Protected Values, Range Effects, Guilt, and Tradeoff Diffculty in Moral Decision Making

Christopher W. Poliquin

1) Introduction

"Protected values" (PVs) are values that people believe can not be traded for any benefit. Often PVs take the form of moral prohibitions against actions. Someone might believe that it is never acceptable to cut old growth forest no matter how great the benefits, hence the value (utility) that one gets from preserving old growth forests is protected from tradeoffs with other values. Another example is stem cell research. No matter how many lives such research might save, some people believe that it is never acceptable to destroy human embryos. Hence, the value of human embryos is protected from tradeoffs with other values and goods. This phenomenon is sometimes described as an unwillingness to trade "sacred values" for secular ones[76]. When a good is protected it is impossible to draw an indifference curve representing the tradeoffs that can be made for other goods since "the marginal rate at which one good can substitute for another is infinite"[77].

Decision theory assumes that people are able to make tradeoffs so that in comparing two or more options a loss on one dimension can be compensated for by a gain on another dimension. If people are serious about having protected values then it becomes impossible to compare the expected utility of options in a cost-benefit analysis since such utility is infinite. Willingness to pay measures that allow for the expression of PVs can not measure the benefits of a public policy even if only one person has a protected value for the good in question. Baron and Leshner (2000) write, "if we try to find the average willingness to pay more taxes (say) in order to save a forest, and if some people say that the forest has infinite

76. Amos Tversky and Eldar Shafir. Choice under conflict: The dynamics of deferred decision. *Psychological Science*, 3(6):358–361, 1992.
77. Jonathan Baron and Sarah Leshner. How serious are expressions of protected values? *Journal of Experimental Psychology: Applied*, 6:183-194, 2000.

value, then the average will be infinite, regardless of what others say"[78]. Thus, protected values have implications for contingent valuation methods like those used to assess the value of environmental damages after the Exxon Valdez oil spill[79].

Beattie (1988) writes that people may not make tradeoffs because they are either unable or unwilling to do so. For example, people may claim that they are unable to reliably compare something like an increase in the probability of cancer with a decrease in the probability of osteoporosis, but evidence from Beattie (1988) suggests that despite finding such comparisons difficult, people's judgments are often consistent and reliable. With respect to moral issues, people with protected values are presumably better described as being unwilling rather than unable to make tradeoffs since moral prohibitions are often expressed as lexical rules such as "thou shalt not kill."

Research by Baron and Leshner (2000) on protected values shows that "PVs are strong opinions, weakly held"[80]. They asked people if tradeoffs would be acceptable for a variety of scenarios as a way of identifying protected values. In instances in which people thought something should never be allowed they asked subjects to imagine counterexamples of when tradeoffs would be acceptable. Asking people to imagine scenarios in which tradeoffs would be acceptable is an effective way of reducing the expression of protected values[81]. This means that some protected values are exaggerated expressions of moral rules that perhaps result from a lack of imagination in thinking of cases in which ignoring rules would be acceptable.

If protected values can be challenged successfully then "apparent PVs might not always preclude the use of valuation measures in cost-effectiveness analysis, or negotiated agreement on controversial issues"[82]. The work of Baron and Leshner (2000) was specifically concerned with the seriousness of expressions of protected values. This paper deals with

78. Baron and Leshner. How serious are expressions of protected values?

79. Richard T. Carson, Robert C. Mitchell, Michael Hanemann, Raymond J. Kopp, Stanley Presser, and Paul A. Rudd. Contigent valuation and lost passive use: Damages from the exxon valdez oil spill. Environmental and Resource Economics, 25:257–286, 2003.

80. Baron and Leshner. How serious are expressions of protected values?

81. Baron and Leshner. How serious are expressions of protected values?

82. Baron and Leshner. How serious are expressions of protected values?

valuation measures and protected values by asking subjects to make rather than imagine potential tradeoffs.

Even if people are willing to make tradeoffs, valuation measures such as conjoint analysis or willingness to accept (WTA) might not accurately reflect people's underlying preferences. In decision theory the principle of invariance implies consistency so that the importance of a dimension in a tradeoff does not vary with the method used or the description of the options[83]. Violations of descriptive and procedural invariance have led some researchers to argue that preferences are "not simply read of from some master list, [but] are constructed in the elicitation process"[84]. Beattie (1988) argues that procedural or descriptive variance does not imply true preferences do not exist. Instead, she argues that true preferences are stable but may be distorted in the elicitation process with different methods of elicitation creating different distortions.

When making tradeoffs, judgments may be affected by the stimulus range so that the rate of substitution between two goods depends on the range of values presented, holding the response mode constant. Range refers to the size of the interval between the minimum and the maximum value of the stimulus. For example, subjects could make judgments for stimuli values of 10, 20, and 30, or over a larger range, such as 5, 20, and 35. Some biases documented by Kahneman and Tversky (1984) can be corrected for in the elicitation process, but in the case of range effects no such corrections are possible because it is impossible to present stimuli independent of range[85]. Beattie (1988) looked for range effects and found that subjects behaved normatively. Weights for dimensions in a rating task were unaffected by range when the range did not provide meaningful information, and were affected by range when the stimulus range was meaningful (as in the case of grading students or evaluating job applicants). Her research suggests that subjects' estimated preferences are not biased by range. The scenarios used by Beattie (1988) in her

83. Daniel Kahneman and Amos Tversky. Choices, values, and frames. *American Psychologist*, 39:341–350, 1984.
84. Tversky, Amos, Sattath, Shmuel, and Slovic, Paul. Contigent weighting in judgment and choice. Psychological Review. 95(3): 371-384, 1988.
85. Beattie. Perceived differences in tradeoff difficulty.

range effect studies, however, did not involve moral issues. In Experiment 1 of this study, I find that there is a significant interaction between protected values and stimulus range, which suggests that contingent valuation may not be a reliable barometer of preferences in the presence of protected values.

In Experiment 2, I look at the implications of protected values for decision difficulty and guilt feelings. I find that relying on moral rules makes judgment easier for subjects with PVs, and that subjects with PVs anticipate feeling guiltier than those without PVs about making tradeoffs between protected goods and money. I also find that protected values make people less attentive to the monetary dimension of these tradeoffs, and that increasing the amount of money does less to alleviate guilt about making tradeoffs for people with PVs.

2) Experiment 1

The goal of experiment 1 was to test for biases in eliciting preferences using two tasks: choice and matching. In a choice task, a subject chooses among options that have fixed values for all attributes. In a matching task, a subject specifies a value for an attribute that would make him indifferent between options. For example, a choice task for evaluating two cars would have subjects specify which vehicle they prefer based on data about miles per gallon and price. A matching task, however, might ask subjects to specify the price of one car that would leave them indifferent between alternatives with different fuel efficiencies.

The matching task in this experiment was used to test for range effects. Range refers to the size of the interval between the maximum and minimum values of a stimulus, and range effects refers to the effect that a change in the interval has on elicited preferences. The stimuli in this experiment were amounts of five goods that were shown to be frequently protected in previous studies[86]. There were five scenarios about public policy choices that entailed making tradeoffs, and subjects specified the amount of one good (e.g., money) that would be needed to compensate for a loss in another (e.g., unpolluted water). I found range

86. Baron and Leshner. How serious are expressions of protected values?

effects for subjects with protected values. The choice task in this experiment asked subjects to decide whether a tradeoff was acceptable or left them indifferent. Some subjects saw the values they had entered in the matching task as the attribute values for the choice task.

This experiment also confirmed that protected values are often overgeneralizations of moral rules[87]. Subjects who say that an action is never accept- able often change their mind when given specific scenarios asking them to make tradeoffs. Subjects with protected values are more likely to change their mind doing the choice task.

2.1) Method

Eighty-three subjects completed an online questionnaire for $3. Of those eighty-three,

seventy-six produced usable data. 73.68% of these subjects were female, the youngest participant was twenty-five and the oldest was seventy-two 1. The median and mean age were both forty-three.

