

CS279 HW2 Part 1

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GitHub: <https://github.com/cs279-HW2/Controlled-Experiments>

Website: <https://cs279-hw2.github.io/Controlled-Experiments/>

Does food have gender?

Food is gendered. Outdoor grilling is often seen as a masculine activity. There are collections of photos parodying images of young women laughing while eating salad. Vegetarian men are stereotyped as being more feminine than their omnivorous counterparts. The yogurt industry is known for targeting women. Given these observations, our team would like to test the implicit bias between gender and foodstuffs. Our hypotheses are as follows.

1. Images of plant based products will sway face categorizations to be more feminine.
2. Images of meat products will sway face categorizations to be more masculine.
3. Images of dairy products will sway face categorizations to be more feminine.

Sample stimuli

Our food group contains: meat, plant-based (including vegetables and fruits), dairy. After we get some results from the experiments, we will decide whether the vegetables and fruits should be separated. We will conduct several trials with the same face image and different food background pictures.

1. Image with female face and meat background ([See Figure 1](#))
2. Image with male face and plant-based product background ([See Figure 2](#))
3. Image with male face and dairy product background ([See Figure 3](#))



Figure 1



Figure 2



Figure 3

In order to reduce the influence of other factors, such as age and race, we set the following constraints:

- The size of each face and the size of the background image will remain constant.
- The given face will always be a frontal image.
- The given face will not block the most important part of the background food pictures. People can easily tell the specific food from the background.
- In our fundamental experiments, we use the images of 30-year-old European female/male face. In this way, the age and race won't bias people's judgement. As for our advanced experiments, we might take race into consideration.

In our experiments, we will set up different level face images from very female look (+3) to very male look (-3). We expect that after analyzing the responses for different faces, we can get rid of those which are too easy or too hard for people to categorize gender.

Connections and Operationalization

As explained above, the stimuli will be images of food, presented as background pictures. The concept behind the study is that the food images will trigger certain implicit biases regarding gender. By asking the participant to categorize faces by gender when the faces are against a food background, our study hopes to identify internal cognitive processes using mouse tracking technique that indicate an association of one gender with certain food types (meat, dairy and plant-based).

Let us assume we see a male face in the center of the screen with three types of backgrounds and record the mouse trajectories of the participants:

1. Blank (Trajectory 0 as T0)
2. Chicken (T1)
3. Kale (T2)

Then we expect that when there is a male face:

- T1 will be more direct than T0/T2
- T0 and T2 will be more curved than T1.
- Flipped results expected when there is a female face.

More specifically on the mouse measurements, we will collect

- the x, y coordinates of mouse trajectories
- seconds between clicking on next button and clicking on either buttons associated with gender appearing on the top corners
- personal informations like gender and age will be considered for further analysis

Pre-test design:

In this pre-test, we will show several food pictures without face images in them. The question is "Is this food feminine or masculine?". For each food image, we will provide three buttons(female, male and both) for the users to choose. It is noted that this pre-test and our experiments should have different groups of participants. We expect that we can statistically analyze food bias on gender classification and compare the results of this pre-test with our final conclusion.

