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# Impact of Sexuality on the Ultimatum Game

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# Impact of Sexuality on the Ultimatum Game

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This project focuses on the ultimatum game—an experiment done by many economists to determine levels of altruism, fairness, equality, and financial responsibility individuals possess. It involves two players bargaining over a sum of money and is often used as a proxy for how people manage their income, negotiate for salaries, or think about fairness. Many identities have been tested, such as age, race, and gender, and while differences have been found based on gender, nobody has controlled the study for sexuality. The goal of this study was to determine whether sexuality has an impact on the results of the ultimatum game specifically by comparing gay and straight men. A total of 18 gay men and 30 straight men participated in this game. I analyzed the means of each group's data points using t-tests and ran two regressions with variables collected in the demographic survey; ultimately, there was little difference in offers made or minimum acceptance thresholds based on sexuality. Therefore, it is impossible to reject the hypothesis that there is no significant difference between the way in which straight and gay males play the ultimatum game. The results suggest that gay and straight men do not act differently when given the prompts of this game, thus they may make similar financial decisions and bargaining choices.

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## **Background**

Sexual orientation has an impact on the way in which individuals experience the world around them, participate in an economic system, and interact with others in the marketplace. Many people have studied the way in which gender effects economic assumptions and decisions (Hoddinott, Kenney, Solnick, etc), though very few have considered the sexual orientation of the individuals in the study. While understanding gender certainly provides a valuable window into how identities can influence actions, studying gender alone could lead to generalizations about roles and behaviors that do not control for the differing sexual orientations or family structures of individuals.

The motivation for this project ultimately stems from the simple question: Are gay men more, less, or similarly altruistic when compared to their straight peers, and under what circumstances? Do gay men have any particular experiences that may make them more likely to empathize with other people in general or with other gay men? There may exist a so-called “solidarity complex” among people who have similar life experiences, thus causing them to feel more altruistic towards others in the same position. For example, this could involve employers offering higher salaries to people who they feel are struggling to make ends meet for a similar reason to them. So perhaps gay males who are bargaining with other potential gay males might act differently than their straight peers.

There are many ways to study this, though one practical way for an undergraduate project was through a proxy study using an economic experiment known as the ultimatum game. In the ultimatum game, Player A is given a set amount of money and told to divide it between Players A and B however he or she sees fit. Player B can either accept the offer Player A has made, or reject the offer. If the offer is accepted, both players receive the allocations of money that Player

A decided on; in the case of a rejection, both players get nothing. All players know all the rules and possible outcomes before the game begins, so there is no inconsistency in information, and no surprises. People who believe that actors always make rational decisions would expect Player B to accept any offer, because getting something from the game is better than getting nothing—however this does not always play out in practice.

Many studies on the ultimatum game actually find that people are often more generous than researchers expect, and make offers above what they indicate as their own minimum willingness to accept. Stanton and Ahmadi discuss this from a neurological standpoint in which they discuss some of the implications of altruism and its impact on generosity specifically in the ultimatum game. They conclude that for individuals who are forced to consider the reactions of their partners, generosity increases, and predictions about self-interested actors break down.

According to prior research on this game, there is little difference in offers made by men versus women (Solnick). However, men tend to receive higher offers than women, and people of both genders tend to expect higher offers from women (Solnick). Studying gay men would help answer important questions, such as:

- On the offering end, would gay men make higher offers than straight men, perhaps because they are more acutely aware of economic discrimination? Or would they be less willing to forfeit a chance to earn money?
- On the receiving end, would they recognize an opportunity to receive a financial award, no matter how small, and be willing to accept lower offers than straight men? Or would they expect more altruism and fairness from Player 1 and only accept more equitable offers?

- Are gay men more altruistic, trusting, and proficient with income distribution than their heterosexual peers?
- Do gay men conform to the image of the “Economic Man” more, less, or the same as straight men?
- What could be the causes of these differences in perspective?

This study would help us learn whether there are noticeable differences in the way in which gay men participate in the economy and whether they are representative of the “rational economic man” that is so widely accepted as the backbone for economic models. From these potential differences or similarities it could be possible to make inferences about how gay men view certain choices and outcomes in the economy.