The questionnaire first presented subjects with five actions in random order on separate screens and asked them to indicate when the action would be acceptable. The situations were (percentage with PV in parentheses)[88]:

- Dropping a nuclear bomb on a civilian population (40.79%).
- Using stem cells from fertilized embryos to grow human organs in chimpanzees for transplants (17.11%).
- Dumping waste from a factory into a river (72.37%).
- Forcefully sterilizing women for population control (52.63%).
- Not prosecuting a business that is almost certainly discriminating against blacks and women (60.53%).

87. Baron and Leshner. How serious are expressions of protected values?

88. Sex is not a significant determinant of protected values. Comparing the number of PVs for males and females using Fisher's Exact Test for Count Data, p = .287

Possible Responses for Each Action

This is acceptable...		
A1	Always	(0.536%)
A2	When the benefits are great enough	(10.789%)
A3	When it prevents more of the same thing	(2.895%)
This is unacceptable because...		
U1	I cannot imagine any instances in which this is acceptable.	(48.684%)
U2	Even though the benefits may be great enough to justify it people can not recognize these cases so it is best not to do it.	(11.579%)
U3	It is unacceptable as a general rule though we can make exceptions under some circumstances.	(25.526%)

Table 1: For each action, sub jects chose the first statement that applied from the above list. The percentage of times each statement was endorsed in experiment 1 is shown in parentheses.

Tradeoffs by Scenario

Scenario		
Nuclear Bomb	Foreign civillian lives	Your countrie's soldier's lives
Stem Cells	Embryos destroyed	Lives saved
Pollution	Species saved from extinction	Jobs lost at a factory
Sterilization	Proportion of population sterile	Increase in GDP per capita
Discrimination	Cases of discrimination not prosecuted	Dollars saved

Table 2: The goods used for tradeoffs in each of the five scenarios.

As in Baron and Leshner (2000), subjects could choose from the options listed in Table 1 for each action and were asked to select the first that applied, the table also shows the percentage of times each statement was endorsed.

Subjects were considered to have a protected value for an action only when they responded (U3) "I cannot imagine any instances in which this is acceptable." Seven subjects had no protected values and two had protected values for all actions. The mean number of

protected values for the five cases was 2.43 and the median was 3.

Subjects were then given scenarios that entailed making tradeoffs for a range of values. The goods for the tradeoffs in each scenario are shown in Table 2. Tradeoffs were elicited using two methods: a choice task and a matching task. In the choice task subjects were asked to indicate whether a tradeoff was acceptable, not acceptable, or left them indifferent. An example of the choice task for a factory dumping waste into a river is shown in Figure 1. In the matching task subjects were presented with the same scenarios but asked to provide the quantity of something else that would make the tradeoff acceptable or to indicate that no tradeoff would ever be acceptable. An example of the matching task for the dropping of a nuclear bomb on a civilian population is shown in Figure 2.

Choice Task Example

The following scenario asks you to make tradeooffs between 75, 100 and 125 jobs being eliminated and 4 species becoming extinct.

A factory has been dumping waste into a nearby river, which if continued will result in the extinction of rare plant and animal species found nowhere else. The factory could be forced to install cleaner dumping technology that would prevent the extinctions, but would need to eliminate jobs in order to pay for the improvements to the plant.

Species Extinctions Prevented	*Jobs Eliminated*
4	**100**

Is the above tradeoff acceptable?
Yes
No
Indifferent

Figure 1: An example of the choice task for a factory dumping waste into a river. The number in the right cell varied over either a small or a large range. See Table 2 for the goods used in each scenario.

Matching Task Example

The following scenario asks you to make tradeoffs between 75,000; 300,000 and 525,000 foreign civilians being killed and your country's soldiers being killed. The nuclear bombings of Hiroshima and Nagasaki during World War II raised the moral issue of whether it is acceptable to drop a nuclear bomb on a civilian population in order to stop a war that would likely cause a large number of fatalities. Imagine that your country is involved in a prolonged and bloody conflict. You are faced with the decision of whether to drop a nuclear bomb that would kill civilians but prevent the death of your country's soldiers. How many of your own country's soliders would need to be saved in order to justify killing 300,000 civilians?
Enter −1 (negative one) if this is never acceptable.

Figure 2: An example of the matching task for the scenario of dropping a nuclear bomb on a civilian population. The boldfaced number varied over either a small or large range. See Table 2 for the goods used in each scenario.

The ordering of the tasks was randomized and subjects were given either a small or large range of values for all scenarios over which to make tradeoffs. The midpoint of the range for each scenario was the same but the small range deviated 25% from the midpoint while the large range deviated 75% from the midpoint. Subjects could see the range of values they would be presented with at the beginning of each task. Those who were given the matching task before the choice task saw the values they had entered in the former as the tradeoff values for the latter. So a subject that did the matching task first for the pollution scenario and said it would be acceptable to lose 400 jobs to save 2 species would then see these same values in the choice task. Subjects who either did the choice task first or were never willing to make tradeoffs saw a series of default values for the tradeoffs in the choice task.

2.2) Results

Section 2.2.1 shows that people with protected values are less willing to make tradeoffs with the protected good, but are more likely to change their apparent values after being presented with a plausible scenario that challenges them to make tradeoffs. Section 2.2.2 argues that protected values result in under-sensitivity to stimulus range. Section 2.2.3 shows that the ordering of the tasks did not affect responses to the matching task, meaning that subjects did not use the default values presented in the choice task as an anchor for their judgments.

2.2.1) Unwillingness to make tradeoffs and apparent values

Subjects were allowed to not answer in the matching task by indicating that tradeoffs between two goods would never be acceptable. Under scarcity, such a position is impractical, but this is exactly what is implied by protected values and not surprisingly subjects with PVs for a given scenario are significantly more likely than subjects without PVs to say that tradeoffs would never be acceptable.[89]

The choice and matching tasks challenged subjects' expressions of PVs by giving them the opportunity to make tradeoffs. A protected value becomes unprotected when responses to the choice or matching task are inconsistent with the idea that something is never acceptable. For example, if a subject with a protected value for "dumping waste from a factory into a river" agreed to allow pollution once seeing the scenario, then that value is now unprotected. The results of this study are similar to those found by Baron and Leshner (2000) when they asked subjects to imagine potential scenarios in which tradeoffs would be justified. Baron and Leshner (2000) found that apparent PVs became unprotected in 10% of cases in which a subject could imagine a potential counterexample scenario. In this study, the scenarios resulted in 17.44% of apparent PVs becoming unprotected for the choice task and 3.33% becoming unprotected for the matching task for an overall average

89. Calling accepting a tradeoff a "success" and testing the equality of the means from a binomial distribution, $p = 2.2 * 10^{-16}$

of 10.38%. One possible explanation for the difference between the choice and matching task is that the instructions for the matching task reminded people of their values by giving them the option of saying that tradeoffs would never be acceptable (see Figure 2). This is equivalent to simply rejecting all tradeoffs, but subjects may not have made that connection in the choice task.

Figure 3 shows the mean proportion of subjects with and without PVs that changed their apparent values for each scenario. A subject without a PV changes his apparent values when he says an action would be acceptable, but then refuses to do the matching task or accept any tradeoffs in the choice task 3. Subjects with PVs are more likely to act in ways that contradict their initial judgments than subjects who initially say that tradeoffs would be justified. This reversal in apparent values supports the claim of Baron and Leshner (2000) that PVs are unreflective over-generalizations of moral prohibitions.

