Rationality, Tort Reform and Contingent Valuation:
A Classroom Experiment in Starting Point Bias

Victor A. Matheson
Assistant Professor

Department of Economics
Williams College
Fernald House
Williamstown, MA 01267

Email: Victor.A.Matheson@williams.edu
Phone: 413-597-2144
Fax: 413-597-4045

Draft: March 5, 2004

ABSTRACT: This simple classroom experiment demonstrates the existence of starting point bias. Asked to place a dollar value on a non-market good such as the loss of a limb or the destruction of a wetland, students place a much smaller value on the loss if a small value is first suggested by the questioner while placing a significantly higher value on the loss when a large value is originally suggested. This experiment can be used in theory classes to demonstrate the limits of individual rationality or in applied classes in law or environmental economics in relation to tort reform or contingent valuation.

JEL Codes: A2 - Economics Education and Teaching of Economics; C42 - Survey Methods; C91 - Laboratory, Individual Behavior; K41 - Litigation Process; Q51 - Valuation of Environmental Effects

Rationality, Tort Reform and Contingent Valuation:

A Classroom Experiment in Starting Point Bias

INTRODUCTION

In this classroom experiment, the ability of people to place reasonable dollar values on things such as health, the environment, and human life is tested. The science of economics depends critically on the assumption that people are able to routinely and rationally place specific values non-market goods. Government health and safety regulations are deemed acceptable based upon their cost per life saved, environmental amenities are often valued through the use of survey data (known as contingent valuation), and the tort system is based upon the idea that juries can rationally determine awards that will properly compensate victims for economic damages. Unfortunately, people are not often asked to make such value determinations, and therefore it is reasonable to question the ability of people to make such estimates.

The purpose of this paper is to explain a simple classroom experiment that can be used by teachers of economics or law that can be used to demonstrate how easily people can be misled when asked to estimate the dollar value in a quality of life case. The experiment can be easily altered for use in an environmental and natural resource economics class or any other course in which contingent evaluation is studied. The next section presents the methodology of the experiment. This is followed by one set of results from this experiment. The paper closes with conclusions and suggestions for further research.

METHODOLOGY

2

Students are given a hypothetical situation where they are asked to place a dollar value on some non-market good. In the actual case presented in the "Results" section, all students were told, "Suppose you have been asked to serve on a jury on a matter dealing with personal injury. In the case before you, a 50-year old construction worker was injured on the job due to the negligence of his employer. As a result, this man had his right leg amputated at the knee. Due to this disability, he cannot return to the construction trade and has few other skills with which he could pursue alternative employment. The negligence of the employer has been firmly established and health insurance covered all of the related medical expenses. Therefore, your job is to determine how to compensate this worker for the loss of his livelihood and the reduction in his quality of life."

One group of students was first asked whether the worker deserved to be compensated more or less than $10,000 and then asked how much more or less. Another group of students was first asked whether the worker deserved to be compensated more or less than $10,000,000 and then asked how much more or less. In the results presented in the following section, a third group of students was simply asked how much the worker deserved to be compensated without any initial suggestion as to an appropriate amount. This third group was used as a control group for more detailed research but need not be included in a simple classroom experiment.

It is crucial that the students only be exposed to one of the two (or three) monetary suggestions. This can be done either by handing out survey forms that randomly have some students given the $10,000 figure and others given the $10,000,000 figure or by having half of the students physically leave the classroom while the instructor asks the students to write down a number after being orally asked either more or less than $10,000 and then having the other half of the students leave the classroom while the second group is given the $10,000,000 suggestion. It is, of course, imperative that students not communicate with one another while forming their valuations. In either

case, this part of the experiment can be completed in less than 5 minutes.

Tabulation of the student responses can either be done on the spot or outside the classroom by the instructor with results presented in a subsequent class. The experiment has a greater impact on the students if feedback is provided immediately, and a computerized classroom with a spreadsheet or statistical package will greatly speed the process.

RESULTS

One hundred and sixty-nine undergraduate students comprising three sections of principles of economics and two sections of intermediate microeconomics at a private liberal arts college were posed the aforementioned scenario using survey forms. The questionnaire also included demographic data including gender, year in school, number of economics classes taken, hometown, and political leanings. Copies of these survey forms are available from the author upon request. Again, in this experiment the class was divided randomly into thirds to provide a control group which was not subjected to a starting point bias. In other classroom settings it will be quicker and easier to have only two groups, and this will also maximize the chances of getting the desired results even with small class sizes.

Other scenarios can be posed as long as the basic idea of suggesting different values to different groups is maintained. Through past trials, this particular scenario has been calibrated so that a typical unbiased response will lie in-between the two suggested starting points which serves to maximize the observed differences. Table 1 shows the mean and median responses of the three groups along with measures of spread.