## **Literature Review**

There is substantial economic research to suggest that men and women allocate their incomes differently. This is critical to understand when doing research in this field; if we know that men and women tend to have different expenditure patterns, then it is reasonable to assume that they will act differently in the marketplace and therefore may act differently in the ultimatum game. In particular, several studies show that when women control a greater share of the household income, children benefit in a variety of ways.

Phipps and Burton studied the influence of male and female incomes on expenditure patterns using data from Canada. Men and women seem to have different responsibilities for spending their income, which reinforces the importance that gender roles play in society. Women were more likely to be the ones “responsible” for purchasing goods for children, for example. The study also found that men and women tend to spend their own income on private goods that are for themselves, meaning each person in the relationship is likely to purchase small-ticket items using their own income. This again reinforces the idea that men and women often control their own incomes separately (except for big-ticket items like mortgages, where couples often “pool” their incomes). The study is careful to survey only families with full-time, full-year working parents.

Looking at food insecurity as a specific impact of income allocation, Kenny finds that when women control most of the income, young children are less likely to experience food insecurity, while in families where the father controls a chunk of the income, food insecurity for children rises. The article reinforces the pull of the American nuclear family norms which dictate that women are responsible for feeding children. These findings are also consistent with evidence

from Côte d'Ivoire (Hoddinott and Haddad) which suggests that there is a correlation between the identity of a wage earner and his or her consumption patterns. Interestingly enough, this study looks at both heterosexual couples and also single parent households. The evidence here suggests that raising a woman's income increases the share of food budget and decreases the share of budget designated for tobacco and alcohol.

Many of these studies are done in developing nations, and several more from Africa help solidify the point. Blumberg shows using data from various countries in Africa that women are more likely to be altruistic with their income rather than selfish, spending income on "basic human needs" for the family. Losses in women's income can be devastating for food production and consumption, for example. There are further implications of this study: women who have more economic control have more decision making control in the household. If men are typically the more selfish of the sexes, then it would be interesting to learn whether gay men follow in the same steps as their straight peers. Determining whether gay men are more, equally, or less selfish than typical males will have implications for household income expenditures.

More evidence of gender roles and bargaining arises in households with more than two adults. Gummerson and Schneider look at bargaining patterns over how to spend and distribute income, finding that bargaining for resource allocation tends to happen in groups that are based on gender, meaning women often have the same ideas as other women about how to spend money, while men have ideas that are different from women but similar to other men. Additionally, as more adults were added to the household, women's bargaining power over the family's money is lowered. The fact that bargaining tends to happen in gendered groups could provide some insight into how same-sex couples choose to allocate their incomes, since same-sex couples are by definition the same gender.



Sara Solnick has done significant work regarding the ultimatum game, and how gender, physical appearance, and other things affect how the game is played. In one study (2001), she showed that men tend to attract higher monetary offers in the game, particularly from women. Additionally, people of both genders expected higher offers from women making offers rather than men. Further study in 2008 using gender controls in the Investment Game showed that women are more trustworthy than men—which could possibly be related to the fact that women are more likely to be responsible with their incomes. However, men tended to trust more than women did, perhaps because they expected a higher return on their investment—this is related to the previous study suggesting that men attract higher offers in the ultimatum game. Another ultimatum game study by Solnick and Schweitzer suggests that there is a premium for being attractive or being a male: Both men and attractive people were offered more. However, more was demanded of attractive people while less was demanded of men. These results may have bargaining implications, for salary negotiations and setting household budgets.

There are also evolutionary explanations for why men and women play these types of games differently. Saad and Gill find differences in offers men and women make (unlike Solnick's study which shows only major differences in Player B's behavior). Men tended to make higher offers to women than to men, which they suggest may be because men are accustomed to having to compete with other men for mates—so they offer more to women while being more competitive with their male peers. Gay men are arguably less occupied with impressing females, and my study will have Player B be anonymous, so it would be interesting to see whether this affects how they make offers to Player B. Additionally, Eckel and Grossman find that in a double anonymous dictator game (similar to the ultimatum game), women offered

twice as much on average as men did, suggesting their commitment to altruism and selflessness.

My study is intended to show the extent to which gay men exhibit a commitment to altruism.

