

Heterogeneous Tastes and Social (Mis)Learning

Online Appendix

Tristan Gagnon-Bartsch
University of Iowa

Benjamin Bushong*
Michigan State

Contents

1	Supplemental Results	1
2	Instructions, Experiment 1	6
3	Instructions, Experiment 2	13
4	Logos of Businesses Used in Experiment	13
5	Experimental Screenshots	14

*E-mails: tgagnonbartsch@uiowa.edu and bbushong@msu.edu. Corresponding author for replication package or additional information: Bushong. This research was reviewed by the Michigan State Human Research Protection Program.

1 Supplemental Results

In this section, we provide a few auxiliary results that supplement the main text. Specifically, we replicate some of the basic analyses from Experiment 1 using the data from Experiment 2.

Survey Stage

SUMMARY OF PARTICIPANTS' PREFERENCES

	I(Personal Experience)	Rating	WTP
AMC	0.590 (0.492)	2.573 (0.656)	50.79 (27.65)
Amazon	0.996 (0.0662)	2.868 (1.029)	69.45 (24.42)
ChickFilA	0.714 (0.452)	2.511 (1.104)	50.53 (32.19)
HomeDepot	0.846 (0.361)	2.714 (0.746)	60.06 (26.80)
OldNavy	0.555 (0.497)	2.471 (0.692)	50.91 (29.14)
PetSmart	0.608 (0.488)	2.626 (0.674)	51.07 (29.27)
Starbucks	0.846 (0.361)	2.564 (0.971)	53.90 (29.40)

Table 1: Mean Responses ($n = 226$) from the Survey Stage, Experiment 2. *“Personal Experience” corresponds to indicating that their household purchased something from the business in the last five years. “Rating” was reported on a four-point increasing scale. Willingness to Accept (“WTP”) was reported using a slider from \$0 to \$100. Standard deviations are in parentheses.*