Changes in Apparent Values After Scenarios

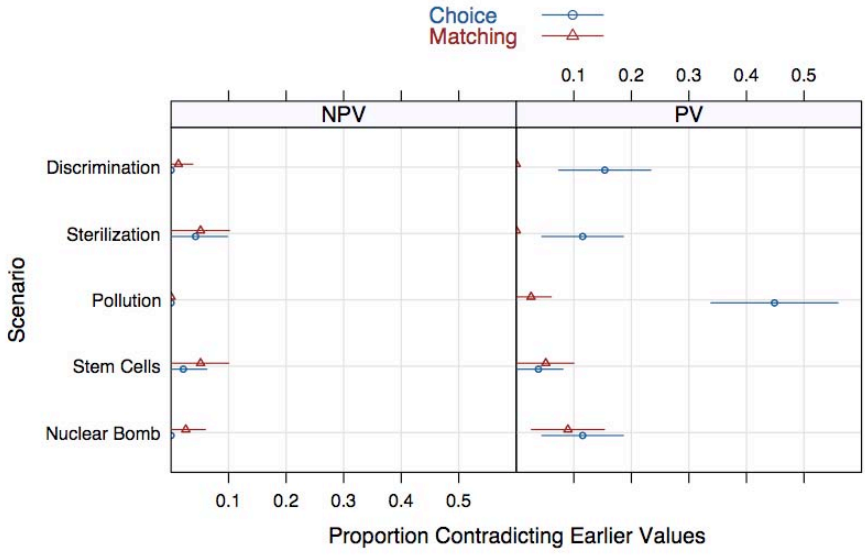

Figure 3: The PV condition includes sub jects who responded that tradeoffs would never be acceptable (U1 in Table 1) for the scenario on the y-axis, and the NPV condition includes subjects who said the actions

would be acceptable either always, when the benefits are great enough, or when the action prevents more of the same (A1-A3 in Table 1). Points represent the mean proportion of sub jects whose answers contradicted the statements they endorsed broken down by task. The lines are 95% confidence intervals. The difference in the mean proportions across all scenarios and tasks between the PV and NPV groups is significant at the 1% level ($p = 5.447 \times 10–13$).

2.2.2) Range Effects

Subjects with protected values were less sensitive to stimulus range. Normatively, the amount of y needed to compensate for a loss of x should be increasing in x so that the function representing the marginal rate of substitution is positive. If x is species extinctions and y is dollars, and one believes that biodiversity is of positive value, then a loss of 5 species should require greater compensation than a loss of 1 species. Figure 4 shows this in graphical terms for a hypothetical, linear indifference curve. The matching task revealed three points along the indifference curve by asking subjects to enter the amount of y needed to compensate for a loss of x (where x increased for each of the three points). Thus, the ratio of each subject's last response to the first response should be larger in the large stimulus range condition because there was a larger increase in the bad (lives lost, species extinctions, cases of discrimination not prosecuted, etc.).

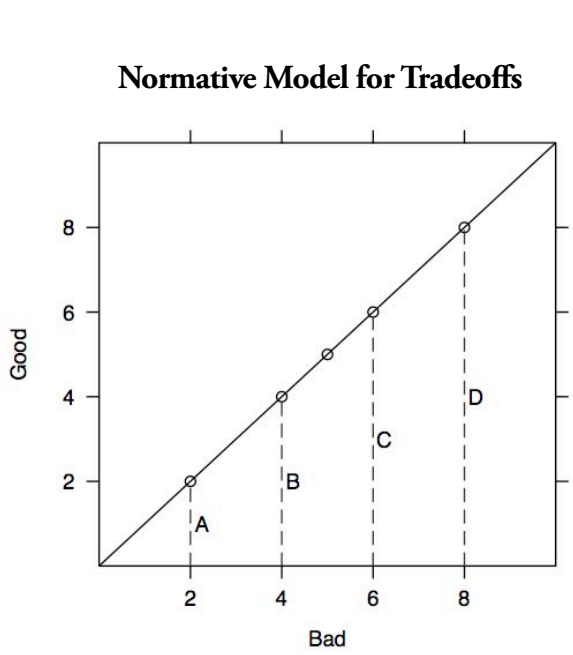

Figure 4: If the rate of substitution between two goods is greater than 0, then the indifference curve is monotonic and the ratio of D to A should be larger than the ratio of C to B. Unlike sub jects with NPVs, sub jects with PVs do not make this adjustment.

The results of a mixed model regression using protected values and the range condition to predict the ratio of two values on the indifference curve are shown in Table 3. This analysis only includes subjects who completed the tasks since the ratio of responses is not meaningful for subjects who said tradeoffs would never be acceptable. P-values are not reported since a meaningful calculation of the degrees of freedom is not possible for mixed effects models, and the distribution of the parameter estimates does not converge to a normal distribution[90]. Normatively, the coefficient on the large range condition should be positive since a larger stimulus range should result in a larger ratio. This is what was found. The positive coefficient on having a protected value is expected and indicates that

90. R.H. Baayen, D.J. Davidson, and D.M. Bates. Mixed-effects modeling with crossed random effects. *Journal of Memory and Language*, in press, 2008.

subjects with protected values thought more compensation should be needed for a loss in a protected good than subjects without protected values. If subjects with protected values that made some tradeoff adjust to range in the same way as subjects without protected values, then there should not be a significant interaction between protected values and range. The interaction between stimulus range and having a protected value, however, is significant. This shows that subjects with PVs do not adjust for the change in stimulus range. This effect can be seen in Figure 5, which shows the density distribution of ratios for all scenarios for subjects with and without PVs. In the case of subjects without protected values (NPV), the peak of the distribution changes between the small and large range conditions, but there is only a minor change in the distribution for subjects with protected values (PV).

Range Effects and Protected Values

Linear mixed model fit by REML			
Random Effects:			
Groups	Name	Variance	Std. Dev.
Subject	(Intercept)	7.1789×10^{-21}	8.4728×10^{-1}
Scenario	(Intercept)	2.7723×10^{-2}	1.6650×10^{-1}
Residual		1.1855	1.0888
Number of obs: 126, groups: Sub ject, 62; Scenario, 5			
Fixed Effects:			
	Estimate	Std. Error	t value
(Intercept)	0.6095	0.1588	3.837
PVtrue	2.0894	0.6527	3.201
LargeRange	1.0148	0.2038	4.980
PVtrue:LargeRange	-2.8954	0.7828	-3.669
Correlation of Fixed Effects:			
	(Intr)	PVtrue	LargeRange
PVtrue	-0.180		
LargeRange	-0.580	0.147	
PVtrue:LargeRange	0.159	-0.826	-0.265

Table 3: Effects of protected values and range on tradeoffs in the matching task. The analysis only includes

sub jects that completed the task since ratios are not meaningful for subjects with protected values who said tradeoffs would never be acceptable.

Subjects with Protected Values do not Adjust for Range

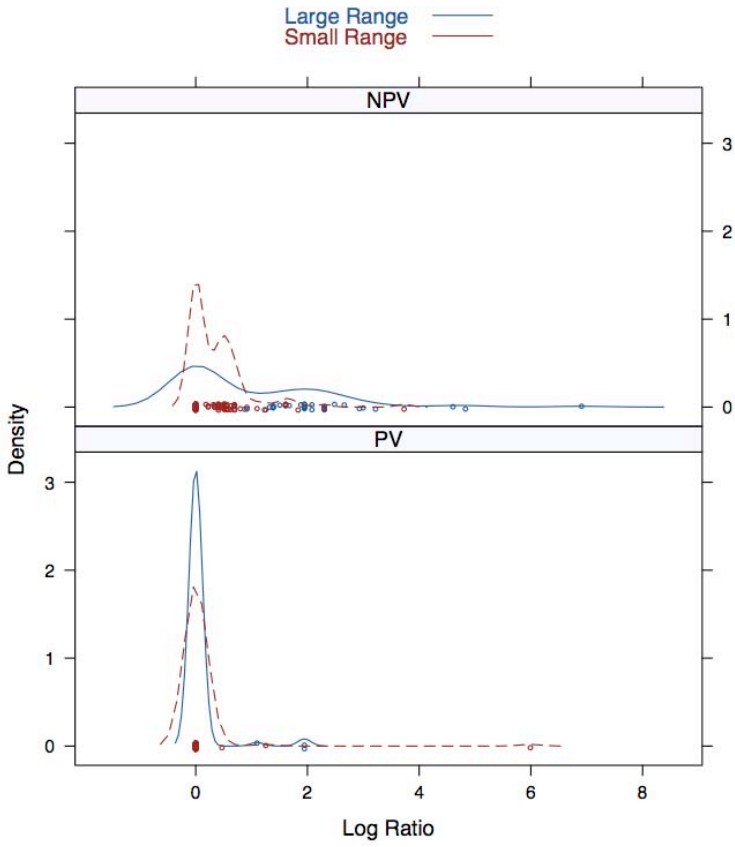

Figure 5: Subjects with PVs do not make the same adjustment for range as subjects with NPVs. Normatively the distribution should shift to the right for the large range condition so that a larger stimulus range implies a larger ratio. The curve is a density graph created using a gaussian kernel.

