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Experiments on empathy conservation: Implications for environmental policy

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Abstract
Environmental problems coupled with shrinking budgets for environmental agencies call for alternative strategies to improve the effectiveness of current and future environmental policies. Empathy conservation promises such an alternative approach. In this paper we summarize the findings from previous research testing various propositions of metaeconomics and dual-interest theory based on which we develop a conceptual framework for empathy conservation. Furthermore, we offer recommendations for using empathy conservation in environmental policy and programs.

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Keywords
empathy conservation — dual-interest theory — metaeconomics — environmental policy

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Introduction to empathy conservation

Standard economic theory guides policy makers to rely on financial incentives (such as targeted subsidies or taxes) as the market-based approach. Significant environmental problems coupled with limited and often shrinking budgets for environmental agencies call for alternative strategies to improve the effectiveness of current and future environmental policies. We argue that empathy conservation promises such an alternative approach. The term *empathy conservation* (for a more detailed discussion see Czap et al., 2015 and Lynne et al., 2016) refers to individual environmental conservation decisions that are motivated by empathy toward nature, other fellow human and non-human beings, and future generations. The underlying theory is the metaeconomics framework and the dual-interest theory[1] (originally developed by Lynne, 2006 and fully formed in Lynne et al., 2016), which argues that individuals are motivated by two inseparable yet conflicting interests: self-interest and other-interest. Typically, self-interested behavior is tempered by empathy, leading to a more balanced decision with sacrifices in both interests. Empathy can be achieved by imagining the struggle of others, through "walking-in-the-shoes-of-others", including other people and nature.

The relevance of increasing empathy for conservation decisions has been discussed and tested in several laboratory experiments. In this article we describe the basic structure of these experiments, categorize and summarize the findings from the research, develop a theoretical framework, and draw implications for policy makers in the context of environmental conservation.

Laboratory experiments exploring empathy conservation

According to Richard Thaler and Cass Sunstein, who coined the term, "A nudge ... is any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler and Sunstein, 2008, p. 6). Choice architecture is the context in which choices can be presented to decision-makers, whose choices depend on how the information is presented to them (Johnson et al., 2012). Nudging has recently received a considerable amount of attention from both academia and governmental units (for example, the UK's Behavioral Insights Team and the (now defunct) USA's White House Social and Behavioral Sciences Team). Nudging is used in several areas, such as health, personal finances, dieting, education, tax evasion, and energy conservation, to promote more efficient and beneficial outcomes (see Sunstein, 2014, for specific examples). Soft nudges are not in any way coercive and there are no direct material incentives (Sunstein, 2015).

Even though there are numerous examples on the effectiveness and positive impact of nudges (e.g. Benartzi et al.,

[1] Dual-interest theory is closely related to MacClean-Cory dual-motive theory revised by Tomer, 2012, which argues that people have two dominant motivations: ego and empathy. These motivations are often in conflict and people are searching for balance of these motives.

2013; Blumenthal-Barby and Burroughs, 2012; Liu et al., 2013), there is also criticism and opposition. The main criticism is that the use of nudges may not be ethical, because it may be intrusive and manipulative (Tomer, 2017) and as such may violate autonomy (Wilkinson, 2013), even if in our own best interest. Sunstein (2015) agrees that there is some nudging that is ethically objectionable, but that does not mean that all nudging, even if not consented to, falls into the same category. In particular, he points out that there is always some choice architecture and/or default provided, so it is unclear why a specific choice architecture or a specific default is the appropriate one. Furthermore, some nudges lead to increased autonomy rather than decreased autonomy due to limited time and cognitive resources.

In our experiments we use *empathy nudges*, i.e., nudges that prompt individuals to feel empathetic and think of others (humans or environment). We argue that these nudges are not manipulative, and as such do not violate individual autonomy. Dual-interest theory and metaeconomics (Lynne et al., 2016), revised dual-motive theory (Tomer, 2012) based on the MacLean's triune brain model, and the empirical work of the neuroscientist Tania Singer and colleagues on caring economics[2] demonstrate that both self-interest and other-empathy-based-interest play a role in economic decision-making. Moreover, people strive for balance of the interests and the same way as financial incentives trigger self-interest, empathy nudging appeals to other-interest. Empathy nudges are soft nudges, as they do not change the choice set and provide no material incentive.

In the course of several framed laboratory experiments we have explored the role of empathy and other-shared interest, and whether we can use soft nudges to make people's empathy motivations salient and move them toward more environmentally conscious choices and empathy conservation. Our experiments were framed in the agricultural context. Undoubtedly, other industries and human consumption decisions greatly influence the environment. Based on the EEA (2013) report in Europe the "... electricity and agriculture sectors provide only 4% of gross value added and 7% of total employment of the EU-25 economy but together emit 47% and 57% of GHG emissions and acidifying emissions, respectively" (p. 6). Agriculture is therefore a key sector to study when designing policies to move towards environmental sustainability.