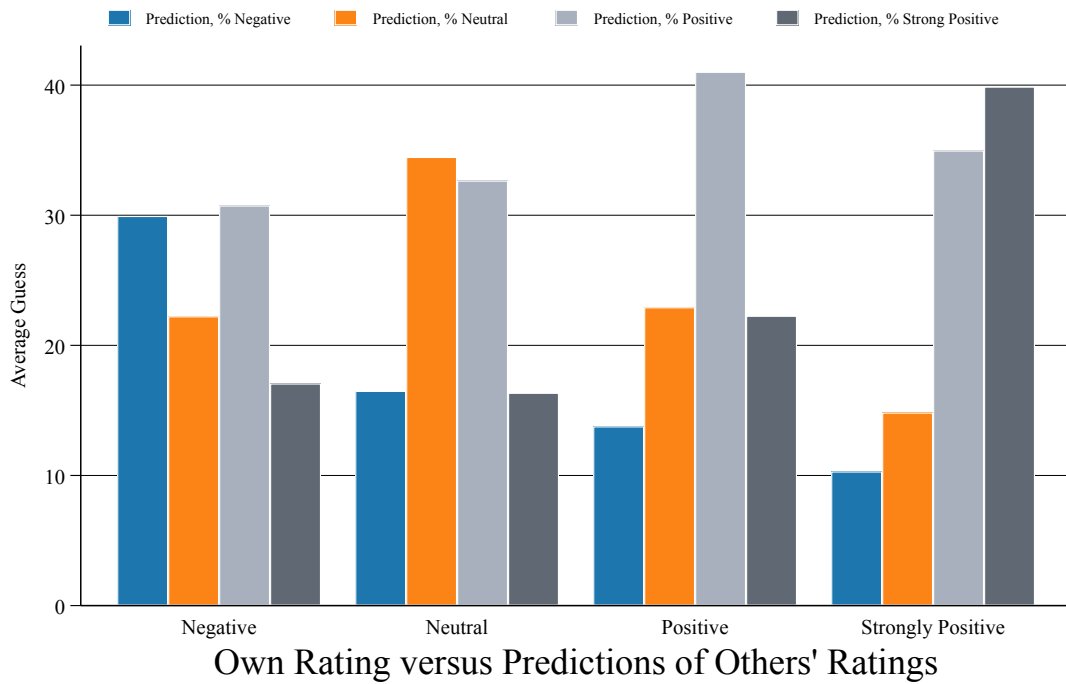
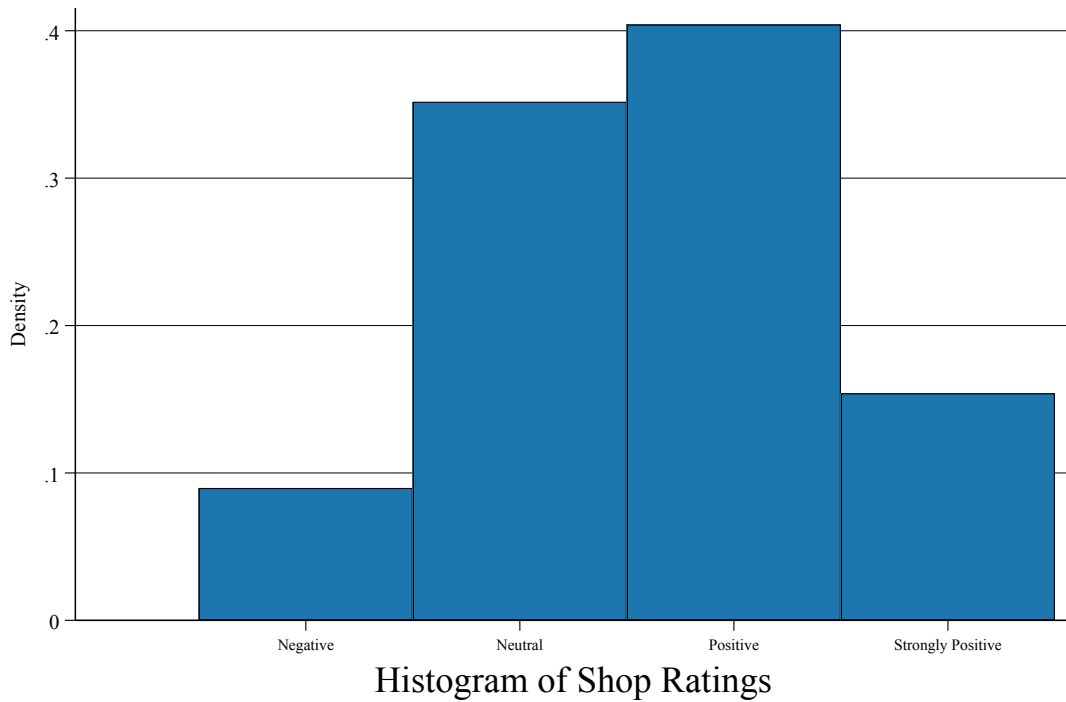


Figure 1: Ratings in the Survey Stage, Experiment 2. Panel (a) shows the distribution of ratings aggregated across businesses. Panel (b) shows the perceived distribution of ratings conditional on participants' own rating. Perceptions of others' tastes were heavily skewed towards a person's own stated preference.

