Transcending the Limitations of Environmental Economic Framing: Toward a Metaeconomics of Environmental Choice

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1. Abstract

Purpose of the paper is to test dual-interest theory and the metaeconomic approach to environmental choice, specifically:

- recognize the role of empathy as the basis for internalized shared other-interest,
- tempering self-interest by empathetic concern.

Approach:

- a framed laboratory experiment on downstream water pollution.

Major findings:

- upstream farmers who practice conservation temper profit maximization with empathy-based environmentally conscious behavior,
- dual-interest metaeconomic model (MEM) produces better results than the standard economics model (SEM).

2. Hypotheses

- **H1**: Pursuing self-interest (max profit) leads to lower levels of environmentally conscious behavior.
- **H2**: Pursuing empathy-tempered self-interest leads to higher levels of environmentally conscious behavior in metaeconomic model.
- **H3**: MEM produces more accurate results than SEM.
- **H4:** Personality adjusted MEM is more accurate than MEM.
- **H5 A/B**: Framing the decisions with the emphasis on empathy/self-interest leads to more/less environmentally conscious decisions.

3. Experimental design

Hypothetical scenario: upstream farmers (UF) decide on how much Conservation Tillage (CT) to use on their land (500 acres):

- **higher** levels of CT lead to lower chemical runoff and **better** water quality downstream, but **lower** profit for UF
- **lower** levels of CT lead to **worse** water quality downstream, but **higher** profit for UF

Players:

- Upstream Farmer (UF)
- Upstream Farmer/Downstream Water User (UF/DWU)
- Downstream Water User (DWU)

EMPATHY FRAME: SELECTED CT AND PAYOFFS (UF, UF/DWU, DWU)

		Upstream Farmer/ Downstream Water User		
		500	250	0
Upstream Farmer	500	500, 1000, 1500	500, 1250, 1250	500, 1500, 1000
	250	1000, 750, 1250	1000, 1000, 1000	1000, 1250, 750
	0	1500, 500, 1000	1500, 750, 750	1500, 1000, 500

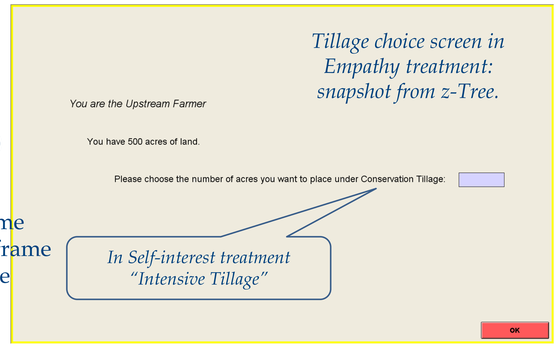
4. Experimental procedures

Participants: 226 in total, 45% female, 27 years old on average

Cash earnings: Mean of $28.9 for 70-90min (opportunity costs ~$8/hour)

Treatments:

- Empathy frame
- Self-interest frame
- Neutral frame



5. Results

Tobit regressions censored between 0 and 500.

Upstream Farmer's decisions about the level of conservation technology

	SEM	BMEM	PAMEM	PAMEM +TR+GNDR
Intercept	502.7***	-44.6	-26.5	-83.7
I_G	-72.5***			
I_G x I_M		11.9***		
I_G (SELFISM) x I_M(EMPATHY)			0.46***	0.42***
EMPATHY TR (1=Yes)				87.9*
SELF-INTEREST TR (1=Yes)				-45.5
GENDER (1=Female, 0=Male)				113.3***
Nagelkerke R_sq.	0.28	0.31	0.41	0.55

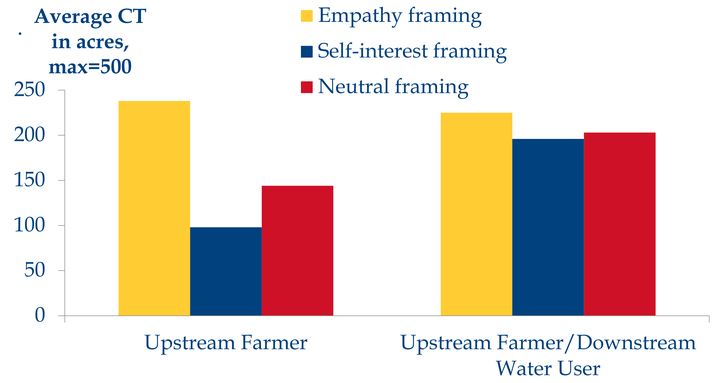
Upstream Farmer/Downstream Water User's decisions about the level of conservation technology

	SEM	BMEM	PAMEM	PAMEM+ TR+GNDR
Intercept	414.5***	117.5***	119.8***	72.9
I_G	-45.2***			
I_G x I_M		4.1***		
I_G (SELFISM) x I_M(EMPATHY)			0.31***	0.30***
EMPATHY TR (1=Yes)				66.1
SELF-INTEREST TR (1=Yes)				-7.27
GENDER (1=Female, 0=Male)				57.1
Nagelkerke R_sq.	0.25	0.24	0.30	0.35

*** - significant at 1%, ** - at 5%, * - at 10% level.

Results cont'd

Average acreage placed under Conservation Tillage (CT) chosen by the farmers in the first round



6. Conclusions

- Confirmed HYPOTHESES 1, 2 and 4.
- Mixed support for HYPOTHESES 3, 5A&B:
  - UF equation strongly supports, UF/DWU no sig. difference
- Female UF (but not UF/DWU) are more environmentally conscious than their male counterparts.
- UF/DWU who literally "walked in the shoes of" DWU made more environmentally-friendly and empathetic choices than UF.
- UF/DWU decisions depends less on their personal dispositions, but rather on the context.
- The findings suggest the importance of ethical context of money-related decisions.
- Strong support for dual-interest metaeconomic approach.

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