## **Methodology**

The majority of research for this study was centered on performing the ultimatum game with groups of individuals recruited for the study. Individuals were recruited by advertisement in the community and on campus, using pull-tab fliers in the student center and academic buildings, outreach in classes with large numbers of students, and several emails to appropriate mailing lists. Recruitment was also done by word of mouth and referrals from participants. Special attention was given to using resources to locate self-identifying gay men for the study. I used the UVM LGBTQA Center and the VT Pride Center for their resources, mostly for their email contacts and for reaching out to groups that meet in these locations.

When the participants were recruited for the project, they were told that the researchers were seeking “self-identifying gay or straight males who were at least 18 years old.” The fliers indicated that the game was a study on decision making, and if asked for further clarification, participants were told that the researcher was looking to study how different people make decisions and what kinds of responses they would have to some prompts. These prompts involved playing a short game, on paper, in which players would be paired with another participant that they would not have the chance to meet. The recruitment flier and a sample email that was sent out to email lists can be seen in **Appendix A: Recruitment**.

Participation in the game was confidential, the privacy of the participants was protected, and compliance with all Institutional Review Board (IRB) regulations was addressed. Participants were paid for their involvement in the study, so as to give the players a real stake in the game. Each participant was given a \$5 Ben & Jerry’s ice cream gift card just for showing up, and then participants were paid based on their outcomes in one of their two games. A random

number generator in Google spreadsheets was used to determine which of the two games they would be paid for; this involved using a formula to assign each of the two games a random number between 0 and 1, allowing the researchers to randomize which room was the Player “A” room and which was the Player “B” room. In total, seven sessions were held in February and March of 2017.

When participants arrived at the research site, a greeter checked them in and gave them a slip of paper with a code that they would use for identification on relevant forms, such as the game sheets and the demographic surveys. The greeter arbitrarily divided participants among two separate rooms, one proctored by the researcher and one by his adviser, in an attempt to keep approximately equal numbers of participants in each room. (In the event of an odd number, one player in the smaller room was assigned two partners; this player did not know he was paired with two participants, but out of courtesy, he was paid based on whichever pairing earned the highest returns.) The purpose of the two rooms was so that players could be paired with someone in another room without knowing who that person was.

Once it was determined that all participants consented to the study, the researchers read instructions, gave examples, and checked players’ understanding with a short “quiz” containing possible allocations of money. These instructions and the quiz can be seen in **Appendix B: Participant Materials**. There were multiple opportunities to ask questions during instruction.

In order to play the game, Player A was given \$10 and told to divide it between Players A and B however he saw fit, but using only whole numbers. Player B could either accept the offer Player A had made, or reject the offer. If the offer was accepted, both players received the allocations of money that Player A had decided on; in the case of a rejection, both players got

nothing. All players knew all the rules and possible outcomes before the game begins, so there was no inconsistency in information, and no surprises. Each pair effectively played two games, because each participant had a chance to be Player A and Player B.

To play as Player A, participants used a pre-printed game sheet to select an allocation from a list of all the possible allocations; this produced the data point referred to as the “offer.” An example would be offering \$4 to your opponent and keeping \$6 for yourself. To play as Player B, participants recorded on that same game sheet a decision for whether or not they would accept each of the *possible* offers that Player A could have made. This generally<sup>1</sup> produced a data point called the “minimum acceptance threshold” (referred to in this paper as the “minimum”, for short); this was the minimum offer that Player B would be willing to accept out of all the possible offers. An example of this might be indicating that you would accept any offer of \$3 or higher but reject any offer of \$2 or lower, thus the “minimum” would be \$3.

After being given these instructions on how to play the game, participants recorded both their offers (for when they were Player A) and the minimum amount they would accept (for when they were Player B). Participants filled out the sheet for both players at the same time. The sheet that participants used can be seen in **Appendix B**.