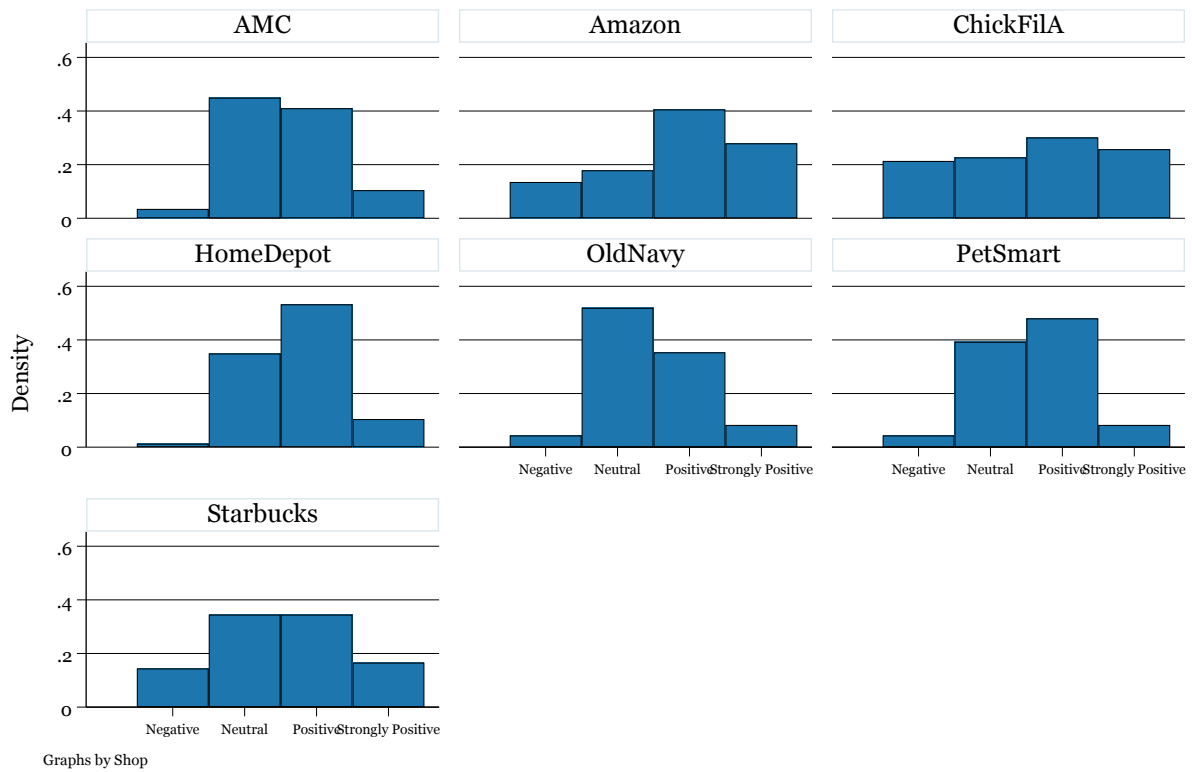


Figure 2: Histogram of Ratings by Shop, Experiment 2. While ratings varied significantly across shops, all shops were generally viewed positively. As with Experiment 1, the lowest-rated shop was Old Navy; center row, center of figure.

Actor Stage

CHOICES AFTER SIGNAL $s = h$					DISTRIBUTION OF STRATEGY TYPES				
Cash Option					Cash Option				
	\$30	\$40	\$50	Total		\$30	\$40	\$50	Average
$a = R$	341	798	459	1598	Signal Ind. Reject	0.423	0.498	0.574	0.498
$a = A$	461	791	328	1580	Signal Dependent	0.495	0.477	0.412	0.465
CHOICES AFTER SIGNAL $s = l$					Signal Ind. Accept	0.080	0.021	0.005	0.032
$a = R$	736	1547	776	3059	Mistaken	0.003	0.004	0.009	0.005
$a = A$	66	41	11	118					

Table 2: Choices and Types from the Actor Stage of Experiment 2. *Participants made 14 choices for each signal realization across seven businesses. The left tables show the raw counts of these choices; the right table shows the associated distribution of strategy types.*

