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Are Morally-Motivated Decision Makers Insensitive to the Consequences of their Choices?

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Abstract

Is morally motivated decision making different from others kinds of decision making? There is evidence that when people have sacred or protected values (PVs) they reject tradeoffs for secular values (e.g.” You can’t put a price on a human life.”) and tend to employ deontological rather than consequentialist decision principles. People motivated by PVs appear to show “quantity insensitivity.” That is, in tradeoffs situations they are less sensitive to the consequences of their choices than people without PVs. The current study shows that the relationship between PVs and quantity insensitivity varies across contexts: in one design previous results are replicated; in a second, PVs are related to *increased* quantity sensitivity. These and other findings call into question important properties of PVs.

If we want to comprehend people's commonplace and extraordinary actions, we must understand the values that inspire them. "Extreme" actions (e.g., selfless heroism, suicide terrorism) show that strong values may motivate behavior and some researchers suggest that "all attitudinal and behavioral decisions should be traceable to personal value priorities" (Rohan, 2000, p. 270). Recently, researchers have begun to examine morally motivated decision making, and it appears to have a number of distinctive properties.

Our focus is on decisions involving protected values (PVs). The PV framework developed by Baron and colleagues (Baron & Spranca, 1997) argues that for problems entailing the exchange of a cherished resource (a PV), people tend to reason differently (deontologically) than when reasoning about resources not tied to one's moral values (consequentially). Deontological reasoning is focused on means—some acts are wrong in themselves, and are morally unacceptable means to any ends (Davis, 1993). In contrast, consequentialist reasoning is focused on outcomes; means are irrelevant—whatever values are adopted, this perspective mandates bringing about the best outcomes (Pettit, 1993). Contemporary ethics treats deontology and consequentialism as distinct modes of ethical reasoning.

PVs are thought to be associated with deontological rules—rules that concern actions, like "do no harm"(Baron, 1996), but not the overall consequences of those actions. This gives rise to a number of testable properties of PVs. First, by definition, PVs are associated with tradeoff avoidance. For example, when offered a secular value (something that can be purchased or sold) in exchange for a PV [e.g., auctioning body parts, or selling futures that bet on the likelihood of acts of terrorism; (Medin *et al.*, 1999; Tetlock, 2002)], people refuse tradeoffs on moral grounds (Tetlock *et al.*, 2000).

Two further properties of PVs are "omission bias" and "quantity insensitivity" (Baron & Spranca, 1997). Omission bias is a preference for indirect harm caused by omissions (i.e., failure to act) over equal or lesser harm caused by acts (Spranca *et al.*, 1991). Baron and his colleagues have amassed evidence that PVs are associated with a large omission bias (Baron & Greene, 1996; Baron & Leshner, 2000; Ritov & Baron, 1990, 1999). Consider the following item from Ritov and Baron (1999):

As a result of a dam on a river, 20 species of fish are threatened with extinction. By opening the dam for a month each year, you can save these species, but 2 species downstream will become extinct because of the changing water level.

Would you open the dam? Y/N

*What is the largest number of species made extinct by the opening at which you would open the dam?*_____

In this situation, some participants would not open the dam, saying that they would not want to cause the loss of a single species (even though not opening the dam leads to the loss of all 20 species)—this response is called a "zero threshold". The value participants supply to the probe is divided by the risk associated with omission (in this case, 20), yielding an index ranging from zero to one. The smaller this "threshold value", the less quantity sensitive a participant is judged to be. Lower thresholds are interpreted as reflecting relative insensitivity to the consequences of one's choice.

Later, participants are presented with statements concerning the acceptability of tradeoffs for some value (e.g., fish species). This probe assesses whether participants hold a PV for this resource, as below:

Causing the extinction of fish species.

a) I do not object to this.

b) This is acceptable if it leads to some sort of benefits (money or something else) that are great enough.

c) This is not acceptable no matter how great the benefits.

