

**THE DISPARITY BETWEEN ONE'S WILLINGNESS TO ACCEPT AND WILLINGNESS  
TO PAY**

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**Abstract**

*There is controversy in behavioral economics regarding the gap between one's willingness to pay (WTP) and willingness to accept (WTA). Economic theory states that WTA and WTP should be the same, but they are almost always different when observed. Some economists believe this is due to an individual's risk attitudes. Some believe experience and age are factors. Others are convinced that there really is no disparity. This paper will outline several experiments for each disparity factor considered and show that there is still no consensus among researchers. I also conducted my own experiment among college students which shows there is a significant gap between WTA and WTP when emotions are taken into consideration. Overall, in order to better understand consumer behavior, researchers should focus less on what causes this gap and more on which factors affect the gap most significantly given the type of good and the market the good is in.*

*Keywords: Willingness to pay, Willingness to accept, Consumer behavior, Behavioral economics*

**INTRODUCTION**

A loss feels worse than a gain feels good. Essentially, this explains the endowment effect. Once an item is endowed to you, it is harder for you to give that item up. In other words, your willingness to pay (WTP) to gain the item will be less than your willingness to accept (WTA) the loss of that item. There is a controversy in Behavioral Economics about what causes this disparity (and if there really is one) between WTA and WTP and why and in which situations does this ratio fluctuate. "Despite the overwhelming volume of evidence on the WTA-WTP gap accumulated to date, researchers are still far from agreement on the nature of the disparity and even on its very existence" (Georgantzís & Navarro-Martínez, 2010).

According to standard economic theory, WTA should equal WTP, but in behavioral economics, this is not a commonly observed result. There are many explanations for what might be causing this disparity. Some say, this gap could be explained by the income effect. The theory is that the more money you have, the more you will spend (Sayman & Onculer, 2002).

Another is that experience with getting and giving goods will shape people's preferences. As experience increases, the gap between one's willingness to accept and willingness to pay should decrease. Furthermore, there will be a bigger observed gap when subjects are in negative or difficult emotional states. Other explanations include how familiar subjects are with the good, their risk attitudes and morals. There are many more predicted answers regarding the gap between WTA and WTP. No consensus is yet reached by the economic community. Even though a lot of research has been carried out on this topic, the field of Experimental Economics is a relatively new field.

The majority of economists agree that the endowment effect plays a role in the relationship between WTA and WTP, but that exact relationship is unclear. Daniel Kahneman and his colleagues conducted an experiment which showed people's  $WTA > WTP$  through the analysis of the endowment effect (Kahneman, Knetsch & Thaler, 1990). Suppose you are given a UC San Diego mug. The blue and yellow, Triton embroidered mug is now yours. The fact that it is yours causes you to form an attachment to it, and assign it a value almost instantaneously after receiving it. Now your reference point, or your point of view, has changed because you have the mug as opposed of not having it. Since the mug is now in your reference point, selling it would be a loss to you because the mug would no longer be yours. And because a loss feels worse than a gain, you want to be compensated for your loss, thus resulting in your WTA to be higher than your WTP. Kahneman also used the buying and selling of mugs in his experiment and experienced these results. He and his team found the selling price for a mug was twice that of the buying price. It was concluded that people's choices depended on their reference points and that their  $WTA > WTP$  because of the endowment effect.

Kahneman only focused on the endowment effect and whether it was a player in the gap controversy. However, Harbaugh, Krause, and Vesterlund (2001) took the experiment one step further by studying the relationship between the gap and the subjects' age. They agreed with Kahneman that  $WTA > WTP$ , but wanted to see if the width of the gap would decrease once people became older and had more experience gaining and giving up goods. Referring back to the mug example - let's say you continued buying and selling the same type of mug for twenty years. Harbaugh and his team would guess that since you have been dealing with the loss of giving up the mug for a long while now, you will lower your selling price because you do not feel as bad to give it up for the 2,473rd time than you did the first few times. This hypothesis seems to make sense; however, results showed otherwise. Four groups were observed in this experiment: kindergarteners, third-graders, fifth-graders, and college undergraduates. Each group was given 3 pairs of objects and asked whether they wanted to keep the item or trade it for the other. Then, the endowment effect was measured for each group and assigned a numerical value. The results revealed that the effects were quite similar among each group, especially between the fifth graders and the undergraduates (3.0, 3.1). This finding was the

opposite of what economists expected. They thought that the inexperienced, younger children would more likely stay with the item they were endowed with, much more than give it away because they simply did not know any better. However, that was not the case. The endowment effect did not decrease, but stayed strong with age despite how the undergraduates were much older than the kindergarteners and had over three times the amount of experience in dealing with gaining and giving goods. Thus, the endowment effect is a true phenomenon and the WTA/WTP gap is not affected by age.

