedom, freedom from exploitation, no harm, no kill, and feeling

persuaded by the poster). The predictor variables were the other image ratings.

We found that images which evoked empathy had the largest effect on persuasiveness, followed by feelings of similarity and family. Ratings of perceived intelligence and feeling sad in response to seeing the poster were also effective - to a lesser extent. Ratings of happiness, personality, and emotions seemed to have no effect on support for animal protection. Ratings of perceived manipulativeness had a counter-productive effect on effectiveness.

This suggests that fostering a sense of kinship is a crucial element in promoting support for animal freedom. When individuals perceive our fellow animals as part of a shared family or community, it taps into deep-rooted values of care, protection, and responsibility. Kinship creates a bridge between us and other animals, allowing people to see them not as distant or different, but as individuals with whom we share bonds of life and empathy.

Figure 14. 94% posterior density distributions of the log-odds (x-axis) that each image-ratings (y-axis) influenced ratings of each of the ratings of agreement with animal freedom (sub-plots).

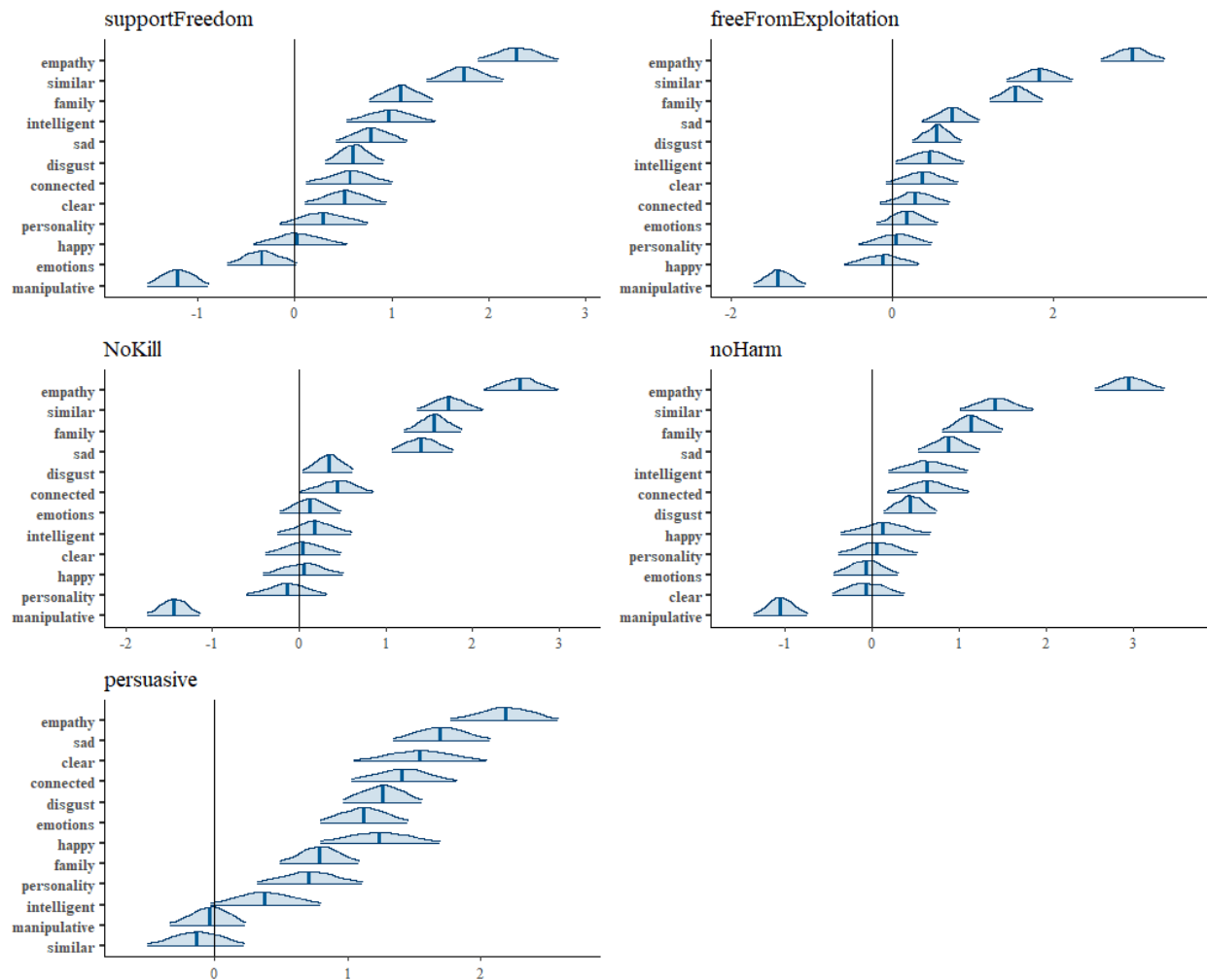
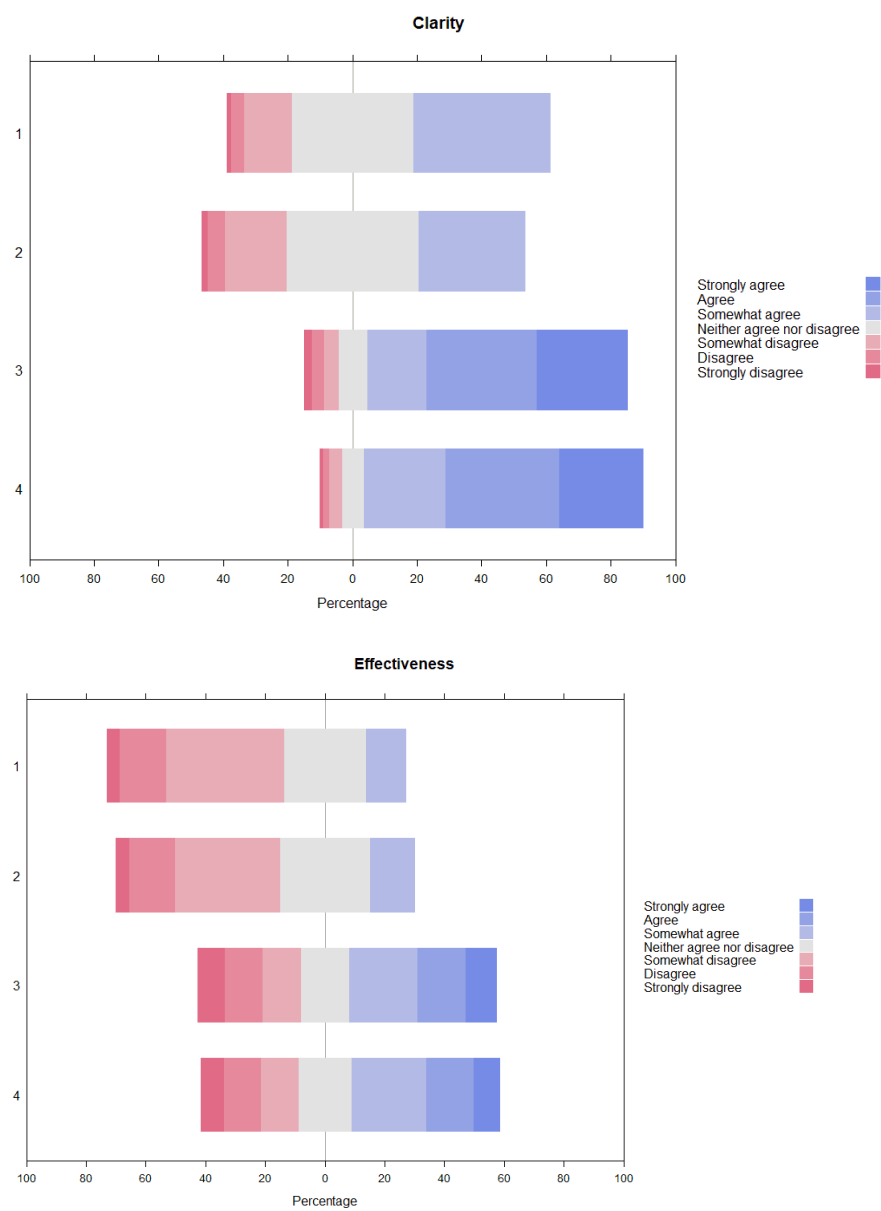
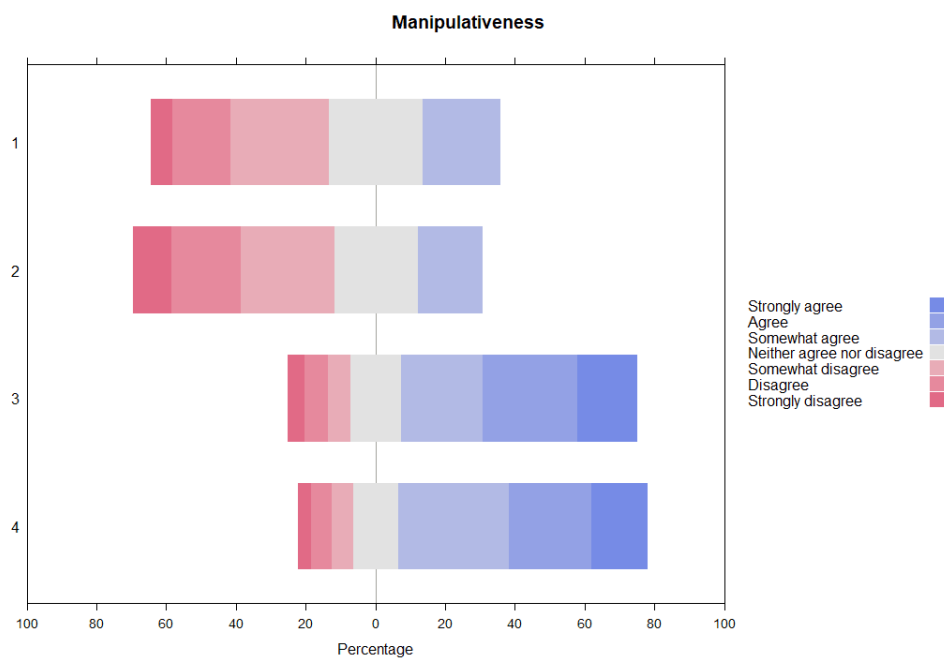
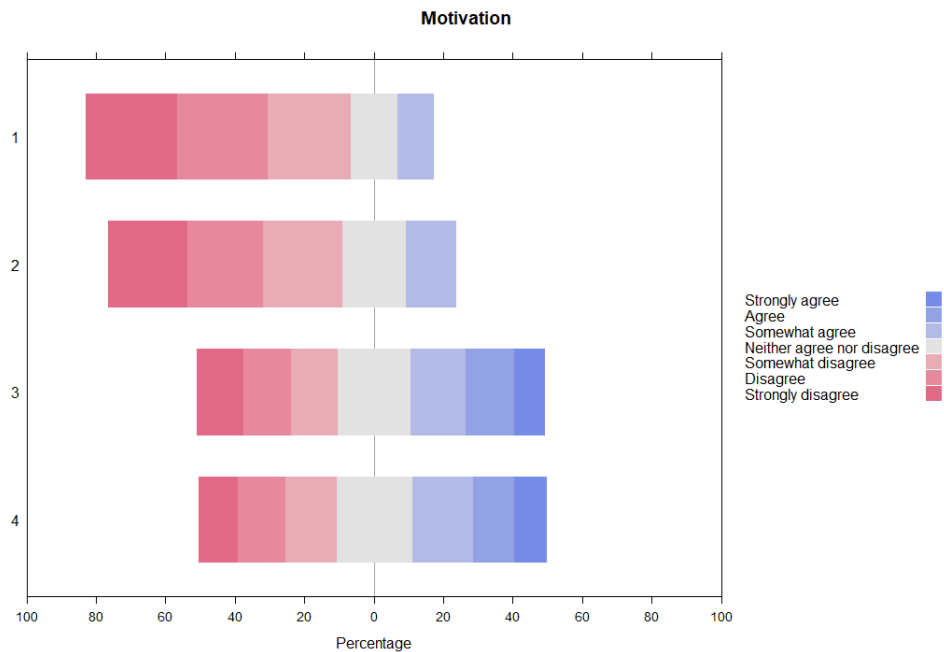