This dichotomous measure classifies participants who endorse "C" as having a PV for that resource (Baron & Spranca, 1997). Participants with PVs provide lower threshold values than participants without PVs, indicating less sensitivity to quantity (Ritov & Baron, 1999).

PVs are an important construct in the study of decision making because this field has adopted utility theory (Savage, 1954; von Neumann & Morgenstern, 1947) as a normative model and adopted consequentialist theories as descriptive models (Kahneman & Tversky, 1979; Tversky & Kahneman,

1992). These theories assume quantity sensitivity: more of a good thing is preferable to less of a good thing, ceteris paribus. The properties of PVs discussed so far may violate the assumptions of quantity sensitivity associated with consequentialism.

An alternative paradigm (adapted from Connolly and Reb, 2003)

Recently, Connolly and Reb (2003) examined the effects of modest changes to the omission bias paradigm. In their Study 2, they varied the risks associated with acts and omissions in a repeated measures design. Consider an adapted version of the previous scenario:

As a result of a dam on a river, 20 species of fish are threatened with extinction. By opening the dam for a month each year, you can save these species, but some species downstream will become extinct because of the changing water level.

Would you open the dam if it would kill 2 species of fish downstream as a result? Y/N
Would you open the dam if it would kill 6 species of fish downstream as a result? Y/N
Would you open the dam if it would kill 10 species of fish downstream as a result? Y/N
Would you open the dam if it would kill 14 species of fish downstream as a result? Y/N
Would you open the dam if it would kill 18 species of fish downstream as a result? Y/N

Note that the item above gives a range of options rather than asking participants to generate a threshold. It also does not begin with an anchor. Connolly and Reb (2003) examined decisions concerning whether or not to vaccinate (the vaccine sometimes had bad side effects) and found no evidence for omission bias. Although opinions differ concerning the complexity and merits of the Ritov and Baron versus the Connolly and Reb procedure (Baron & Ritov, 2004; Connolly & Reb, 2004), we employed both methods as a means to clarify the nature of PVs and their role in decision making.

The theoretical notion guiding our studies is that PVs involve attentional processes and that the two procedures may influence attention differently. Specifically, the Ritov and Baron procedure may direct attention to the question of whether one should act. In contrast, in the Connolly and Reb procedure, participants are asked the same question at different levels of act risk, which may shift their

focus to balancing risks and consequences. An attentional bias account is compatible with conversational pragmatics (Grice, 1975): the Connolly and Reb format may be more likely to convey the presupposition that some tradeoff is expected.

Connolly and Reb (2003) did not assess PVs so it is unclear how people with PVs would respond in their paradigm. We predicted, however, that people with PVs would show less quantity sensitivity than people without PVs in the Ritov and Baron procedure but show *greater* quantity sensitivity than people without PVs in the Connolly and Reb procedure. If people who endorse PVs care more about the resource at risk (fish, in this example), one might expect even more consideration of consequences (and more quantity sensitivity) compared to people without PVs (i.e., indifferent participants should care less about the consequences entailed in the scenario).

There has been enough research on PVs and decision making to establish that this domain is theoretically and practically rich, but too little to establish generality across paradigms and social contexts. At a minimum, our study examines the generality of results across two closely related procedures. Our study assessed the relationship between PVs and quantity sensitivity for three scenarios using either a replication of Ritov and Baron's procedure, or a procedure inspired by Connolly and Reb's Study (as a between-participants factor).

In addition to examining response formats and quantity sensitivity, the current study assesses domain-general vs. domain-specific influences of PVs by collecting responses for three additional, unrelated PVs. If quantity sensitivity is predicted by endorsing many PVs, then the relationship between PVs and quantity sensitivity may reflect individual differences in generalized deontology rather than using different reasoning processes when (un)cherished resources are at risk.

Method

Participants

Seventy-four undergraduates (44 women, 30 men) participated for course credit, each completing their questionnaire at their own pace. They were tested individually but in a small group setting (typically, 1 to 4 Ps per session).