On the other hand, some economists believe that the endowment effect does not support the disparity between WTA and WTP. Also, is there really even a gap between these two? Zeiler and Plott (2005) concluded from their experiment that confusion among subjects was the reason behind the observed WTA/WTP gaps. They argued that prior experiments regarding this gap have never controlled for all the things that could be causing it. They decided to use the same type of study that Kahneman and his team used (buy/sell mugs in two groups: WTA and WTP), except they would control five different areas. To control for all misconceptions, Zeiler and Plott first made sure that subjects had an incentive to participate and do their best. Each subject was given \$5 for just showing up to the experiment. Also, it was explained that along with the \$5, each subject had the chance of winning a considerably large additional sum of money which was completely contingent on the choices they made in the experiment. Knowing that their reward was based on the decisions they made, the subjects were more likely to focus on the instructions to fully and accurately understand how everything was going to operate. Now that everyone knew their goal was to maximize their profits, the researchers conducted a training period. The training period consisted of the researchers thoroughly explaining the instructions to the subjects and giving them the opportunity to ask any questions they might have. Also, the experimenters provided examples of the types of decisions that could be made with each situation and what the resulting outcome or reward would be. The next step taken to control for misconceptions was to have paid practice rounds. This gave subjects a chance to apply their decisions and take note of the consequences without having their results recorded. Again, rounds were paid to give people an incentive to choose their best decision. Lastly, all choices and rewards were kept completely confidential. This helped ensure that people's true valuations for the mugs were recorded. The subjects did not have to worry about how others viewed them based on the decisions they made in the experiment.

After controlling these aspects of the experiments, the average price for the WTA group was \$5.69 and \$5.20 for the WTP group. Statistical analysis showed that these results were not even close to showing a significant difference between the two groups. No gap was observed. If the endowment effect was causing the disparity between WTA and WTP, Zeiler and Plott believed that there would still be a gap even after misconceptions were controlled for. But, there

was not. Therefore, these economists argue that subject misconceptions account for a hundred percent of the gap between people's willingness to accept and willingness to pay.

Jonah Lehrer advised, "To make difficult decisions...always listen to your feelings. They know more than you do" (Lehrer, 2004). Seeing that there were many different opinions regarding the disparity between people's willingness to accept and willingness to pay, economists turned more to psychology. Jennifer Lerner and her team looked at subjects' emotions and how they altered the gap between WTA and WTP, specifically the endowment effect (Lerner, Small, and Loewenstein, 2004). One group was given a good and given the option to sell it (WTA). The other was not endowed with a good, but shown the object and asked if they want the item or various amounts of money (WTP). Three emotional states were being tested: disgust, sadness, and neutral.

During stage one of the experiment, subjects watched a four minute video clip illustrating one of these emotions. Individuals afterwards recorded how much (on a scale of 1 to 5) they currently identified with twenty-seven different emotions, including blue, downhearted (applied to sad group) and repulsed (applied to disgust group). The disgust group erased the endowment effect with similar buy and sell prices observed, compared to the neutral group (WTA=WTP). Even more interesting, in the sad group, sell prices were lower and buy prices were higher relative to the neutral group. The complete opposite of the endowment effect was observed. Feelings of sadness reversed the endowment effect (WTP>WTA!). Feeling disgusted pushed people away from their target goal so not much action took place. Sad individuals had more feelings of sympathy and more "aww" moments so they were more giving. This result was significant because it showed that people's emotions greatly impact their economic decisions. This is why marketing agencies use sad themes to get more people to buy their product.

Besides emotion, other factors such as familiarity with a good, risk attitudes, and personality were also linked to the gap between WTA and WTP (Georgantiz & Navarro-Martinez, 2010). There was a similar design to the other experiments mentioned, where the WTP group valued bottles of wine that they were not endowed with and the WTA group valued wine that they *were* endowed with. Factors considered were: 1. attitudes of subjects toward the bottles of wine before and after they owned them 2. Feelings of subjects regarding being endowed with bottles of wine (there were four negative emotions to choose from and four positive ones) 3. Familiarity with the wine which was measured by asking if the subject would normally buy a bottle of wine like the one presented 4. Whether the subjects were risk loving, risk neutral, or risk averse and lastly 5. Personalities of the subjects (neuroticism, extraversion, openness to experience, agreeableness and conscientiousness). After taking these factors into consideration, these economists observed interesting results.