DETERMINANTS OF ACTORS' CHOICES

	Dep. variable: 1(Chose Gift Card)		
	(1)	(2)	(3)
Good Signal ($S = H$)	0.517*** (0.011)	0.517*** (0.011)	0.517*** (0.010)
Cash Option = 40	-0.081*** (0.011)	-0.080*** (0.011)	-0.080*** (0.011)
Cash Option = 50	-0.136*** (0.014)	-0.134*** (0.014)	-0.133*** (0.014)
Rating = Neutral	0.016 (0.021)	-0.023 (0.022)	0.008 (0.021)
Rating = Positive	0.167*** (0.022)	0.003 (0.024)	0.048 (0.025)
Rating = Strongly Positive	0.289*** (0.027)	0.058 (0.031)	0.081** (0.030)
Personal Experience		0.084*** (0.016)	0.059*** (0.015)
WTP		0.005*** (0.001)	0.004*** (0.001)
Shop-Level FEs	X	X	✓
Observations	5655	5655	5655

Estimated via fixed-effects logit with marginal effects displayed. Standard errors (in parentheses) are clustered at the individual level. Omitted categories are Bad Signal, CashOption=30, and Rating = Negative.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3: Modeling Actors' Choices in Experiment 2. *Using a panel-logit model with subject-level fixed effects, we explore the determinants of observers choosing the gift card. All models include interactions between signal and other independent variables.*

2 Instructions, Experiment 1

The experiment was delivered via Qualtrics. Participants were recruited from the Prolific sample. For sake of brevity, we present the experiment instructions for a single business; participants saw seven repetitions of each block of questions shown below (one for each business). The use of boldface text in the instructions below are to aid the reader in navigating the instructions—they did not appear in the actual experiment. Likewise the boldface, italic text in brackets did not appear in the experiment and is intended to aid the reader in following the experimental flow. The instructions begin immediately below and comprise the remainder of this appendix.

Introduction

You will be paid at least \$5.00 for completing this survey.

This survey has three parts.

In the first part, you will answer questions about each of seven businesses. These questions are simple survey questions to help us understand your preferences. In the second part, you will make choices about whether you would like a gift card to one of the businesses.

To make sure you consider each question in Part 2 carefully, we've added a bonus: one out of every twenty participants who complete this survey will have one of their choices implemented for real. These choices involve winning gift cards that are worth either \$20 or \$100. This means that you might earn a significant amount of extra money. In the third part, you will make choices as in Part 2 but will also make guesses about other people. To make sure you consider each question in Part 3 carefully, we've added a bonus: you will earn extra money for accurate guesses. Since there are a lot of guesses, you can earn a significant bonus in this part. You could earn as much as \$16 on top of the fixed pay for the survey, and we expect most people to earn around \$5.

You must complete all questions to earn any pay. There will be absolutely no exceptions to this rule. All payments will be credited to your account within one week of completing the survey and gift-card winners from Parts 2 and 3 will be contacted.

We will explain Part 1 in more detail on the next page.

Instructions, Survey Stage

On each page, you will see the name and a short description of a major business. We will first ask two simple questions about your attitudes toward that business. The third question asks you to guess about others. Although these are simple survey questions, please answer honestly.

The fourth question might be new to you, so we want to explain it a bit more. The question reads as follows:

“Suppose there is a gift card to Target with \$100 on it. What is the highest amount of money you’d be willing to pay for this gift card?”

You will respond with a slider and select the amount of money such that you’d be willing to buy the gift card at that price (but no higher). That is, if you would buy the gift card for \$75, but you would not buy the gift card at \$76, you would move the slider to \$75.

The survey questions begin on the next page.

Questions, Survey Stage

[Amazon logo appeared on the page here.]

This page refers to Amazon.com, a technology company and retailer.

Please answer all of the questions on this page about the business Amazon.com.