The first set of experiments was based on individual decisions about selling or donating carbon offsets. Participants were presented with a choice to sell their carbon offsets (that they were told they had generated as a result of conservation activities on their land) on a climate exchange and/or to a conservancy project. Offsets sold to the climate exchange were going to be subsequently used by businesses to offset their carbon emissions (and thus would have zero net effect), while offsets sold to the conservancy project were going to be retired (reducing the amount of carbon dioxide in the atmosphere). Depending on the round, the prices offered by the climate exchange were between 0% and 214% higher than the prices offered by the conservancy project. In one variation to this experiment, participants were asked after each round to rate themselves on statements from empathy, locus of control, autism, and selsm/narcissism personality scales. This invited people to reflect on who they are and how they treat others. Another variation gave subjects the option to donate offsets to the conservancy project instead of selling them. In this context we also measured the effect of leadership and information about decisions of others on the decision to donate/sell. In all experiments, the participant's decision was strictly individual, it was not affecting others, and there was no reason to act strategically. As such the pro-environmental behavior within the experiment was not directly affecting other humans. By donating or selling offsets at a discount to the conservancy project, the participants were providing costly signals of their environmental concern and empathy for the environment.

In the second set of experiments, the participants played a downstream water pollution game. In this game an upstream farmer (UF) made decisions on the conservation level on their land. Conservation was costly for the UF: a higher conservation level resulted in lower payoffs for the UF. At the same time, a higher conservation level led to lower levels of soil erosion and chemical runoff and thus resulted in better quality of drinking water in the downstream lakes and rivers. Another player, the downstream water user (DWU), was on the receiving end: a higher conservation level chosen by the UF led to lower DWU expenses on water cleanup and resulted in a higher payoff for the DWU. In one of the experiments, there was a third player with the dual role of UF-DWU. The UF-DWU was affected by the conservation level chosen by themselves and the UF. Depending on the experiment and the treatment, the DWU had the option to try to influence behavior of the UF by (1) sending positive or negative emotional feedback in the form of an emoticon (☺ or ☹) after the decision; (2) sending only negative feedback of one or two ☹ after the decision; (3) imposing a costly monetary fine after the decision; or (4) sending a message nudging for empathy prior to the decision. We also compared the effect of property rights ownership by manipulating the assignment of property rights to UF or to DWU. By choosing a non-zero conservation level, the participants playing the role of UF were sending costly signals on their environmental concern and the concern for the payoff of other players, namely DWUs. As such, the pro-environmental behavior within the experiment was directly affecting other humans.

The results of these experiments[3] can be organized around four major themes:

- Theme 1: Empathy nudging and framing affect environmental conservation in a positive way:
    - Individuals are willing to empathize and walk in the shoes of others when making environmentally-

[2] www.caring-economics.org

[3] Some of these results were summarized in an earlier outreach publication (Czap et al., 2014b).

relevant decisions. Moreover, individuals readily respond to other-interest framing that invites empathy and imagination of how others feel. Self-interest framing, on the other hand, is not a strong determinant of conservation decisions (Czap et al., 2012a).

- Nudging for empathy using messages calling to "walk-in-the-shoes-of-others" works well in conjunction with financial incentives. On average this type of empathy nudging showed superior performance in terms of increased conservation levels and led to more profit sharing/more equitable distribution of profits as compared to financial incentives applied alone. The empathy considerations temper self-interest, leading to decisions in which self-interest and other-interest are in balance. These sacrifices in profits result in both greater sharing with other people, who are affected by the individual decisions, and higher levels of conservation, tempering self-interest for many (Czap et al., 2015).
- Nudging for empathy using a frowney emoticon works to express negative emotions/disapproval. When the victims of pollution sent such response to the farmer's decision regarding the level of conservation on their land, the farmers increased their conservation in the next period (Czap et al., 2013). However, expressing positive emotions using a smiley emoticon was not effective.
- Nudging for empathy using a frowney emoticon can be more effective than monetary punishment. Learning about negative emotions of the affected party leads to greater levels of conservation by the polluter than when receiving a monetary fine. Moreover, the fine can lead to retaliation and can result in a further decrease in conservation levels (Czap et al., 2012b).

- Theme 2: Exposure to consequences, re-assignment of property rights and self-reflection increase conservation:
  - Exposure to the consequences of one's own and other's decisions is effective in increasing conservation. The polluters who were also victims of pollution increase conservation levels as compared to the polluters-only, even if zero conservation is still the profit-maximizing choice (Czap et al., 2013). This is a stronger version of nudging for empathy as individuals are not just invited to "walk-in-the-shoes-or-others", but they are actually experiencing the outcome of their actions.
  - Property rights owners who traditionally are affected negatively by environmental and income distribution choices of other people, act more pro-environmentally and share more (Czap et al., 2018).
  - Frequent reflection on "who I am" and "how do I treat others" results in more balanced and environmentally friendly actions (Ovchinnikova et al., 2009).