The 9 to 1 difference in the mean compensation awarded by those who were initially asked "more or less than $10,000,000" compared to those initially asked "more or less than $10,000" is

striking, and a hypothesis that the two means are equal can be rejected at the 99.9% significance level. Furthermore, even in the individual classes, some of which had as few as 6 students in each group, in no case was the ratio between the mean response in the two groups subject to a starting point bias less than 2.5 to 1. Furthermore, in each individual class, even the minimum reported valuation among members of the $10,000,000 group matched or exceeded the valuations of between 71 and 89 percent of the members in the $10,000 group. This suggests that an instructor is safe to perform this test even in small classes and will still get meaningful results.

Demographic differences appear to have no major effects on valuation. Male students and those identifying themselves as having strong Democratic Party leanings tended to give slightly higher awards (in the neighborhood of a 10 percent premium), than their counterparts, but these differences are dwarfed by the starting point bias. The inclusion of additional questions into the classroom experiment is likely to significantly increase the cost of the project in terms of time and effort without yielding interesting results.

Finally, students with a more extensive economics background did no better (in terms of a narrower spread between the three groups and a lower overall standard deviation) than those students with little or no prior economics experience. Therefore, an instructor can feel confident that interesting results will be achieved regardless of the class level.

CONCLUSION

In many cases, people's estimates of value for non-market goods can be manipulated through the simplest of techniques. While this fact may be well known in theory to many in the field of economics, these economists may not know how easy it is to demonstrate this phenomenon in practice through a quick and easy classroom experiment. Such a demonstration is useful in

intermediate microeconomic theory classes when the concept of individual rationality is discussed. This experiment is also useful in field classes in law and economics or public policy in debating the merits of tort reform or caps on jury awards. In addition, the experiment is useful for courses in the field of environmental and natural resource economics, cost benefit analysis, or any other course where contingent valuation, and the limits thereof, is discussed.

ACKNOWLEDGMENTS

APPENDICES

This electronic document includes the handouts given in class to the students as well as the results summary that they were given following the tabulation of the data.

TABLE 1: Results of Starting Point Bias Experiment

	$10,000 suggested	$10,000,000 suggested	No suggestion made
Mean	$803,536	$7,206,040	$2,239,036
Median	$375,000	$4,000,000	$1,000,000
Minimum	$8,000	$500,000	$5,000
Maximum	$10,000,000	$100,000,000	$12,000,000
Standard Deviation	$1,868,411	$14,029,821	$2,856,390
Observations	n = 56	n = 57	n = 56

Test Case in Forensic Economics: Results Summary

Thank you for participating in this test case in forensic economics. As you remember, you were all asked to consider the following hypothetical case: "Suppose you have been asked to serve on a jury on a matter dealing with personal injury. In the case before you, a 50-year old construction worker was injured on the job due to the negligence of his employer. As a result, this man had his right leg amputated at the knee. Due to this disability, he cannot return to the construction trade and has few other skills with which he could pursue alternative employment. The negligence of the employer has been firmly established and health insurance covered all of the related medical expenses. Therefore, your job is to determine how to compensate this worker for the loss of his livelihood and the reduction in his quality of life."

Unbeknownst to each of you, you were asked different questions following this introduction.

One-third of you were first asked, "Should the plaintiff in this case be compensated more or less than $10,000?" and then asked, "How much more or less than $10,000 should the plaintiff be compensated?"

The next group were first asked, "Should the plaintiff in this case be compensated more or less than $10,000,000?" and then asked, "How much more or less than $10,000,000 should the plaintiff be compensated?"

The third group was simply asked, "How much should the plaintiff be compensated?"

If you all are rational, as we economists generally assume, your damage awards should have been the same for each group. The actual summary statistics are provided below in Table 1.

TABLE 1: Results of Starting Point Bias Experiment

	$10,000 suggested	**$10,000,000 suggested**	**No suggestion made**
Mean	$803,536	$7,206,040	$2,239,036
Median	$375,000	$4,000,000	$1,000,000
Minimum	$8,000	$500,000	$5,000
Maximum	$10,000,000	$100,000,000	$12,000,000
Standard Deviation	$1,868,411	$14,029,821	$2,856,390
Observations	n = 56	n = 57	n = 56

A hypothesis test that the mean of the $10,000 and $10,000,000 group are the same can be rejected at the 99.9% significance level.

None of the demographic variables revealed significant differences in compensation although males and those identifying themselves as having "Strong Democratic" leanings gave a slightly higher compensation premium (roughly 10%) in comparison to their counterparts.