Have you or anyone in your household bought something from this business in the last five years? *[Coded as “Personal Experience” in main text.]*

Yes

No

Using the scale below, describe your attitudes toward this business and its product(s). *[Coded as “Rating” in main text. Emoji were paired with ratings; see screenshots below.]*

Negative

Neutral

Positive

Strongly Positive

We asked 100 people the same question that you just answered above. Please guess how many people gave each of the following answers. Note: your responses must add up to 100. *[Participants input integers that were validated to sum to 100.]*

Negative

Neutral

Positive

Strongly Positive

Suppose there was a gift card to Amazon with \$100 on it. What is the highest amount of money you’d be willing to pay for this gift card? *[Coded as “WTP” in main text. Slider appeared below.]*

Instructions, Actor Stage

We will now ask you a series of questions about whether you would like a gift card to the businesses you just saw. The way we ask these questions is perhaps unfamiliar, so pay close attention. We’re interested in whether you’d like to have additional cash (in the form of a bonus) or whether you’d

like to have the gift card.

Importantly: the amount of money on the gift card is uncertain. The card has either \$100 or \$20 on it. You cannot know for certain whether there is \$100 or \$20 on the card.

You will receive useful, yet imperfect, information about whether the card has \$100 on it or not. This takes the form of simple emoji: If you see *[thumbs up emoji]*, then the card likely has \$100 on it. Specifically, there is a 75% chance it has \$100 (and a 25% chance it is has \$20). If you see *[thumbs down emoji]*, then the card likely has \$20 on it. Specifically, there is a 75% chance it has \$20 (and a 25% chance it has \$100).

Your choice is simple: you can take the card or you can have some bonus cash. In each question, the amount of bonus cash may vary, so pay close attention. The next page shows an example of your choice screen to help make things clear.

Example, Actor Stage

This is just an example.

You will see some business. Suppose we asked about Chipotle Mexican Grill, a restaurant chain.

You would then answer a set of questions.

Here is an example of the type of question you will answer and how it will look. *[See screenshots.]*

Take the Bonus Cash

Take the Card

To ensure you're reading closely, please choose Take the Bonus Cash.

Quiz, Actor Stage

On the previous page, we showed you the following: *[See screenshots; first quiz involved thumbs-up emoji / positive signal.]*

Please select which of the following is true: *[Order of options shuffled.]*

The card has \$20 on it for sure.

The card has \$20 on it with probability 25%.

The card has \$20 on it with probability 50%.

The card has \$20 on it with probability 75%.

[After correct answer only.] That is correct. The thumbs-up indicates the card likely has \$100 on it. Remember, the gift card has either \$20 or \$100 on it.

Suppose you saw the following: *[See screenshots; second quiz involved thumbs-down emoji / negative signal.]*

Please select which is true:

- [] The card has \$20 on it for sure.
- [] The card has \$20 on it with probability 25%.
- [] The card has \$20 on it with probability 50%.
- [] The card has \$20 on it with probability 75%.

[After correct answer only.] That is correct. The thumbs-down indicates the card likely has \$20 on it.

When choosing between the gift card and the bonus cash, there is no right or wrong answer, and there aren't any tricks. As we mentioned earlier, one out for every twenty participants who complete this survey will have one of their choices implemented for real. This means that you might earn a significant amount of extra money or a valuable gift card.

If you would rather have the bonus cash, then choose Take the Bonus Cash. If you would rather have the card, then choose Take the Card.

Remember, the amount of bonus cash may vary, so pay close attention.

Questions, Actor Stage

[See screenshots.]

Instructions, Observer Stage

If you need to take a short break, please do so now.

In this part of the survey, you will still choose between a card and bonus cash like you just did, but we are also going to ask you to make guesses about other people who have already answered Part 2 of this survey. Specifically, we're going to tell you whether another person took the card or not in a given scenario and ask you to guess the likelihood that they got good information (a *[thumbs-up emoji appeared here]*) about the card value.

On each page you will see a scenario exactly like in the previous part. For each scenario, you will see other people's choices. Specifically, for each business, you will see somebody who took the card and somebody who didn't. For each of these scenarios, your goal is to guess the probability (or chance) that the person saw the *[thumbs-up emoji]* before they decided. (Of course, if they did not see the *[thumbs-up emoji]*, then they saw the *[thumbs-down emoji]*.)