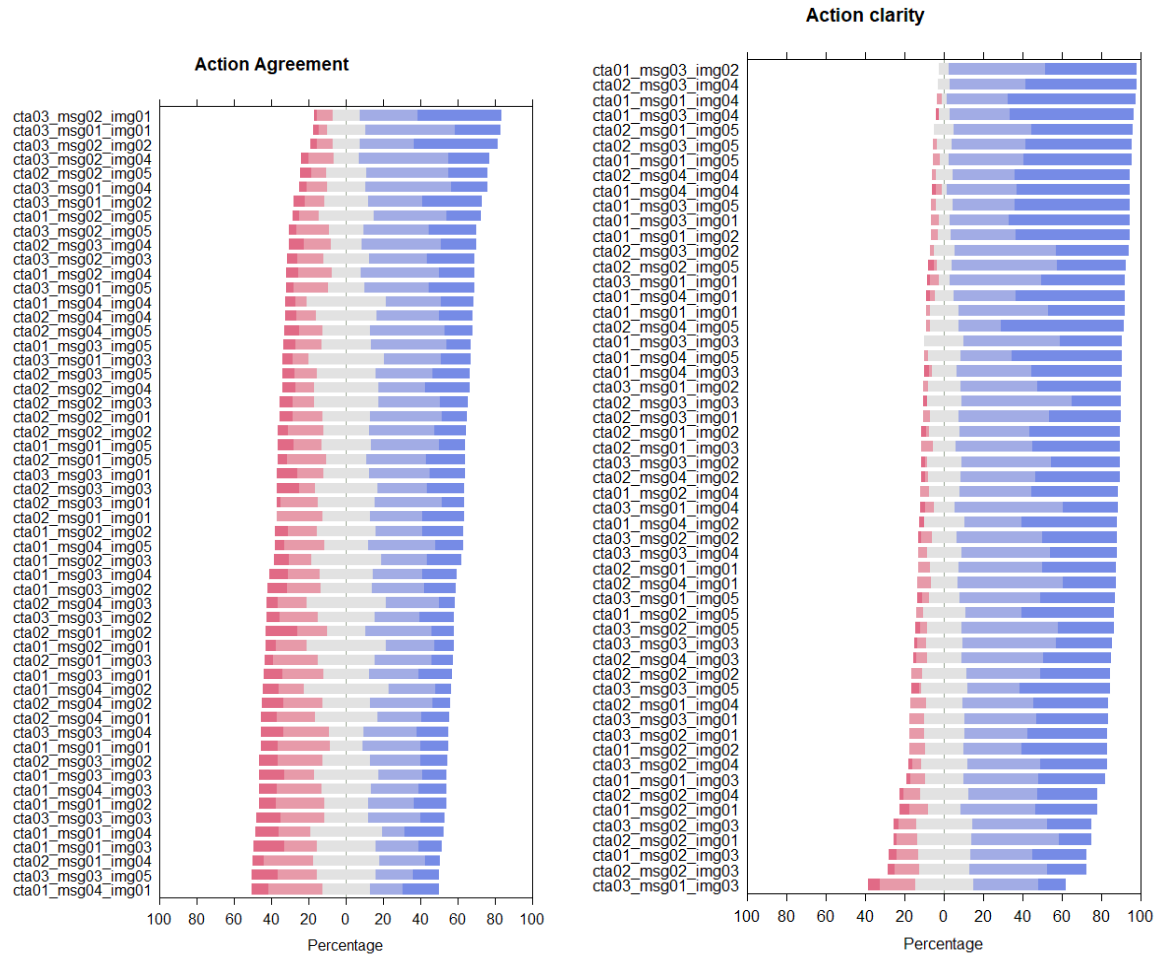
Figure 15. Comparison of ratings across all four experiments (y axis).