2.2.3) Anchoring

Subjects who did the choice task first, and were therefore presented with the default values for tradeoffs, did not provide answers in the matching task that were significantly closer to the defaults than subjects who did the matching task first. Thus, there does not appear to be an anchoring effect in which the ordering of the tasks influences responses to the matching task. Table 4 shows the results of a mixed model regression using protected values and the task order to predict the magnitude of the difference between the default values for the choice task and subjects' responses to the matching task.

Anchoring and Task Order

Linear mixed model fit by REML			
Random Effects:			
Groups	Name	Variance	Std. Dev.
Subject	(Intercept)	0.0000	0.0000
Scenario	(Intercept)	6.7557×10^{-9}	8.2193×10^{-5}
Residual		16.728	4.0899
Fixed Effects:			
	Estimate	Std. Error	t value
(Intercept)	9.76171	0.56180	17.376
ChoiceTask	-0.21342	0.75694	-0.282
PVtrue	1.44205	1.91341	0.754
PVtrue:ChoiceTask	0.06818	2.51160	0.027
Correlation of Fixed Effects:			
	(Intr)	PVtrue	LargeRange
ChoiceTask	-0.742		
PVtrue	-0.294	0.218	
PVtrue:ChoiceTask	0.224	-0.301	-0.762

Table 4: Effect of task ordering on the mean difference of sub jects' responses from the default values. ChoiceTask is a dummy variable that takes a value of 1 if the sub ject did the choice task prior to the matching task. The ordering of the tasks did not affect responses to the matching task.

3) Experiment 2

The goal of experiment 2 was to investigate the determinants of decision difficulty, guilt, decision avoidance, and methods of decision making in moral choices, and their relation to protected values. Only a choice task was used and the stimuli in this experiment were amounts of money and amounts of eight goods, some of which were shown to be frequently protected in previous studies[91]. There were eight scenarios about public policy choices that entailed making tradeoffs. Subjects decided whether some amount of money justified a loss in another good (e.g., education), then answered questions about how they chose, the difficulty of the decision, guilt feelings, and their desire to delegate decision-making authority to a third party.

People with protected values are more likely to use moral rules to make decisions, which make decisions easier for them, but not for people without protected values. People with protected values anticipate that they would feel guiltier about making a tradeoff that sacrificed a non-monetary good for money. Protected values do not affect people's desire to delegate decision-making to a third party. The choices of people without protected values are not affected by decision difficulty and their certainty about making the right choice, but the choices of people with protected values are.

3.1) Method

One hundred and ten subjects completed an online questionnaire for $5. Of those one hundred and ten, ninety-six produced usable data. Due to experimenter error, forty-two of these subjects produced unusable data for two of the survey questions. 65.96% of the subjects were female, the youngest participant was 23 and the oldest was 81[92]. The mean age was 44.59 and median age was 44.

As in Experiment 1, the questionnaire first presented subjects with eight actions in random order on separate screens and asked them to indicate when the action would be

91. Baron and Leshner. How serious are expressions of protected values?

92. Sex is not a significant determinant of protected values. Comparing the number of PVs for males and females using Fisher's Exact Test for Count Data, p = .2018

acceptable by choosing a response from Table 1. The situations were (percentage with PV in parentheses):

- Deciding not to enforce laws against child labor in sweatshops (71.28%).
- Eliminating special education programs (37.23%).
- Dumping waste from a factory into a river (76.60%).
- Forcefully sterilizing women for population control (41.49%).
- Not prosecuting a business that is almost certainly discriminating against blacks and women (63.83%).
- Not inspecting food that may be contaminated with salmonella or melamine (79.79%).
- Reducing funding for foreign aid programs that fight malaria (14.90%).
- Euthanizing patients in a permanent vegetative state against the wishes of their families (29.79%).

Zero subjects had no protected values and three had protected values for all actions. The mean number of protected values for the eight cases was 4.15 and the median was 4. Subjects were then given a scenario for each action that entailed making tradeoffs between the bad, non-monetary good, (e.g., children in sweatshops, deaths from malaria) and money for a range of three values. Subjects either had a small range, which varied 25% around the midpoint or a large range, which varied 75% around the midpoint, and either the amount of money or the amount of the bad (but not both) varied between subjects. Subjects were asked to consider the tradeoffs one at a time for each of the three values and were then presented with the questions in Table 5.

3.2) Results

Section 3.2.1 shows that people with protected values tend to use moral rules for making decisions, whereas people without protected values favor cost-benefit analysis.

Section 3.2.2 shows that moral rules combined with protected values make judgments easier and that the difficulty of making a decision is decreasing in the absolute value of the difference in importance of the two dimensions of the tradeoff. Section 3.2.3 shows that people with PVs feel less guilty about not making tradeoffs and more guilty about making tradeoffs when the gain is money than people without PVs. Guilt about making a tradeoff for subjects without PVs is decreasing in the compensation from doing so, but this is not true of subjects with PVs. Section 3.2.4 shows that subjects with PVs are not less willing to delegate decision making to someone who may not share their values but that decision difficulty is related to decision aversion.

3.2.1) Methods of Decision Making

Subjects with protected values are more likely to use moral rules when making decisions about tradeoffs than subjects without protected values. Subjects without PVs are more likely to use cost-benefit analysis. A test of the equality of the proportions of subjects with and without PVs who endorsed the use of moral rules for decision making across all scenarios found a significant difference at the 1% level ($p < 2.2e\text{-}16$). This was also true comparing the proportions of subjects with and without PVs who used cost-benefit analysis across all scenarios ($p < 2.2e\text{-}16$). Figure 6 shows the methods of decision making that subjects with and without PVs endorsed broken down by scenario (these are the responses to Q6 in Table 5).

Experiment 2 Questionnaire

Q1 Is the above tradeoff acceptable?

- Yes
- No
- Indifferent

Q2 How difficult is it to compare the two alternatives (**Expected Deaths of Children** and **Money Saved**)?

Q3 How sure are you that you would make the right decision?

Q4 In principle, how important is avoiding the first issue (Expected Deaths of Children)?

Q5 In principle, how important is the second issue (Money Saved)?

Q6 Which of the following best describes how you made your decision?

- I used a moral rule
- I considered the costs and benefits of the tradeoff
- I used my intuition
- I chose randomly
- None of the above

Q7 How guilty would you feel making this tradeoff knowing that **75, 000 children would be expected to die from malaria**?

Q8 How guilty would you feel about *not making the tradeoff* knowing that the **$3, 600, 000** would have benefitted people either directly or by being spent on other programs?

Q9 To what extent would you prefer that someone who may or may not share your values make the decision instead of you?

Table 5: The questions for each scenario, using "Reducing funding for foreign aid programs that fight malaria" as an example. Q7-Q9 were measured on a five-point scale, Q2-Q5 were measured on a seven-point scale and based on Experiment 7 in Beattie (1988). The boldfaced text changed between scenarios and/or with the range of values presented.