Your guess is a percentage probability from 0 to 100—with 0 indicating a 0-out-of-100 chance that the person saw the *[thumbs-up emoji]*, and 100 indicating a 100-out-of-100 chance. The number you provide is called Your Guess. You choose Your Guess by clicking the response bar on your screen.

The payment rule is designed so that you can secure the largest payment by reporting the most-accurate guess. You have a chance to be paid for every answer in this section, so pay close attention

on each question. Good guesses can substantially increase your total payment for this survey. We expect that good guessers will increase their payment by about \$5 more than bad guessers. The details of the payment rule are available on the next page if you are interested.

Please take me to the details of the payment rule.

I understand that I just need to guess as accurately as I can. I do not need to see the details of the payment rule.

Details, Observer-Stage Payments

[Only for participants who asked to see details above.]

Here are the details of the payment rule.

For each question, we will use Your Guess to determine whether you win a \$0.50 prize. Here's how it works.

The computer chooses two numbers between 1 and 100, where each number is equally likely, as if rolling two 100-sided dice.

These numbers are called Computer Number A and Computer Number B.

For each question, the computer determines whether you win the \$0.50 prize according to the truth. If the person actually saw the *[thumbs-up emoji]*, you will win the \$0.50 prize if Your Guess is greater than or equal to either of the two Computer Numbers.

If the person did not see the *[thumbs-up emoji]*, then you will win the \$0.50 prize if Your Guess is less than either of the two Computer Numbers.

As mentioned above, we designed the payment rule to make sure that your total payout is highest when you use your most- accurate guess (what we might call Your True Guess) as Your Guess.

Instructions, Observer Stage (continued)

After making Your Guess, you will then decide whether you want the same card or the bonus cash as in Part 2. Unlike in Part 2, you will not see a *[thumbs-up emoji]* or a *[thumbs-down emoji]*. You will only see someone else's choice. But their choice may reveal information about whether the card is likely worth \$100 or \$20 since they got information about the card (*[thumbs-up emoji]* or *[thumbs-down emoji]*) before making their choice. Since you will choose about the same card (with the same amount of money on it), it is important to think about their choice.

As in Part 2, one in twenty participants will have this choice implemented. You will answer a lot of these questions, but they all have the same structure. You will see something like the following (this is just an example):

[Example table using Chipotle as business.]

You will then see the following:

A previous participant made the choice that you see above. What is the chance that they saw the *[thumbs-up emoji]*? (You do not need to move the slider in this example.) *[Slider appeared below ranging from 0-100]*

Take the Bonus Cash

Take the Card

For some of the questions we will not tell you the business. You might see something like the following: *[See screenshot of unknown-shop inference question.]*

Of course, the person that you're guessing about actually knew the business in each question. We are just hiding it from you.

When you see an unknown business, you will also have to decide whether you'd like the bonus cash or the card. This is exactly the same as in the cases where you know the business: if you choose Take the Card and you are selected to win, then the actual card you will get is the same as the one that you are guessing about, and the business will be revealed at that time.

When making guesses about unknown businesses and deciding between the cash and card, you should not try to guess what business we're talking about. To make sure you can't guess which business we are talking about based on the other person's choice, you will see questions for each possible choice. As mentioned earlier, each question is about a different person, so you are not trying to learn about a particular person. Instead, just try your best to guess.

Although this might seem complicated, there are three simple things to remember:

You will not be able to guess what business we're talking about when you see "unknown business" questions, and you should treat each question as if it is about a different person. Most importantly, for each question just make your best guess.

You will begin making guesses on the next screen.

Questions, Observer Stage

[See screenshots.]

Demographics and Conclusion

Thank you for your responses. You're almost finished with the survey.

On the next page, we are going to ask a few simple questions about you and then you will reach the end of the survey.

What is your sex?