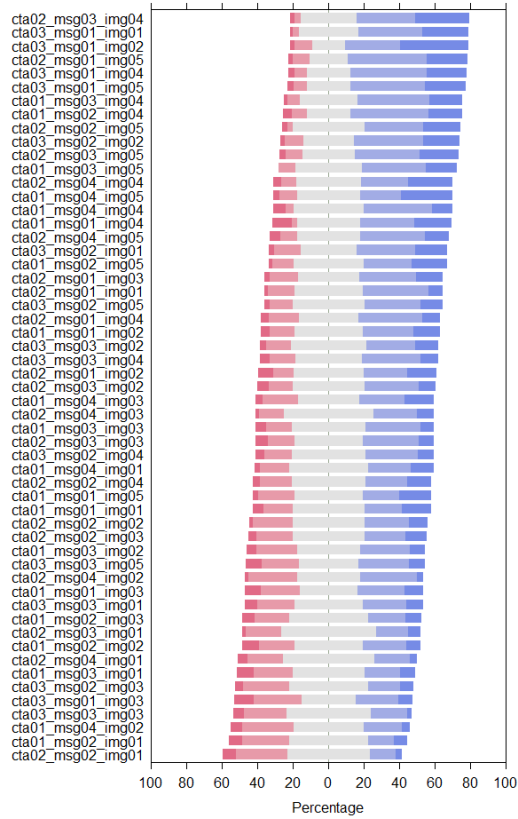


Appendix

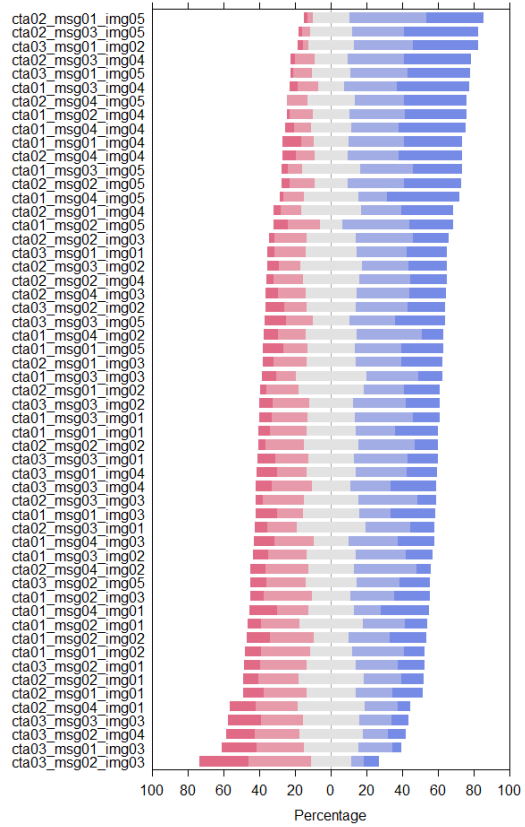
One: Ratings for all posters in experiments 1-2