Materials & Design

After reading the instructions, participants were asked to read and respond to three scenarios—the River Diversion (given above), Starvation, and Cutting Forests items (below) from Ritov & Baron, 1999—within a packet, the order of which was randomized. The other scenarios were:

> *Starvation. A convoy of food trucks is on its way to a refugee camp during a famine in Africa. (Airplanes cannot be used.) You find that a second camp has even more refugees. If you tell the convoy to go to the second camp instead of the first, you will save 1000 people from death, but 100 people in the first camp will die as a result.*
>
> *Cutting Forests. A logging company has the rights to 1000 square miles of old-growth forest. The company is willing to trade this land for 100 square miles of similar land, now part of a national park. You can give the smaller area to the company and make the larger area into a national park. The trees and scenery in the two areas are much the same. The logging company will cut all the trees in whichever area it owns.*

Two versions of the questionnaire were constructed. Half our sample received the "RB" version, which used the items and procedure from Ritov & Baron (1999). The other half received the "CR" version (modeled after Connolly & Reb), where instead of asking for a threshold value, Ps were asked whether or not they would act if it entailed 10%, 30%, 50%, 70%, and 90% of the risk entailed by the omission.

After responding to the three scenarios, participants' PVs for six items from Baron & Spranca (1997)—three corresponding to the scenarios and three unrelated items—were assessed. The additional actions participants judged as (un)acceptable were the following: "*Selling products for profit made by strike breakers*", "*Putting people in jail for expressing nonviolent political views*", and "*Aborting normal fetuses in the last three months of pregnancy.*"

Results

For the RB procedure, each threshold value was converted to a proportion by dividing this value by the harm caused by omission. This proportion is taken to reflect quantity (in)sensitivity: the higher the value, the more sensitive to quantity (i.e., consequentialist) participants appear to be; the lower the value, the less quantity sensitivity.

For the CR procedure, quantity sensitivity was indexed as the highest level of harm caused by action each participant endorsed for each item (values ranged from 0 to .9). If a participant circled zero "Y" responses, it was coded as 0. Levels of quantity sensitivity and their relation to PVs were compared across paradigms. Additionally, since Baron notes that 0 and 0.9 thresholds may reflect strong act/omission preference, we also report analyses of these responses.

The threshold results in the RB procedure replicated Ritov & Baron (1999). Participants with PVs showed less quantity sensitivity, providing lower threshold values than participants without PVs (see Table 1). This difference is evident for each of the three items used, but reliable for only two. The analyses for the Starvation item suffer from a lack of power (because so many people had a PV for this item).

Strikingly, but as predicted, the pattern reverses in the CR condition. Participants with PVs demonstrated greater quantity sensitivity, providing higher thresholds than participants without PVs. Again, this difference was evident in each item, but not reliable for the starvation item.

A second set of analyses examined the relationship between the number of PVs endorsed (i.e., one, two, or three of the three relevant and three irrelevant items) and the average level of quantity sensitivity exhibited across all three items for each participant. Analyses for the three relevant items mirror the by-item analyses above: the more PVs a participant endorsed in the RB version, the less sensitive to quantity ($r(35) = -.57$, $p_{rep} = .99$, $\eta_p^2 = .33$); conversely, the more PVs a participant endorsed in the CR version, the *more* sensitive to quantity ($r(35) = .38$, $p_{rep} = .93$, $\eta_p^2 = .15$). Endorsement of the three irrelevant items correlates only moderately with quantity sensitivity (r's(35) = .22 and .23, *n.s.*).

Although these data do not rule out domain-general influences, they suggest the observed effects were more a function of domain-specific PVs than general differences in reasoning tendencies.

Table 2 presents frequencies of zero thresholds. Participants with PVs were slightly more likely to give zero thresholds, but such responses were rare. This relationship only approaches significance for one of the six cases. Table 3 reports relationships between holding many PVs and zero thresholds (versus the opposite—threshold values ≥ .9). Endorsing related PVs predicts .9+ thresholds—PVs relate to fewer .9+ thresholds in the RB paradigm, more .9+ thresholds in the CR paradigm.