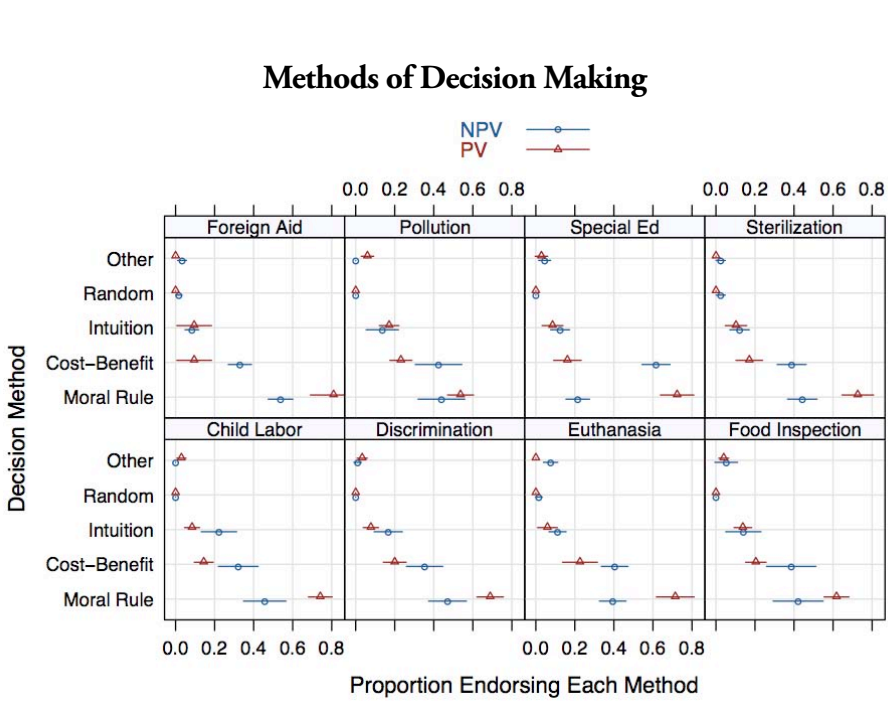

Figure 6: Subjects with PVs are more likely to use moral rules when making decisions. Subjects without PVs are more likely to endorse the use of cost-benefit analysis. The two groups do not differ significantly in their use of other methods. Points are the proportion endorsing each method and the lines represent 95% confidence intervals.

3.2.2) Decision Difficulty

Moral rules make decisions easier for people with protected values. This finding is expected since it should be easier to apply rules to make decisions than to evaluate the specifics of each tradeoff. Subjects without protected values, however, do not appear to benefit from the use of moral rules. Beattie (1988) found that whether a decision was considered to be a moral choice was a significant predictor of difficulty but that the direction of the effect varied between subjects. She hypothesized that "perhaps moral decisions are easy for some subjects because they have developed rules for dealing with them; while moral decisions represent true dilemmas for other subjects." A possible explanation of Beattie's

(1988) finding is that moral decisions are less problematic for people with protected values whereas moral choices are dilemmas for people without protected values.

Decisions are easier when one dimension of the tradeoff is considered more important than the other. To test this hypothesis I constructed two composite variables from the importance ratings (Q4 and Q5 in Table 5): the first being the absolute value of the difference in the importance ratings (absDiffImportance) and the second being the product of the ratings (MultipliedImportance). People find it more difficult to evaluate whether a tradeoff is acceptable when the two dimensions are close in their level of importance (absDiffImportance is small). Note that the combined level of importance has less of an effect than the relative importance. This can be seen in Table 6 from the fact that the coefficient on the product of the importance ratings (MultipliedImportance) is smaller than the coefficient on the absolute value of the difference in those ratings (absDiffImportance). Thus, a tradeoff in which one cares little about both dimensions (MultipliedImportance is small) might still be difficult if the two are close in importance (absDiffImportance is small). This result is also consistent with the finding of Beattie (1988) that "difficult decisions do not always involve alternatives that one cares deeply about."

Table 6 shows the results of a mixed effects model using subjects' ratings of importance of the dimensions of the tradeoff, protected values, and the use of moral rules as determinants of mean decision difficulty. Subjects rated the difficulty of the tradeoffs using a seven-point scale and provided three ratings for each scenario because each scenario had three different levels for one dimension of the tradeoff. These self reported ratings of decision difficulty are significant predictors of the log time it took subjects to decide whether the tradeoff was acceptable which lends credibility to the measure.

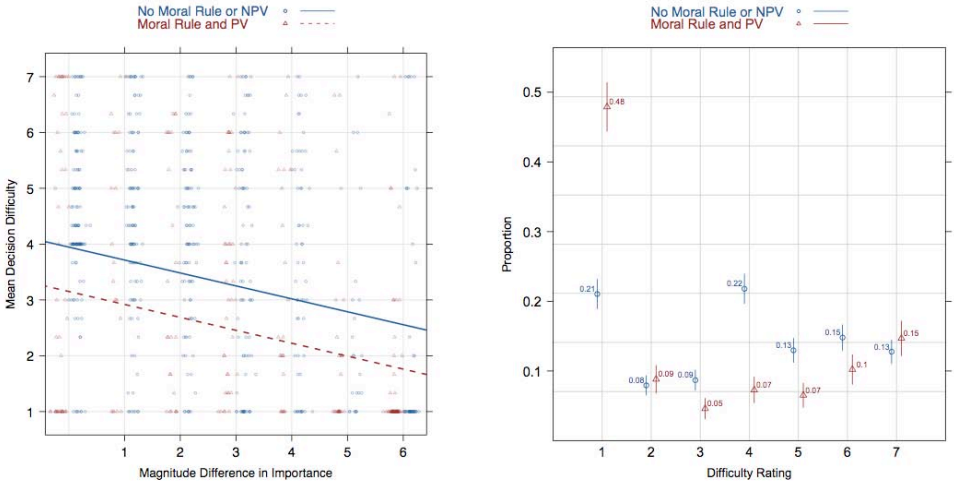

Figure 6: Subjects with PVs that use moral rules find decisions easier than subjects who either do not have a PV or do not use rules.

(a) The points on the graph have been jittered along the x-axis to make the number of points easier to see. Each point is the difference in importance and the mean difficulty of the scenario for that subject (each subject has three difficulty ratings per scenario, one for each value in the range).

(b) A dot-plot showing the proportion of each difficulty rating for subjects with moral rules and PVs versus those without both. Lines are 95% confidence intervals.

Decision Difficulty

Linear mixed model fit by REML						
Random Effects:						
Groups		Name	Variance	Std. Dev.		
Subject		(Intercept)	1.369294	1.1702		
Scenario		(Intercept)	0.047786	0.2186		
Residual			1.990471	1.4108		
Number of obs: 752, groups: Subject, 94; Scenario, 8						
Fixed Effects:						
			Estimate	Std. Error	t value	
(Intercept)			3.826540	0.298811	12.806	
absDiffImportance			-0.181114	0.042777	-4.234	
MultipliedImportance			0.025524	0.007075	3.608	
PVtrue			0.168829	0.169742	0.995	
MoralRuleTrue			-0.122815	0.180984	-0.679	
Badvaries			-0.237132	0.271815	-0.872	
MoralRuleTrue:PVtrue			-0.785795	0.236225	-3.326	
Correlation of Fixed Effects:						
	(Intr)	absDImp	MltImp	PVtrue	MRtrue	Badvar
absDImp	-0.603					
MultImport	-0.704	0.636				
PVtrue	-0.161	-0.077	-0.078			
MRuletrue	-0.029	-0.291	-0.183	0.346		
Badvar	-0.374	0.041	0.053	-0.006	-0.012	
MRtr:PVtr	0.107	0.027	0.048	-0.662	-0.660	-0.004

Table 6: Decision difficulty as a function of importance, protected values, and moral rules. Notice that the product of the importance ratings (MultipliedImportance) has less of an effect than the relative importance (absDiffImportance). Difficult decisions are not necessarily those in which both dimensions are of high importance. MoralRuleTrue is a dummy variable valued at 1 if the sub ject used a moral rule to make her decision. PVtrue is a dummy variable valued at 1 if the sub ject had a

PV for the scenario. Badvaries is a dummy variable valued at 1 if the non-monetary good (e.g., child labor, pollution, deaths) — as opposed to money — varied between scenarios. The insignificance of the Badvaries coefficient suggests that it does not matter which dimension of the tradeoff varies between cases.