Regarding attitudes, the economists hypothesized that if there were changes in attitude it would be from subject misconceptions about the good. However, there was no significant

difference in subject attitudes when they were endowed with wine and when they weren't. Owning the wine during the experiment did not change subjects' attitudes about the wine itself, indicating that attitudes about the target good (in this case bottles of wine) have no effect on the gap between WTA and WTP. On the contrary, feelings made a difference in the gap. The subjects felt good simply because they were endowed with the good. Same as how you felt good when you were given the Triton mug. These happy feelings were positively linked with how you valued the mug. These subjects felt happy when there given bottles of wine.

Additionally, being familiar with the wine had a negative relationship with monetary valuations whereas risk aversion provided a positive correlation. Subjects who were less familiar with the wine felt more uncertain, which led to feel risk averse. Those experiencing more risk aversion were observed with having a drastically higher WTA showing that familiarity affects risk attitudes which in turn plays a huge part in the WTA/WTP gap.

Finally, personality traits had also a lot to do with the gap. Agreeableness positively affected the gap whereas extraversion and conscientiousness negatively affected it. Extraversion in particular played an extra significant role as it mirrored the results regarding familiarity and risk attitudes. When people feel uncertain they are more risk averse which in turn raises their WTA. So in fact, personality traits have an impact on the gap between people's willingness to accept and willingness to pay. Overall, it is observed that different psychological processes significantly affect the disparity between WTA and WTP. This shows that economists must pay more attention to the psychology of people's choices to help fully explain this gap and how people construct their valuations for goods.

Along with the psychological factors considered above, a group of economists also looked at morality to help explain the WTA/WTP gap (Biel & Johanson-Stenman, 2006) . They focused on public goods in the experiment. A public good is referred to anything where consumption of the good by another individual does not lower the availability of the good for you, and no one can stop you from consuming the good. Examples of public goods are, public libraries, or in the case of this experiment, a donation to a charity. From previous experiments, Andreas Biels and his team noticed that the WTA/WTP ratio was the highest when looking at public goods. They looked at one specifically regarding lottery tickets. People purchased the lottery tickets that brought on the strongest emotions. Therefore, Biels concluded that loss aversion from the endowment effect couldn't be the only reason for the substantial gap between WTA and WTP. He believed that the differences are because of people's emotions along with specific moral standards.

Biels and his team wanted to see how emotions affected how individuals donated to charity. Subjects were divided into two groups: a WTA and a WTP group, similar to the other experiments mentioned above. The WTA group got \$50 for participating and was told that \$100

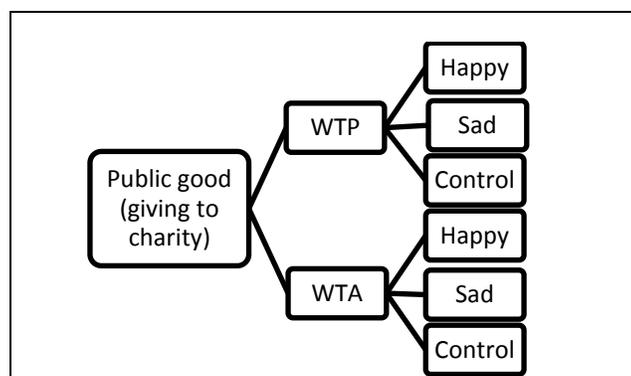
would be donated to a non-profit organization advocating for environmentalism. The WTP group was given \$150 for participating. Then both groups were given a choice. The subjects in the WTA group could either keep the original deal or just keep all the money to themselves instead of donating it. Of the fifty-one people in the group, twenty three donated to the cause. On the other hand, the WTP group has a choice to keep their original deal or to donate \$100 and keep \$50. Only nine out of forty eight people donated. The money went into their reference points so it was harder for them to give up then the group who did not have the money in the first place. Again, think of the Triton mug. Giving up what was yours felt bad.

Most people did not donate because of the endowment effect, but the ones that didn't donate in WTA group felt more negative emotions such as shame. Not donating in the WTA group is seen more immoral than not donating in the WTP group because the money was never yours so the endowment effect is not pushing you. The emotions observed in this experiment were directly linked to morality. Subjects' morals affected the emotions that they felt in this experiment. They felt negative emotions when they did not donate because they knew it was the right thing to do. The fact that donating to a charity is a public good makes the gap between wider because people might think someone else will donate and they do not have to be the ones. These economists concluded that emotions and moral standards were responsible for the huge difference seen between WTA and WTP.