Discussion

The two paradigms we used yielded diametrically opposing results. People endorsing PVs looked less quantity sensitive as assessed by the RB paradigm but more quantity sensitive as assessed by the CR paradigm.[1] It is tempting to interpret these results as yet another piece of evidence of people's inconsistencies across contexts, reflecting the instability of moral beliefs. An alternative stance is to presume that one set of results is "real" and the other an experimental artifact.

We propose a third perspective. Just as prospect theory assumes a single value function susceptible to editing and framing processes that produce different choices or responses, we think that PVs may be associated with a consistent underlying value function, subject to attentional processes and other processing principles that yield different patterns of performance in different contexts. The RB procedure appears to direct attention to the lower part of some value function where the distinction between no harm caused and some harm caused is salient. We suggest that the CR procedure directs attention more towards net benefits. The CR procedure may effectively presuppose that a tradeoff is appropriate, while the RB procedure may more directly target the (un)acceptability of the tradeoff. By analogy, although one may be reluctant to sell an heirloom at any price, if one decides to sell it, the same respect for the heirloom now

may demand that one get the best price possible.[2] To rescue this description from circularity, in future studies we will seek independent evidence of these presumed processes.

These context effects suggest a need for a close examination of the processes that PVs motivate. A better understanding of morally-motivated choice must entail more fleshing out of its cognitive underpinnings and better theorizing about how this machinery operates in sociocultural context (Fiske & Tetlock, 1997; Shweder *et al.*, 1997).

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Footnotes

1. Baron (2006) has pursued the present results with different methods and has found different patterns. The methodological differences are extensive enough that we hesitate to speculate about the critical factors.

2. We thank Danny Kahneman for this example.

Table 1 – Proportion PVs Ensorsed, Quantity Sensitivity as Expressed in Two Procedures by Presence/Absence of PV

	Ritov-Baron							Connolly-Reb						
Item	%PVs	Thresholds		t	p_{rep}	η_p^2	1-β	%PVs	Thresholds		t	p_{rep}	η_p^2	1-β
		No PV	PVs						No PV	PVs				
Starvation	0.78	0.75	0.57	1.14	0.67	0.04	0.20	0.78	0.58	0.65	0.57	0.45	0.01	0.09
Cutting Forests	0.41	0.58	0.32	2.31*	0.91	0.13	0.61	0.46	0.55	0.75	2.08*	0.89	0.11	0.52
River Diversion	0.35	0.60	0.34	2.22*	0.90	0.12	0.58	0.41	0.47	0.66	2.04*	0.88	0.11	0.51

* $p < .05$

Table 2 – Frequencies of Zero Thresholds by Item and Presence/Absence of PV

Ritov-Baron				Connolly-Reb			
Famine	Zero	NonZero		Famine	Zero	NonZero	
no PV	0	8	$\chi^2 = 1.01$	no PV	0	8	$\chi^2 = 1.53$
PV	2	27	$p_{rep} = .63$	PV	3	26	$p_{rep} = .71$
Logging	Zero	NonZero		Logging	Zero	NonZero	
no PV	0	22	$\chi^2 = 1.85$	no PV	0	20	$\chi^2 = 3.25^{\dagger}$
PV	1	14	$p_{rep} = .75$	PV	2	15	$p_{rep} = .85$
River	Zero	NonZero		River	Zero	NonZero	
no PV	1	21	$\chi^2 = 1.34$	no PV	1	21	$\chi^2 = 1.06$
PV	2	10	$p_{rep} = .68$	PV	0	15	$p_{rep} = .65$

† $p < .10$

Table 3 – Correlations between # (Un)Related PVs and Zero Thresholds vs. Thresholds ≥ .9

	Ritov-Baron		Connolly-Reb	
	% Zeros	% .9+	% Zeros	% 9+
Related PVs	0.27†	-0.48**	0.15	0.48**
Unrelated PVs	-0.29†	0.28†	0.10	0.27

† $p < .10$

** $p < .01$