3.2.3) Guilt and Decision Making

Subjects with protected values and subjects that made choices using moral rules say they would feel guiltier about making tradeoffs that entailed a loss in a protected good than those without protected values. Furthermore, the more important subjects rated the lost good, the more anticipated guilt they had about making tradeoffs. These results are presented in Figure 9 and Table 7.

The guilt levels of subjects with protected values are insensitive to the gain from making a tradeoff. Subjects without protected values feel slightly less guilty about making tradeoffs as compensation from doing so increases, but this is not the case for subjects with protected values. Guilt is decreasing in the importance of money, meaning that compensation does more to alleviate guilt about tradeoffs when money is of high importance. These results are presented in Table 8.

Guilt and Importance of Non-Monetary Good

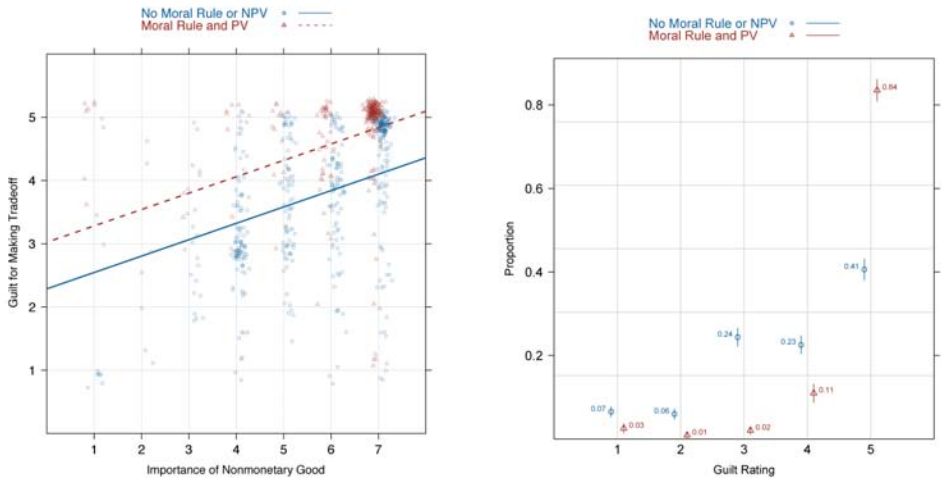

Figure 8: Subjects with PVs that used moral rules to make decisions have higher levels of anticipated guilt about a loss of the non-monetary (protected) good. There are separate, signicant level eects for both PVs and moral rules. These eects are given in Table 7.

(a) The points on the graph have been jittered along both axes to make the number of points easier to see. Points represent mean guilt and the importance of the nonmonetary good for each subject.

(b) A dot-plot showing the proportion of each guilt rating for subjects with moral rules and PVs versus those without both. Lines are 95% condence intervals.

Guilt Due to Loss of Non-Monetary Good

Linear mixed model fit by REML					
Random Effects:					
Groups		Name	Variance	Std. Dev.	
Subject		(Intercept)	0.339654	0.582798	
Scenario		(Intercept)	0.007352	0.085744	
Residual			0.470500	0.685930	
Number of obs: 752, groups: Subject, 94; Scenario, 8					
Fixed Effects:					
			Estimate	Std. Error	t value
(Intercept)			2.54978	0.15400	16.557
PVGoodImportance			0.22302	0.02288	9.749
PVtrue			0.24644	0.08199	3.006
MoralRuleTrue			0.40394	0.08884	4.547
Badvaries			-0.08665	0.13499	-0.642
PVTr:MRTr			0.04205	0.11473	0.367
Correlation of Fixed Effects:					
	(Intr)	PVGImp	PVtr	MRtr	Badvar
PVGImport	-0.773				
PVtrue	-0.118	0.116			
MrlRlTrue	0.061	-0.324	0.359		
Badvar	-0.374	0.066	-0.009	-0.022	
PVTr:MRTr	0.091	0.052	-0.666	-0.661	-0.003

Table 7: Subjects with protected values and those who use moral rules have higher levels of guilt about making tradeos in which there is a loss in a protected good. Guilt is increasing in the rated importance of the non-monetary good for each scenario (PVGoodImportance, Q4 in Table 5).

Linear mixed model fit by REML							
Random Effects:							
Groups		Name	Variance			Std. Dev.	
Subject		(Intr)	0.3581562			0.59846	
Scenario		(Intr)	0.0055146			0.07426	
Residual			0.5031511			0.70933	
Number of obs: 1416, groups: Subject, 59; Scenario, 8							
Fixed Effects:							
			Estimate			Std. Error	t value
(Intercept)			2.732998			0.170065	16.070
MoneyGain			-0.099499			0.033012	-3.014
PVtrue			0.004271			0.114752	0.037
MoralRuleTrue			0.338577			0.066175	5.116
PVImportance			0.272911			0.018929	14.417
MoneyImportance			-0.056768			0.015152	-3.747
MoneyGain:PVTrue			0.099747			0.046211	2.159
PVTrue:MoralRuleTrue			-0.026622			0.088174	-0.302
Correlation of Fixed Effects:							
	(Intr)	MnyGn	PVtr	MoralRt	PVImp	MImport	MyG:PVt
MoneyGn	-0.389						
PVTrue	-0.273	0.581					
MoralRtrue	-0.052	0.026	0.217				
PVImport	-0.636	-0.007	-0.056	-0.266			
MImport	-0.472	0.003	-0.011	0.129	0.133		
MGn:PVtr	0.279	-0.714	-0.819	-0.013	-0.002	0.004	
PVtr:MRtr	0.057	-0.016	-609	-0.609	0.032	0.062	0.033

Table 8: The guilt from making a tradeoff that entails an increase in a bad (e.g., child labor, pollution, discrimination) is decreasing in the amount of compensation (MoneyGain) from making the tradeoff for sub jects without protected values. This is not the case, however, for sub jects with protected values (see the MoneyGain:PVTrue interaction). Thus, people with protected values do not appear to feel better about tradeoffs as the benefits of the tradeoffs increase.

3.2.4) Decision Aversion

Previous studies[93] found that people are less likely to make choices when the tradeoff is perceived as difficult. In this study, accepting a tradeoff is a change from the status-quo. Subjects with protected values are less likely to say that a tradeoff is acceptable if they think the choice is difficult or they are unsure about their ability to make the right decision. The behavior of people without protected values is consistent with decision theory: their willingness to accept tradeoffs was not influenced by the perceived difficulty of the decision. These effects, however, were small in comparison to the effect that moral rules had on choice. The results of a mixed effects probit regression using ratings of difficulty, certainty, protected values, and moral rules to predict the acceptance of tradeoffs is shown in Table 9.