Male

Female

Prefer not to answer

What is your year of birth? *[Integers only; validated to be a year.]*

Which of the following best describes the place where you currently live? A large city

A suburb near a large city

A small city or town

A rural area

What is the highest level of school you have completed or the highest degree you have received?

Less than high school degree

High school graduate (high school diploma or equivalent including GED)

Some college but no degree

Associate degree in college (2-year)

Bachelor's degree in college (4-year)

Master's degree

Doctoral degree

Professional degree (JD, MD)

Please give your best guess of your entire household income in *[prior tax year]* before taxes.

Less than \$15,000

\$15,000 to \$29,999

\$30,000 to \$59,999

\$60,000 to \$99,999

\$100,000 to \$149,999

\$150,000 or more

Please indicate how much you agree with the following statements. *[Five-point Likert scale.]*

I made each choice in this study carefully.

I made decisions in this study randomly.

Select the "Disagree" option.

Did you vote in the last election?

Yes

No

Prefer not to answer

Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or something else?

Republican

Democrat

Independent

Other

No preference / prefer not to answer

Thank you for participating. Your responses have been stored. The code to input for payment is on the screen that follows. Payments will be processed within one week. Please click the final button below to submit your work.

3 Instructions, Experiment 2

As with Experiment 1, Experiment 2 was delivered via Qualtrics to participants from the Prolific sample. All instructions were identical to Experiment 1 with the exception of following insert. This insert appeared after the first block of instructions for the Observer Stage (immediately after the question about the details of the payment rule).

Ratings Treatment Insert

To make guessing a bit easier, we will give you some information about the other person you're guessing about in each question. Specifically, we'll tell you their "Rating" of the business. This is their answer to the survey item you saw earlier: "Using the scale below, describe your attitudes toward this business and its product(s)."

We have posed these questions to a lot of different people, and each business in this survey has received all four of the possible ratings.

You should not infer anything from the particular questions you will see. We will show you a predetermined set of ratings and choices. In total, you will see 40 different questions with a mix of different ratings and choices. Each question we ask you will come from a different person.

As a reminder, you have a chance to be paid for every guess you make, so pay close attention on each question.

4 Logos of Businesses Used in Experiment



5 Experimental Screenshots

Survey Stage, Ratings and Beliefs about Ratings

Using the scale below, describe your attitudes toward this business and its product(s).

Negative 😞	Neutral 😐	Positive 😊	Strongly Positive 😄
---------------	--------------	---------------	------------------------

We asked 100 people the same question that you just answered above. Please guess how many people gave each of the following answers. [Note: your responses must add up to 100].

0	10	20	30	40	50	60	70	80	90	100
Negative 😞	<input type="text"/>									0
Neutral 😐	<input type="text"/>									0
Positive 😊	<input type="text"/>									0
Strongly Positive 😄	<input type="text"/>									0
Total:										0

Actor Stage, Positive Signal

Amount of Bonus Cash	Business Name and Logo	Signal of Card Value
\$50.00	Home Depot 	👍 (75% chance of \$100)

Take the Bonus Cash	Take the Card
---------------------	---------------

Actor Stage, Negative Signal

Amount of Bonus Cash	Business Name and Logo	Signal of Card Value
\$50.00	Home Depot 	👍 (25% chance of \$100)

Take the Bonus Cash

Take the Card

Observer Stage, Actor Took Card

Amount of Bonus Cash	Business Name and Logo	Action
\$40.00	Chick-Fil-A 	Took the Card

A previous participant made the choice that you see above. What is the chance that they saw the 👍?

0 25 50 75 100


Probability of 👍



Take the Bonus Cash

Take the Card

Observer Stage, Actor Took Cash

Amount of Bonus Cash	Business Name and Logo	Action
\$40.00	Home Depot 	Took the Bonus Cash

A previous participant made the choice that you see above. What is the chance that they saw the 👍?

0 25 50 75 100

Probability of 👍



Take the Bonus Cash

Take the Card