In order to calculate results, the researchers used a Google spreadsheet, which allowed for simultaneous editing and data transfer without leaving the separate rooms. Meanwhile, the participants answered a questionnaire, which contained a space to identify gender and sexuality, as well as other demographic factors (the exact survey can be found in **Appendix B**). The outcome of each participant’s game was shared individually using the code sheets. After this,

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<sup>1</sup> Two players also had a “maximum acceptance threshold,” meaning they indicated they would also reject certain offers that they deemed to be too high. Neither of the players were offered a high enough amount for this maximum to make a difference in their payouts.

participants were free to leave the study and receive payment from the greeter they met on the way in. The sessions averaged approximately 30 minutes in duration and the average payout from the game was \$5 in cash, plus a \$5 gift card for showing up.

To analyze the results, I used Microsoft Excel to calculate basic demographics from the study (number of participants and their responses to the demographic survey), as well as the averages and standard deviations for each category of people. I used Gretl regression software to run t-tests and regressions for the data. I used the t-tests to determine whether or not there was a significant difference between the data points for gay and straight men, and a regression to determine whether the independent variable of sexuality had an influence on the dependent variables of the offer and the minimum.

## **Results**

The first thing to note about this study is that the participants were relatively homogeneous, owing largely to the population sample that was available in the area. A total of 49 individuals participated in the study over the course of the sessions, however not every participant could be counted in the results. One individual indicated on the demographic survey a gender other than male and by coincidence also happened to not follow instructions properly on the game sheet; this data point was eliminated. Additionally, there were 4 participants who did not identify as either gay or straight; however the decision was made to group these participants with those who identified as gay, given that the purpose of the study broadly was to compare straight males to non-straight males. The tables for these results can all be found in the **Tables** section.

This brought the number of valid entries to 48, which can be seen in **Table 1**. Of these 48, 18 identified as gay and 30 identified as straight. In terms of other demographics, 96% of the participants had completed at least some college, and 92% identified white as their race; 56% were between the ages of 18-21. Additionally, 81% of the participants identified as either somewhat liberal or liberal on a question regarding general political leanings.

In the game, each player had the opportunity to play as two players, A and B. Player A was the one who made the offer and Player B was the one who chose whether or not to accept that offer. Thus there were two critical data points for each participant: when playing as Player A, the important figure was the amount they offered to Player B (“Offer”), and when playing as B, the important figure was the minimum offer they would be willing to accept from Player A (“Minimum”). The mean and standard deviation for each data point for each group of participants is shown in **Table 2**. Two participants in the game offered more than \$5 to their

opponent, and both were straight, white males; nobody had a minimum acceptance of more than \$5.

There was very little difference in both offers and minimums based on sexuality. Straight males offered a mean of \$4.72 while gay males offered a mean of \$4.56, suggesting that straight males were slightly more generous on average. For minimums, straight males accepted a mean minimum of \$3.00 while gay males accepted a mean minimum of \$2.83, suggesting that either straight males demanded a comparably higher offer, or that gay males were willing to accept a comparatively lower offer, depending on your interpretation. The only interesting statistic from the standard deviations is that gay males' offers were the most concentrated of nearly any group in the study—the standard deviation was 1.042.

In **Tables 3 and 4**, you can see the results of the t-tests for both offers and minimums based on the control of sexuality. This test was to determine whether there was a significant difference between the means of the data for straight and gay men. For both cases, the following hypotheses were used:

$$H_0: \text{Difference of means} = 0$$
$$H_1: \text{Difference of means} \neq 0.$$

So in order to reject the null hypothesis of no difference, there would have to be a statistically significant difference between the mean offers (or minimums) of gay and straight men. For both cases, at the 95% confidence interval, the test statistic was not high enough to reject the null hypothesis of no difference in the offers and minimums for gay males and straight males.

On balance, the highest offers came from younger people, with participants aged 18-21 offering a mean of \$4.81. The next highest means were whites (\$4.77) and liberals (\$4.74). Conversely, the lowest offers came from non-whites (\$3.50), moderates and conservatives



(\$4.33), and those aged 21 and up (\$4.48). As for the minimums, younger people and those with more than a college degree were willing to accept the lowest offers (\$2.74 and \$2.75 respectively), while those with less than a college degree and non-whites demanded the highest offers (\$4.50 and \$3.25 respectively).