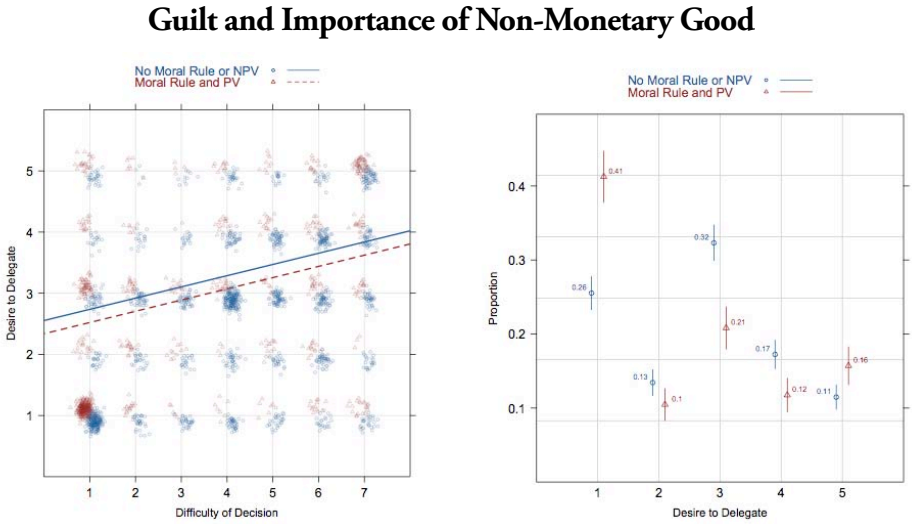

Figure 9: Desire to delegate decision making is increasing in the difficulty of the decision, but is not significantly affected by protected values or moral rules.

(a) The points on the graph have been jittered along both axes to make the number of points easier to see. Points represent a single guilt and difficulty rating.

(b) A dot-plot showing the proportion of each rating for sub jects with moral rules and PVs versus those

93. Kimberly M. Sawers. Evidence of choice avoidance in capital-investment judgments. *Contemporary Accounting Research*, 22(4):1063–1092, 2005.; Tversky and Shafir. Choice under conflict: The dynamics of deferred decision.

without both. Lines are 95% confidence intervals.

Subjects were asked how much they would prefer someone else, who may or may not share their values, make the decision (Q9 in Table 5). Protected values did not affect desire to delegate. The desire to delegate decision making authority to a third party is increasing in the perceived difficulty of the decision (Q2 in Table 5) and decreasing in the level of certainty (Q3 in Table 5) about making the right choice. This finding is consistent with previous research on decision avoidance which has found that people are less likely to make choices when the tradeoff is perceived as difficult[94]. The use of moral rules appears to reduce desire to delegate, though this effect is only significant at the 10% level. Believing that a tradeoff is a moral choice may make people less willing to delegate decision-making because there is a risk that the delegate will not share and honor the values of the principal.

94. Sawers. Evidence of choice avoidance in capital-investment judgments.; Tversky and Shafir. Choice under conflict: The dynamics of deferred decision.

Choice, Difficulty, Certainty and Protected Values

Linear mixed model fit by REML							
Random Effects:							
Groups		Name		Variance		Std. Dev.	
Subject		(Intr)		1.04874		1.02408	
Scenario		(Intr)		0.19779		0.44474	
Number of obs: 2256, groups: Subject, 94; Scenario, 8							
Fixed Effects:							
				Estimate	Std. Error	z value	Pr(> |z|)
(Intercept)				-0.30340	0.34523	-0.879	0.3795
Difficulty				-0.04028	0.03318	-1.214	0.2248
PVtrue				0.68600	0.48337	1.419	0.1558
Certainty				-0.01233	0.04177	-0.295	0.7678
MoralRuleTrue				-1.81230	0.15354	-11.803	$<2 \times 10^{-16}$
PVtrue:Difficulty				-0.10221	0.05863	-1.743	0.0813
PVtrue:Certainty				-0.12985	0.06624	-1.960	0.0500
PVTrue:MoralRuleTrue				-0.52079	0.27274	-1.909	0.0562
Correlation of Fixed Effects:							
	(Intr)	Difficulty	PVtr	Crtnty	MrlRtr	Dff:PVtr	Crtn:PVt
MoneyGn	-0.614						
PVTrue	-0.403	0.366					
MoralRtrue	-0.722	0.398	0.410				
PVImport	0.030	-0.018	-0.032	-0.202			
MImport	0.272	-0.468	-0.804	-0.164	0.022		
MGn:PVtr	0.374	-0.215	-0.853	-0.527	0.125	0.478	
PVtr:MRtr	-0.044	0.039	-0.110	0.141	-0.469	0.155	-0.124

Table 9: Results of a mixed effect probit regression using ratings of difficulty, certainty, protected values, and moral rules to predict the acceptance of tradeoffs. Decision theory says choices should depend on outcomes and not the difficulty of the decision. People with protected values, however, appear to be influenced by factors such as certainty and difficulty. The interaction between protected values and difficulty is significant at the 10% level and the interaction between protected values and certainty is significant at the 5% level.

Decision Aversion

Linear mixed model fit by REML								
Random Effects:								
Groups		Name		Varance			Std. Dev.	
Subject		(Intercept)		0.7729096			0.879153	
Scenario		(Intercept)		0.0039482			0.062835	
Residual				0.8043268			0.896843	
Number of obs: 2256, groups: Subject, 94; Scenario, 8								
Fixed Effects:								
				Estimate			Std. Err	t value
(Intercept)				2.468145			0.182088	13.555
Difficulty				0.183336			0.013026	14.075
MultipliedImportance				0.004498			0.002156	2.087
Certainty				-0.101702			0.016596	-6.128
MoralRuleTrue				-0.108989			0.063781	-1.709
PVtrue				-0.066546			0.074413	-0.894
LargeRange				0.176465			0.190709	0.925
MoralRuleTrue:PVTrue				-0.058823			0.088063	-0.668
LargeRange:PVTrue				0.036960			0.085209	0.434
Correlation of Fixed Effects:								
	(Intr)	Dffclt	MImp	Crtnty	MrlRtr	PVtr	Rng	MRtr:PVtr
Difficulty	-0.418							
MltImp	-0.240	-0.195						
Certainty	-0.574	0.435	0.048					
MRlTrue	-0.052	0.002	-0.030	-0.161				
PVTr	-0.159	-0.008	-0.012	-0.001	0.278			
Range	-0.498	-0.022	0.030	-0.012	-0.032	0.104		
MRtr:PVtr	0.062	0.049	0.057	-0.015	-0.633	-0.578	0.018	
Rng:PVtr	00111	0.014	0.001	0.001	0.073	-0.454	-0.233	-0.114

Table 10: Results of a mixed effect regression using ratings of difficulty, certainty, protected values, and moral rules to predict desire to delegate decision-making authority to an unspecified third party. Protected values are not significantly related to a desire to delegate

4) Conclusion

Experiment 1 focused on the implications of protected values for valuation measures. The amount of a good (e.g., money) needed to compensate for an increase in a bad (e.g., pollution) ought to be increasing in the magnitude of the increase in the bad. For example, the greater the amount of pollution, the more compensation people should need to be left indifferent. People without protected values behave in a manner consistent with this reasoning, but people with protected values who agree to tradeoffs are insensitive to stimulus range. They do not adequately increase the amount of compensation needed for an increase in a bad. This suggests that matching tasks which ask people what is needed to compensate for a loss may not be able to reflect the preferences of people with protected values. Consistent with previous work on protected values[1], people with PVs may not always realize the implications of their preferences until presented with examples of potential conflicts and tradeoffs. People without protected values do not reverse their preferences when presented with tradeoffs. As can be seen in Figure 3, the percentage of subjects without PVs who appeared to reverse their preferences was not significantly different from zero for any scenario. Thus, protected values appear to be unreflective.