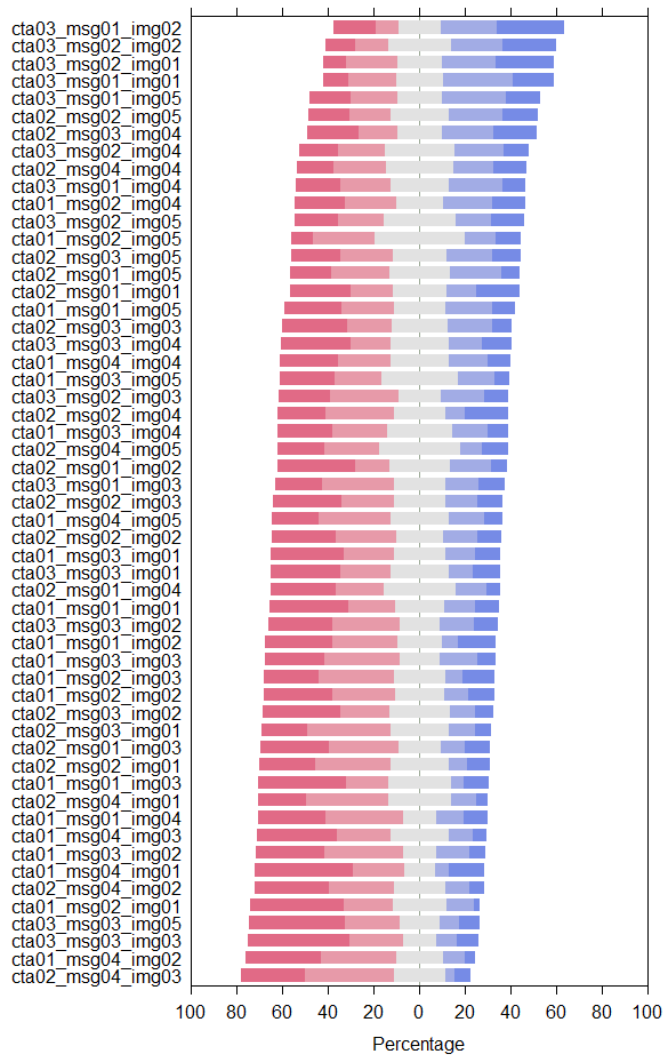
Action Effectiveness



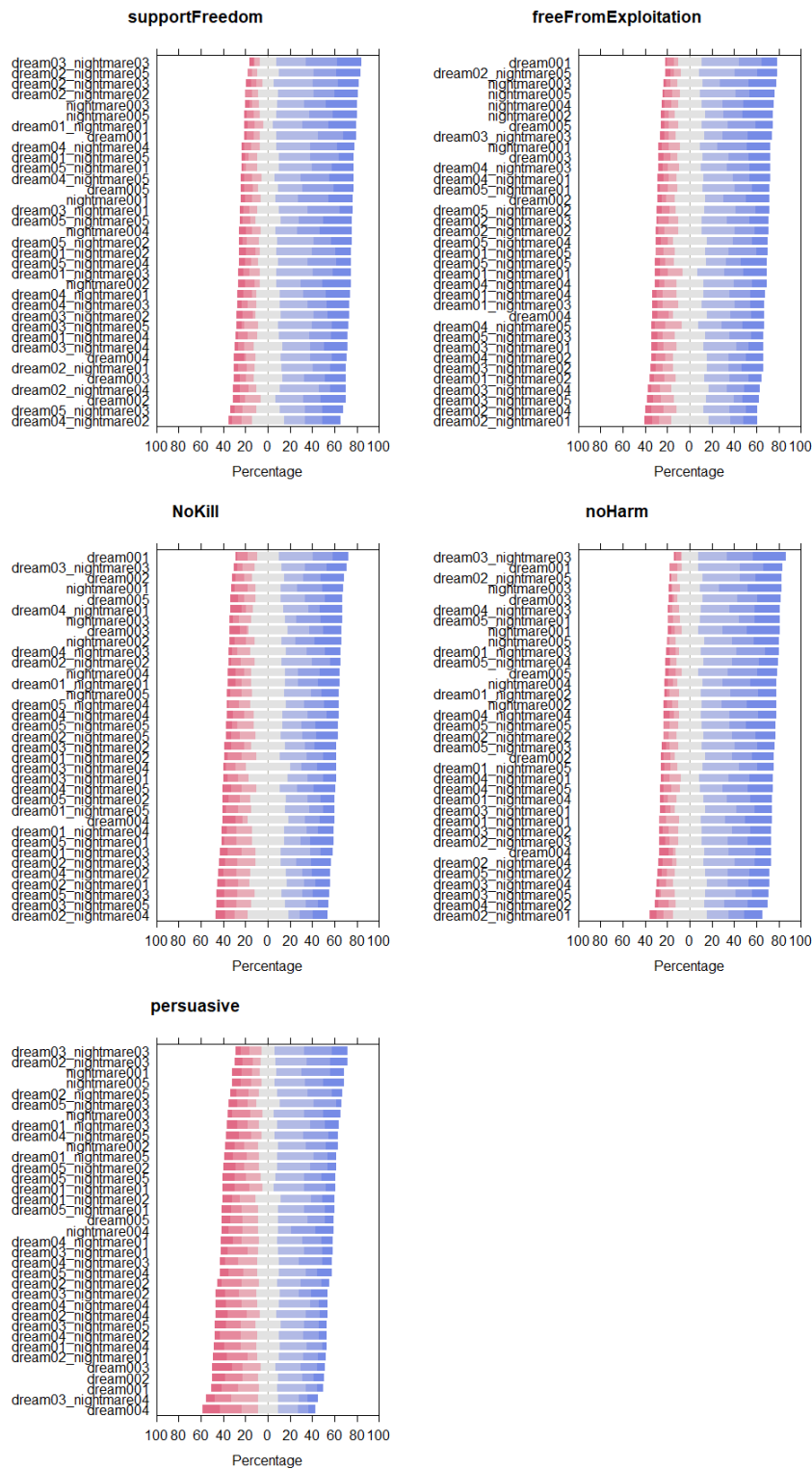
Action Manipulation



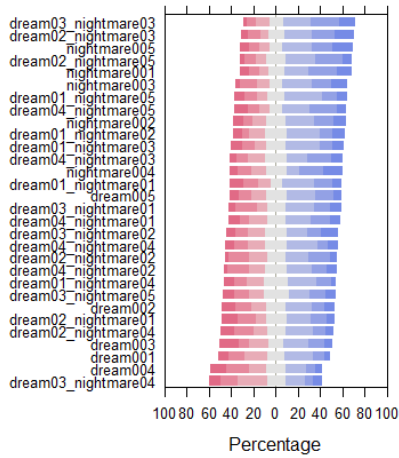
Action Motivation



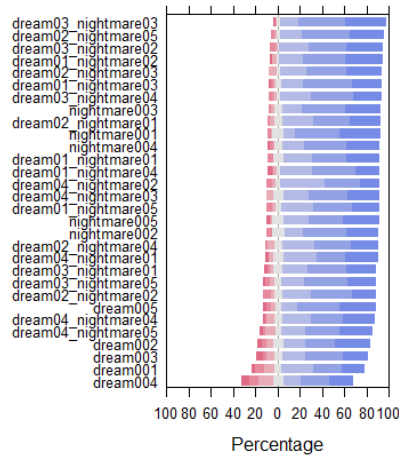