In order to determine whether the independent variable of sexuality had an impact on the dependent variables of the offer and minimum, I ran a regression using the ordinary least squares model. For the variables, I continued to divide age into groups of  $\leq 21$  and  $> 21$ , and continued to use the liberal and conservative/moderate binary. The results can be seen in **Table 5**. Neither of these regressions show any significant findings, meaning that none of the variables had a statistically significant impact on the offer or minimum. Therefore, given the data from this study, it is impossible to reject the original hypothesis that there is no difference between how straight men and gay men play in the ultimatum game.

## **Conclusions**

Same-sex households are a growing dynamic entering American culture, deviating from generations of norms and standards for how a typical family should operate. For some, it is challenging to understand how the two male or two female parent dynamic plays out at home, and with only very limited data and studies (same-sex marriages and unions have only been well documented for two decades at best) this is at the forefront of economic, sociological, and gender studies research. Research suggesting that men aren't as proficient at performing child-rearing tasks as women has long been a cloud looming over the LGBTQ community.

This particular study showed no significant difference between the offers and minimums of gay and straight men in the ultimatum game. So since gay men and straight men show no difference in how they respond to prompts in the ultimatum game, it is possible that gay men view finances, money, and fairness similarly to straight men, and that their levels of altruism are not noticeably higher than straight men. This study is unable to say that gay men would make different decisions than that their straight peers, or that they think about the economic world differently, since we see no difference in the results of the game. Certainly this game is not the only way to judge how individuals will manage their financial lives—but it provides valuable insight.

If it were possible to redo this study over again, there are some aspects I would change to make it more effective and make it run more smoothly. First of all, as I have mentioned, the sample size for this study was small and homogeneous; with more time and funding, it would have been possible to expand recruitment efforts in a few ways. First of all, I would have reached beyond the immediate area surrounding UVM's campus for participants. There was a lack of participants who were outside the typical college age and demographics. Visiting community

sites in Burlington and surrounding towns would allow for older participants and a greater variety of racial backgrounds. (Race in particular was challenging because the area is predominantly white.)

Additionally, despite all best efforts to make very simple and easy to understand instructions and materials, the instructors still encountered questions from participants about how the game works and received game sheets that were either incomplete or filled out incorrectly. I was able to have one practice session prior to holding the first real session, but there were only four people present. It would have been useful to hold additional practice sessions to get comfortable with the kinds of questions people ask and make sure the real sessions ran smoothly.

On a more technical note, there is a question in the demographic survey (which can be seen in **Appendix B**) that at least one participant found to be limiting, and I as a researcher found to be ineffective also. When asking participants about political leanings, the scale I used required participants to indicate beliefs on a strictly liberal—conservative scale. It would have been interesting to ask two separate questions in place of the single question: One that asks participants to consider “economic issues” and one that asks participants to consider “social issues.” I feel that the responses to the single question do not allow for enough nuances in people’s beliefs; one participant who felt strongly about this sentiment even wrote at the bottom of the page: “That [circle] is so you have a data point, but liberal vs. conservative doesn’t capture the political spectrum well. I am very liberal on social issues and moderately conservative on fiscal issues.”

It is my hope that in the future, students and academics alike will consider further research in this important and developing intersection of disciplines. A study such as this one

could be replicated on a much larger and more demographically diverse sample if given more time and funding. Additional findings across multiple studies would be useful because they would either confirm or challenge the results I have found here. Additionally there are numerous ways in which this research could be expanded to capture new circumstances.

Including women in the study eventually would be important, given that my initial interest in this area of study came about due to noticeable gender differences both in how the game is played and in how men and women view altruism. I initially wanted to study four groups of participants: gay males, straight males, gay women, and straight women. But due to funding constraints, it was determined that using just two categories would allow for a larger n-size in each category.

Similar work should also be done in different geographic areas. Since a large number of the participants were college students, there may have been some geographic diversity built into the study—I chose not to ask the home state or region of participants. But it is entirely possible that gay and straight men in different regions of the country may think about the game differently. There are more liberal and more conservative areas of the country, variations in the perception of gay males as a group, and certainly a wide range of socioeconomic statuses impacting different parts of the country. Each of these could impact the decisions that people make in their offers and willingness to accept.