Test Case in Forensic Economics

You are being asked to participate in a research experiment regarding jury awards in lawsuits. Please read the description of the case below and answer the questions that follow. ***It is critical that you not discuss your answers with any fellow students nor should you look at their survey form until after you have completed the questions and turned in your sheet.*** The results of the experiment will be made available to you via the Internet within the next several weeks. Thank you for participating in this project.

_____

Suppose you have been asked to serve on a jury on a matter dealing with personal injury. In the case before you, a 50-year old construction worker was injured on the job due to the negligence of his employer. As a result, this man had his right leg amputated at the knee. Due to this disability, he cannot return to the construction trade and has few other skills with which he could pursue alternative employment.

The negligence of the employer has been firmly established and health insurance covered all of the related medical expenses. Therefore, your job is to determine how to compensate this worker for the loss of his livelihood and the reduction in his quality of life.

_____

Should the plaintiff in this case be compensated more or less than $10,000?

How much more or less than $10,000 should the plaintiff be compensated? (Write down the total dollar amount you think the plaintiff should receive.)

What is your gender?   Male   Female

What is your year in school?   First-year   Sophomore   Junior Senior

Counting a high school AP economics
course as 1 semester and <u>not</u> counting any   0 sem. 1 sem. 2 sem. 3 sem. 4 sem. More _____
classes you are taking this semester, how
many economics courses have you had?   (Circle one. If more than 4 sems., write number.)

What is your hometown? (Write down your city and state/province if you are from U.S. or Canada and your city and country if you are an international student.)

What best describes your political leanings? Strong   Leaning   LeaningStrong
                                              Democrat   Democrat   RepublicanRepublican

Test Case in Forensic Economics

You are being asked to participate in a research experiment regarding jury awards in lawsuits. Please read the description of the case below and answer the questions that follow. ***It is critical that you not discuss your answers with any fellow students nor should you look at their survey form until after you have completed the questions and turned in your sheet.*** The results of the experiment will be made available to you via the Internet within the next several weeks. Thank you for participating in this project.

_____

Suppose you have been asked to serve on a jury on a matter dealing with personal injury. In the case before you, a 50-year old construction worker was injured on the job due to the negligence of his employer. As a result, this man had his right leg amputated at the knee. Due to this disability, he cannot return to the construction trade and has few other skills with which he could pursue alternative employment.

The negligence of the employer has been firmly established and health insurance covered all of the related medical expenses. Therefore, your job is to determine how to compensate this worker for the loss of his livelihood and the reduction in his quality of life.

_____

Should the plaintiff in this case be compensated more or less than $10,000,000?

How much more or less than $10,000,000 should the plaintiff be compensated? (Write down the total dollar amount you think the plaintiff should receive.)

What is your gender?   Male   Female

What is your year in school?   First-year   Sophomore   Junior Senior

Counting a high school AP economics
course as 1 semester and <u>not</u> counting any   0 sem. 1 sem. 2 sem. 3 sem. 4 sem. More _____
classes you are taking this semester, how
many economics courses have you had?   (Circle one. If more than 4 sems., write number.)

What is your hometown? (Write down your city and state/province if you are from U.S. or Canada and your city and country if you are an international student.)

What best describes your political leanings? Strong   Leaning   LeaningStrong
                                                                    Democrat   Democrat   RepublicanRepublican

Test Case in Forensic Economics

You are being asked to participate in a research experiment regarding jury awards in lawsuits. Please read the description of the case below and answer the questions that follow. ***It is critical that you not discuss your answers with any fellow students nor should you look at their survey form until after you have completed the questions and turned in your sheet.*** The results of the experiment will be made available to you via the Internet within the next several weeks. Thank you for participating in this project.

Suppose you have been asked to serve on a jury on a matter dealing with personal injury. In the case before you, a 50-year old construction worker was injured on the job due to the negligence of his employer. As a result, this man had his right leg amputated at the knee. Due to this disability, he cannot return to the construction trade and has few other skills with which he could pursue alternative employment.

The negligence of the employer has been firmly established and health insurance covered all of the related medical expenses. Therefore, your job is to determine how to compensate this worker for the loss of his livelihood and the reduction in his quality of life.

How much should the plaintiff in this case be compensated? (Write down the total dollar amount you think the plaintiff should receive.)

What is your gender?   Male   Female

What is your year in school?   First-year   Sophomore   Junior Senior

Counting a high school AP economics
course as 1 semester and <u>not</u> counting any   0 sem. 1 sem. 2 sem. 3 sem. 4 sem. More _____
classes you are taking this semester, how
many economics courses have you had?   (Circle one. If more than 4 sems., write number.)

What is your hometown? (Write down your city and state/province if you are from U.S. or Canada and your city and country if you are an international student.)

What best describes your political leanings? Strong   Leaning   LeaningStrong
                                             Democrat   Democrat   RepublicanRepublican