Two: Ratings for all posters in experiments 3-4



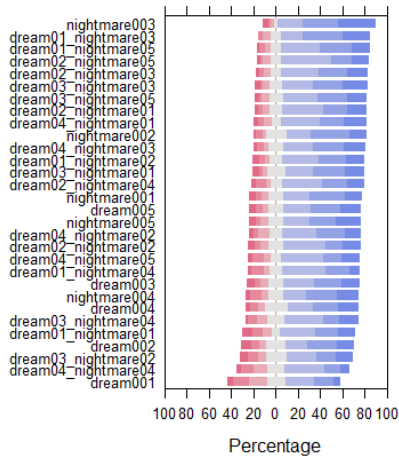
persuasive



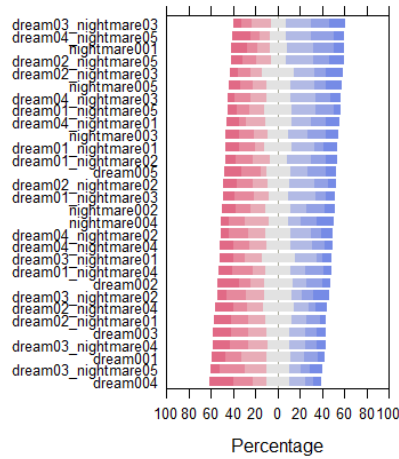
clear



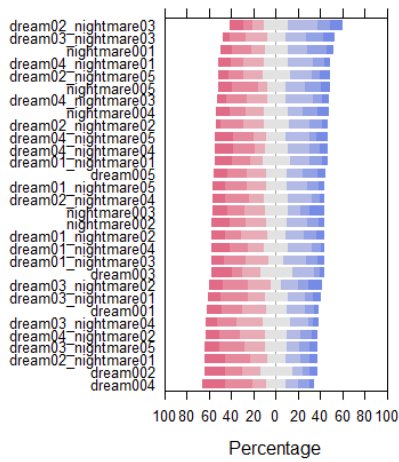
manipulative



motivated



connected



family