Researchers know that the amount of money at stake has an effect on how the ultimatum game is played—the most significant finding is that as the amount to bargain over increases, rejection rates tend to decrease, though it isn't as clear how the offers change. While \$10 is enough money to provide a reasonable stake in the game for participants (and is affordable for

the researchers), a game in which \$100 was at stake would provide even more information about altruism. Specifically: If Player A estimates that his or her partner is likely to accept the offer, how generous will they be willing to be?

There are also opportunities to play games that are face-to-face rather than anonymous. I chose to design my game with anonymous partners because it would be easier to get participants to consent to games in which they would not have to interact with another person, and I felt it would be difficult to control for the various effects of being able to see your partner. However, it would be interesting to play games in which players reveal their sexual orientation to their partners (or where each player is told the sexual orientation of his or her partner). This could test assumptions of how people expect others to play.

Finally, there is another game similar to the ultimatum game that should be considered: the dictator game. Player A's role is virtually identical, but Player B's role is almost nonexistent; in the dictator game, Player B doesn't have the chance to choose whether to accept or reject the offer. The offer automatically stands as Player A decided. This game is a pure test of altruism, but does not allow for the bargaining and two-step nature that is seen in the ultimatum game.

It would also be interesting to ask subjective questions such as why the participants chose and accepted the particular allocations they did. In speaking with some participants post data collection, I heard many comments from people wondering why everyone didn't just offer an equal payment to their partner. These kinds of remarks signal an expectation of equality and fairness among my sample that traditional economics does not often account for. As mentioned earlier, the rational choice for Player A would be to offer only a small amount, and the rational choice for B would be to accept any offer (because presumably something is better than nothing).

As more and more families fall outside the traditional American family and different sexual orientations become accepted in the mainstream, it will be important to examine the impact this will have on the economy, in everything from investment into children, to bargaining for wages, to ideas about fairness and equality. This study is not a conclusion, but merely opens the door for a new field of research and inquiry.

**Tables****Table 1**

Category	Identity	Number	Percentage
<b>Sexuality</b>	Straight	30	63%
	Not straight	18	38%
<b>Race</b>	White	44	92%
	Non-white	4	8%
<b>Age</b>	18-21	27	56%
	>21	21	44%
<b>Education</b>	Less than college	2	4%
	Some college	38	79%
	More than some college	8	17%
<b>Political</b>	Liberal	39	81%
	Moderate or conservative	9	19%
<b>Total</b>	<b>All</b>	<b>48</b>	<b>100%</b>

**Table 2**

Category	Identity	Offer: Mean	Offer: Std Dev	Minimum: Mean	Minimum: Std Dev
<b>Sexuality</b>	Straight	\$4.72	1.552	\$3.00	1.722
	Not straight	\$4.56	1.042	\$2.83	1.689
<b>Race</b>	White	\$4.77	1.292	\$2.91	1.668
	Non-white	\$3.50	1.915	\$3.25	2.217
<b>Age</b>	18-21	\$4.81	1.241	\$2.74	1.767
	>21	\$4.48	1.537	\$3.19	1.601
<b>Education</b>	Less than college	\$4.50	0.500	\$4.50	0.500
	Some college	\$4.71	1.137	\$2.89	1.689
	More than some college	\$4.50	2.236	\$2.75	1.714
<b>Political</b>	Liberal	\$4.74	1.428	\$2.92	1.707
	Moderate or conservative	\$4.33	1.118	\$3.00	1.732
<b>Total</b>	<b>All</b>	<b>\$4.67</b>	<b>1.359</b>	<b>\$2.94</b>	<b>1.676</b>

**Table 3**

<b>Sexuality: Offer</b> <b>Null hypothesis: Difference of means = 0</b>
<b>Sample 1: Straight</b> n = 30, mean = 4.73333, s.d. = 1.55216 standard error of mean = 0.283384 95% confidence interval for mean: 4.15375 to 5.31292
<b>Sample 2: Gay</b> n = 18, mean = 4.55556, s.d. = 1.04162 standard error of mean = 0.245512 95% confidence interval for mean: 4.03757 to 5.07354
<b>Test statistic: <math>t(46) = (4.73333 - 4.55556)/0.413097 = 0.430353</math></b> <b>Two-tailed p-value = 0.6689</b> <b>(one-tailed = 0.3345)</b>