Experiment 2 focused on protected values and their relationship to tradeoff difficulty, guilt, decision aversion, and the use of moral rules. People with protected values are more likely to use rules to make decisions and decisions are easier for people with protected values who use rules. This is presumably because it it easier to apply rules to solve decision problems than to evaluate the costs and benefits of each tradeoff. Thus, moral and ethical decisions do not necessarily imply a high level of conflict. Decisions are harder when two attributes in the tradeoff are close in importance. Judgments of decision difficulty do not increase substantially in the combined importance of the two dimensions, which implies that difficult decisions are not always those we care deeply about. People with protected values anticipate feeling guiltier about making tradeoffs that require them to sacrifice a protected good. This suggests that protected values are strong opinions, and that the holders

1. Baron and Leshner. How serious are expressions of protected values?

of protected values feel differently about the goods they want to protect from tradeoffs. The willingness of many subjects with protected values to make tradeoffs in experiment 1, however, supports earlier research[2] which concluded that protected values are frequently unreflective and overgeneralized. Protected values do not affect people's desire to delegate decision making to a third party. This result did not support my hypothesis that people with protected values would be less willing to delegate because delegation involves a risk of a loss in a protected good due to the chance that the delegate will not honor the values of the principal. Consistent with previous research[3], decision avoidance is increasing in decision difficulty.

Although people with protected values are more likely to use moral rules, the two are not perfectly correlated. As Table 6 shows, some subjects with PVs endorsed cost-benefit analysis and some subjects without PVs endorsed the use of moral rules. Future research could focus on the link between values and methods of decision making. Under what circumstances do people switch methods, and how do they explain their choices? The most effective valuation measure for a tradeoff may depend on the methods of decision making that people are likely to use.

Like previous studies on protected values, I focused on moral issues. Protected values, however, may also affect tradeoffs that people would not describe as moral dilemmas, such as preferences for different economic systems. Another outstanding question is how protected values change over time, and whether values tend to go only from protected to unprotected. Evidence from this study suggests that unprotected values do not become protected by con- sidering tradeoffs. 79.79% of subjects in this study had a protected value for not inspecting food that may be contaminated with salmonella or melamine. This percentage, however, may be sensitive to recent reports of contamination. If PVs are highly sensitive to current events then they should not be thought of as deeply held values and beliefs, as this

2. Baron and Leshner. How serious are expressions of protected values?
3. Sawers. Evidence of choice avoidance in capital-investment judgments.; Tversky and Shafir. Choice under conflict: The dynamics of deferred decision.

study and others[4] already suggest. Future research could also examine how emotions affect the expression of PVs. This study investigated how PVs affect guilt feelings, but not how emotions such as anger may influence PVs.

Protected values should be challenged during the preference elicitation process because they are often unreflective. People's values must be challenged repeatedly in order to get a reliable measure of their seriousness. Using matching tasks to measure rates of substitution is probably less successful than using choice tasks, which result in people more readily agreeing to tradeoffs. Caution is necessary, however, because many PVs became unprotected only for the choice task, which raises the question of what these subjects' true preferences were. The issue of protected values should not be dodged when determining rates of substitution just to avoid the challenges of dealing with inconsistent and extreme views because valuation measures should try to be both accurate and precise.

5) Scenario Text

5.1) Experiment 1

Dropping a nuclear bomb on a civilian population. The nuclear bombings of Hiroshima and Nagasaki during World War II raised the moral issue of whether it is acceptable to drop a nuclear bomb on a civilian population in order to stop a war that would likely cause a large number of fatalities. Imagine that your country is involved in a prolonged and bloody conflict. You are faced with the decision of whether to drop a nuclear bomb that would kill civilians but prevent the death of your country's soldiers.

Destroying human embryos. Suppose that cloning technology and human stem cells could be used to grow organs in chimpanzees that would then be used for transplants in humans. The project would entail the destruction of fertilized embryos but could also save lives.

Polluting a river. A factory has been dumping waste into a nearby river, which if continued

4. Baron and Leshner. How serious are expressions of protected values?

will result in the extinction of rare plant and animal species found nowhere else. The factory could be forced to install cleaner dumping technology that would prevent the extinctions but would need to eliminate jobs in order to pay for the improvements to the plant.

Forced sterilization for population control. Developing countries have high birth rates. This makes it difficult for these countries to raise their standards of living because children do not work yet still must be provided for. Some countries, such as China, have implemented policies to limit population growth, resulting in higher per capita incomes (how much on average a person makes in a year) for the poor and a strengthening economy. One guaranteed way to decrease birth rates is to forcefully sterilize women after they have one child. This policy is controversial.

Discriminating on the basis of race or gender. Employment discrimination against blacks and women harms these groups and society as a whole. Imagine that the Justice Department has recently announced it will not prosecute some companies that are almost certainly discriminating on the basis of race and gender in order to save money.

5.2) Experiment 2

Child labor in sweatshops. The government must spend money on enforcement in order for laws against sweatshops that use child labor to be effective. If less money is spent on enforcement, it becomes less likely that people who violate the law will be caught and punished. This means that employers will have a greater incentive to hire children illegally. Thus, cutting funding for enforcement will save money but result in an increase in the number of children employed in sweatshops. Imagine that you are responsible for making budget decisions but did not have to change your personal values in order to be given this job.

Special education. Imagine that the department of education in your state is facing a tight budget because of an unexpected increase in students and the poor economy. The department wants to ensure that resources are used as efficiently as possible. You are responsible for making budget decisions but did not have to change your personal values in order to be given this job. The cuts will significantly reduce the quality of education for students with special needs.

Polluting a river. A factory has been dumping waste into a nearby river, which if continued will result in the extinction of rare plant and animal species found nowhere else. The factory could be forced to install cleaner dumping technology that would prevent the extinctions but would need to temporarily close in order to make improvements to the plant. This would result in a loss of income for both workers and the business owners. The alternative is to preserve the jobs at the plant and allow the species extinctions.

Forced sterilization for population control. Developing countries have high birth rates that make it difficult to raise the standard of living because children do not work but must be provided for. Some countries, such as China, have implemented policies to limit population growth. These policies have resulted in higher per capita incomes (the average amount of money a person makes in a year) for the poor and a stronger economy. One guaranteed way to decrease birth rates is to forcefully sterilize women after they have one child. Imagine that GDP per capita is currently $2,000 and you are faced with the following trade of.

Discriminating on the basis of race or gender. Employment discrimination against blacks and women limits the job opportunities and salaries of these groups. Imagine that the Justice De- partment has recently announced it will not prosecute some companies that are almost certainly discriminating on the basis of race and gender in order to save money. Imagine

that you are responsible for budget decisions but are not expected to change your personal values as a result of being assigned this job.

Food inspections. The Food and Drug Administration (FDA) is the government agency responsible for ensuring the accurate labelling and safety of all non-meat and non-alcoholic food products in the United States. The FDA's 2009 budget for monitoring food safety is $662,000,000. The more money that is spent on food inspections, the less likely it is that people will die of food-borne illnesses such as salmonella or melamine contamination. Imagine that you are responsible for budget decisions but are not expected to change your personal values as a result of being given this job. You must consider the below tradeoffs between saving money and some increase in the number of expected deaths from contaminated food.

Anti-malaria programs. The President's Malaria Initiative is a five-year foreign aid program to fight malaria in 15 African countries. In sub-Saharan Africa, at least 1 million children under the age of 5 die each year from malaria. Imagine that you are responsible for budget decisions related to this program but are not expected to change your personal values as a result of having this job. You must consider the following tradeoffs between saving money and some increase in the number of deaths from malaria.

Euthanasia for people in a permanent vegetative state. Patients is a permanent vegetative state (PVS) have almost no chance of ever regaining consciousness. They have no high level brain functioning but can move their eyes, exhibit sleep/wake cycles, and do not require extensive life support equipment. Nevertheless they are expensive to keep alive. One way to reduce high health care costs would be to refuse treatment to these patients even when their families request it and instead euthanize them painlessly. Imagine that you are responsible for evaluating policies to reduce health care expenditures but did not have to change your personal values to take this job. For the purpose of this scenario assume that these patients

have absolutely no chance of recovery. Consider the following tradeoffs between euthanizing patients against the wishes of their families and saving money.