## RESEARCH METHODOLOGY

I was quite interested in Andreas Biels' research regarding public goods and emotions, so I conducted my own study similar to his. However, I focused specifically on students because the gap observed among them is lower than average. My experimental variable was emotion because it seemed to have a great impact on the gap. My hypothesis was that the big shift in the gap from different emotions would cause the overall gap in the student subjects to be greater than previous experiments have observed. Below is a figure that illustrates the experimental design.

Figure 1: Proposed Experimental Design



## Experiment-administration and Findings

Subjects started off differently depending which group they were in. The WTA group got \$30 for participating and was told that \$60 would be donated to a non-profit organization advocating for environmentalism. The WTP was given \$90 for participating. These two groups were then further branched into either the happy, sad, or neutral group. Subjects in the happy group were asked to focus on an image of colorful, vibrant balloons in the sky. In the sad group, subjects looked at a picture of old, drooping sunflowers in a vase. The neutral group had no image.

After focusing on their images (if they one), subjects forwarded to the next page where they were given a choice. The subjects in the WTA group could either keep the original deal or keep all the money to themselves instead of donating it. The WTP group has a choice to keep their original deal or to donate \$60 and keep \$30. In the end, subjects were asked what emotion the image elicited for them. It seemed as if the sad group was not as affected by the image as the happy group. This might have been because some subjects interpreted the picture to be peaceful or hopeful rather than gloomy or sad. Another possibility could be that the subjects who participated in my experiment were all very giving for within the WTP control group, most people donated. Overall, my sample size for each group was small so I cannot say that my results were accurate. The most significant result that I observed was within the WTA happy group. In this group, an overwhelming majority (85.7%) chose to donate to charity showing that people are more likely to donate when they are joyful. Thus, emotions have a great effect on how individuals make their decisions.

## Discussions

There are all these opinions of how, when, and why the gap exists between people's willingness to accept and willingness to pay. John Horowitz and Kenneth McConnell looked at different situations and how the WTA/WTP ratio changes in each one (Horowitz & McConnell, 2000). Forty-five different studies were observed using all sorts of various items for subjects to be endowed with: some including hunting licenses and chocolate. They found that students have lower WTA-WTP than the general public. Also, experiments involving money have lowest ratio. The nearer an item becomes to being money, the smaller the WTA/WTP ratio. On the contrary, non-ordinary market goods have a higher ratio because people are less familiar with the object, causing uncertainty, which leads to risk aversion. Overall, public goods have the highest ratio, as noted as a part of the argument above. According to UCSD professor Richard Carson, this could be because "there is not typically a market to sell public goods and hence they cannot be traded back and forth like marketed goods" (personal communication, November 2011). Trading can lead to taking advantage of a price in different markets resulting in WTA and WTP to be closer.

Furthermore, the economists analyzed survey design in these 45 experiments (Pearce, Atkinson and Mourato, 2006). Real experiment results are not significantly different from hypothetical experiment results. If subjects tried to form the best portfolio of decision strategies rather than stating their true valuations, then we would expect these experiments to have lower ratios than the ones actually observed. There is such a controversy regarding the gap between WTA and WTP that this group of economists attempted to review all types of experiments. Within each one, they considered the type of goods used, the experimental design, the types of subjects used, and the results received. These economists believed it necessary to summarize all the types of experiments that exist especially because a consensus cannot be reached regarding this issue. This overview might be helpful for economists to look at and see where results are different, the same, or just need more research and data.

The disparity between one's willingness to accept and their willingness to pay has been a hot topic in the field of experimental economics for quite some time now. However, economists cannot agree what causes this disparity. It was not until 1963 when WTA-WTP became focused on the contingent valuation method, which shows that the value of any good can be expressed in monetary terms (Sayman & Onculer, 2011). As a result, the WTA-WTP gap was first noted in 1964 by Peter Louis Henderson. Now experts are wondering whether the gap is due to the endowment effect, emotions, risk attitudes, familiarity with the good, personality or morality. It seems it is a combination of all these factors. Not one behavior, aspect, or characteristic results in this gap to form. Perhaps, instead of focusing on where the gap comes from now, more emphasis should be placed on which aspect more heavily influences the gap given the type of good used and the group of subjects used. Once we figure out what the gap is from, we can change the way we look at market goods and more importantly how consumers make decisions.

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