**Table 4**

<b>Sexuality: Minimum</b> <b>Null hypothesis: Difference of means = 0</b>
<b>Sample 1: Straight</b> n = 30, mean = 3, s.d. = 1.72207 standard error of mean = 0.314405 95% confidence interval for mean: 2.35697 to 3.64303
<b>Sample 2: Gay</b> n = 18, mean = 2.83333, s.d. = 1.68907 standard error of mean = 0.398116 95% confidence interval for mean: 1.99338 to 3.67329
<b>Test statistic: <math>t(46) = (3 - 2.83333)/0.509807 = 0.326921</math></b> <b>Two-tailed p-value = 0.7452</b> <b>(one-tailed = 0.3726)</b>

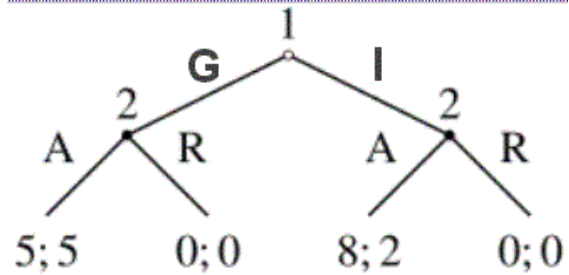


**Table 5**

<b>Ordinary Least Squares, using observations 1—48</b>						
<b>Model 1: Offer</b>						
<b>Variable</b>		<b>Coefficient</b>	<b>Standard Error</b>	<b>t-ratio</b>	<b>p-value</b>	<b>Significance</b>
<b>Constant</b>		4.93502	0.357526	13.8032	<0.0001	***
<b>Sexuality</b>	0: Straight 1: Gay	-0.0762684	0.337017	-0.2263	0.8220	
<b>Race</b>	0: White 1: Non-white	-1.17739	0.846246	-1.3913	0.1713	
<b>Age</b>	0: ≤21 1: >21	-0.183872	0.399837	-0.4599	0.6479	
<b>Politics</b>	0: Liberal 1: Moderate/ Conservative	-0.326339	0.399492	-0.8169	0.4185	
<b>Model 2: Minimum</b>						
<b>Variable</b>		<b>Coefficient</b>	<b>Standard Error</b>	<b>t-ratio</b>	<b>p-value</b>	<b>Significance</b>
<b>Constant</b>		2.79502	0.416157	6.7162	<0.0001	***
<b>Sexuality</b>	0: Straight 1: Gay	-0.188268	0.529762	-0.3554	0.7240	
<b>Race</b>	0: White 1: Non-white	0.218607	1.06933	0.2044	0.8390	
<b>Age</b>	0: ≤21 1: >21	0.424128	0.50462	0.8405	0.4053	
<b>Politics</b>	0: Liberal 1: Moderate/ Conservative	0.0496613	0.678227	0.0732	0.9420	

Appendix A: Recruitment**Volunteers needed for decision making study!**

**Are you a straight male or gay male interested in supporting student research at UVM?**



I am seeking self-identifying straight or gay men for a study on decision making.

Participants will:

- Play a game and answer a short demographic survey
- Receive a Ben & Jerry's gift card and possible cash rewards
- Be finished in less than one hour

Please contact Nick DeMassi to sign up or to ask further questions!



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Sample Email

Subject Line: Seeking participants for a research project on decision making

Hello everyone!

My name is Nicholas DeMassi, I am an economics student at the University of Vermont and I am seeking participants for my thesis research. In particular, I am looking to recruit self-identifying straight and gay men for a decision making study that involves playing a game and taking a short demographic survey.

Participation will involve compensation for your time. Playing the game does not involve interaction with other participants; however you will be in the same room as other participants. Your name and sexual orientation will not be known to other participants and will only be used by the researchers.

If you are interested in being a participant in this study or if you have further questions, please contact me at 774-254-1045 (phone call or text) or ndemassi@uvm.edu. Thank you very much for your time!

Nicholas DeMassi

774-254-1045

ndemassi@uvm.edu

## **Appendix B: Participant Materials**

First, let's learn how to play the game

1. There are two players: **Player A** and **Player B**.
2. **Player A** is given a sum of money and told to divide the money between **Player A** and **Player B**, using only whole numbers.
3. **Player B** then has the option to either accept the offer or reject it.
  - If **Player B** accepts the offer, **Player A** and **Player B** each receive the payouts that **Player A** offered.
  - If **Player B** rejects the offer, both players receive nothing.

Here are a couple of examples

- Suppose **Player A** is given \$6:
  - **Player A** offers \$4 to himself, and \$2 to **Player B**.
  - **Player B** accepts the offer, so he gets \$2 and **Player A** gets \$4.
- Suppose **Player A** is given \$9:
  - **Player A** offers \$5 to herself and \$4 to **Player B**.
  - **Player B** rejects the offer, so both players get \$0.

Let's check your understanding of how the game works with a couple of questions

1. Suppose **Player A** is given \$7. Which of the following divisions would it be possible for **Player A** to make? (Circle all that apply):
  - a. \$6 for **Player A** and \$2 for **Player B**
  - b. \$7 for **Player A** and \$0 for **Player B**
  - c. \$3 for **Player A** and \$4 for **Player B**
  - d. \$3 for **Player A** and \$2 for **Player B**
  
2. If **Player A** chooses to offer **Player B** \$3, and keep \$4 for herself, what are the options for **Player B**? (Circle all that apply):
  - a. Accept the offer and receive \$3
  - b. Accept the offer and receive \$0
  - c. Reject the offer and receive \$3
  - d. Reject the offer and receive \$0

When you play the game, you will first play as **Player A** and then you will play as **Player B**.

When you play as **Player B**, rather than viewing the offer from **Player A**, you will instead make a decision for *every possible* offer—the researchers will match your decisions with the actual offer that is made by your partner in the other room.

**It's Time to Play the Game!****Decision: Player A**

**Player A**

Select how you wish to divide \$10 between you and **Player B**.

Circle the allocation you choose.

Allocation	
Money for A (You)	Money for B (Partner)
\$10	\$0
\$9	\$1
\$8	\$2
\$7	\$3
\$6	\$4
\$5	\$5
\$4	\$6
\$3	\$7
\$2	\$8
\$1	\$9
\$0	\$10

**Decision: Player B**

**Player B**

Please indicate which offers you would be willing to accept by circling either **Accept** or **Reject** next to each offer.

Allocation		Your Decision	
Money for A (Partner)	Money for B (You)		
\$10	\$0	Accept	Reject
\$9	\$1	Accept	Reject
\$8	\$2	Accept	Reject
\$7	\$3	Accept	Reject
\$6	\$4	Accept	Reject
\$5	\$5	Accept	Reject
\$4	\$6	Accept	Reject
\$3	\$7	Accept	Reject
\$2	\$8	Accept	Reject
\$1	\$9	Accept	Reject
\$0	\$10	Accept	Reject

## Demographic Survey

Please answer the following questions by circling the letter of the best response. If you would prefer not to answer any particular question, please leave it blank.

- 1) What is your age?
  - A) 18-24
  - B) 25-34
  - C) 35-44
  - D) 45-54
  - E) 55+
- 2) What is your ethnicity?
  - A) White
  - B) Hispanic or Latino
  - C) Black or African American
  - D) Asian or Pacific Islander
  - E) Native American or American Indian or Alaska Native
  - F) Bi- or Multi-racial
  - G) Other \_\_\_\_\_
- 3) What is your gender?
  - A) Male
  - B) Female
  - C) Transgender Male
  - D) Transgender Female
  - E) Other \_\_\_\_\_
- 4) How do you identify sexually?
  - A) Straight
  - B) Bisexual
  - C) Gay
  - D) Queer
  - E) Unsure/Questioning
  - F) Other \_\_\_\_\_
- 5) What is the highest level of education you have attained?
  - A) High School
  - B) Trade/technical/vocational training
  - C) Some college (currently enrolled, not yet complete)
  - D) Bachelor's Degree
  - E) Graduate Degree
- 6) How would you describe yourself politically?
  - A) Liberal
  - B) Somewhat liberal
  - C) Moderate
  - D) Somewhat conservative
  - E) Conservative

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