- Theme 3: Norms, peer behavior, and personality traits play a significant role in conservation:
  - A certain percentage of behavior, such as anonymous donations, is purely altruistic/not involving financial incentives. This percentage is independent of the opportunity cost, i.e. the financial incentives offered to deviate. The remaining percentage of decisions is affected by a mix of altruistic considerations and financial incentives (Czap and Czap, 2010). Altruism, in turn, potentially arises out of the act of empathy. That is, by first walking in the shoes of the other, one may decide to sacrifice a bit in the self-interest to help that person, in an altruistic act.
  - There is a positive relationship between the behavior of leaders/first movers and followers in environmental contexts (Czap and Czap, 2011).
  - Individuals scoring higher on empathy personality scales are in general more likely to be moved by other people's behavior and as a result "join the cause" for environmental conservation and sustainability (Ovchinnikova et al., 2009; Czap and Czap, 2010; Czap et al., 2012a).

- Theme 4: Gender matters[4] for conservation decisions, but the effect is context-dependent:
  - Females, on average, are more likely to choose higher levels of conservation than males, especially when they can unilaterally determine their own and their partner's payoff (Khachaturyan and Czap, 2016).
  - Payoff-relevant factors have a stronger influence on the decisions and expression of emotions (both positive and negative) than gender (Khachaturyan and Czap, 2016).
  - Empathy nudging is overall more effective in increasing conservation levels for females than for males, while imposing fines affects both genders equally. Along similar lines, females behave more empathetically than males when they are victims of pollution, while there is no gender difference in the behavior of polluters (Czap et al., 2014a).

[4] All results reported here are based on averages. In the cases when there is heterogeneity between the subjects, the results are not necessarily applicable on the individual level.

- Empathy nudging and financial incentives are equally effective for females, while for males only financial incentives matter for increasing conservation level. Both genders respond to financial incentives equally, but only females are sensitive to the combination of incentives and empathy nudging (Czap et al., 2018).

Conceptual framework of empathy conservation

The above findings suggest the need to go beyond the usual regulation and financial incentives approach to environmental policy. These findings also suggest that instead of encouraging socially beneficial behavior, pecuniary incentives may instead crowd out intrinsic motivation. However, there is also evidence that eliminating financial incentives entirely is not the best solution. Instead, a combination of pecuniary incentives and soft nudges is likely to work the best: this is about striking a balance between the two interests, with conservation policy focused on striking the best balance. We combine these laboratory findings with the theory of dual-interest and metaeconomics (Lynne et al., 2016) to develop a conceptual framework of empathy conservation with the goal of achieving long-term environmental sustainability. *Environmental sustainability* is understood as the state such that the extraction rate of renewable resources does not outpace their regeneration rate and waste emissions stay within the absorptive capacity of the environment (Goodland, 1995). In other words, with *long-term environmental sustainability* environmental functions are preserved for future generations' use (Hueting, 2010).

The framework of empathy conservation (see Figure 1) maps out the relationship between the societal need for environmental conservation, individual motives, and public policy interventions targeting individual behavior to achieve positive societal outcomes (which includes long-term environmental sustainability).

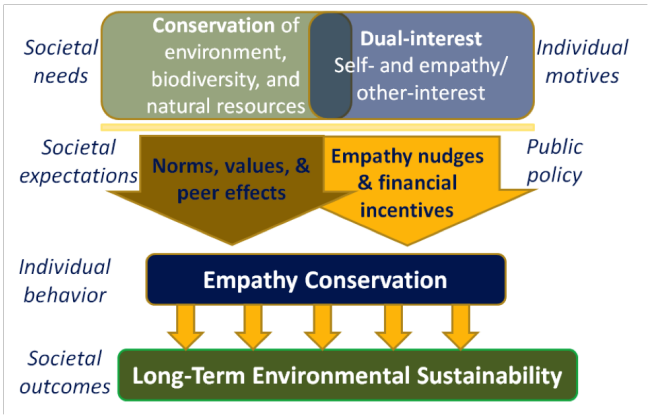

Figure 1. Framework of empathy conservation.

The ultimate goal of empathy conservation is to achieve the societal outcome of *long-term environmental sustainability*. Societal needs are represented by *conservation of environment, biodiversity, and natural resources* (top left box on Figure 1), which requires a change in individual behavior. Individual behavior is driven by individual motives represented by *dual interest*, including *self-interest* and *empathy based-other interest* (top right box on Figure 1). Note, that societal needs and individual motives intersect (the two boxes overlap) because fulfilling societal needs can serve empathy/other regarding interest as well as self-interest in some situations. Since there is no perfect overlap, the policy makers should intervene, and societal expectations should be clearly communicated. The task of environmental and conservation policy-making is to provide *empathy nudges and financial incentives* (right wide arrow on Figure 1). This is augmented by the individual following societal *norms and values* (which arise out of the process of empathizing) and by *peer effects* (left wide arrow on Figure 1). The two wide arrows intersect as some of these nudges work through norms and peer effects. Public policy making intersects with societal expectations and they together encourage desirable individual behavior in the form of *empathy conservation*. Financial incentives are going to appeal to profit-maximizing self-interest, while nudges are designed to appeal to empathy/other-interest. As the expectations of conservation behavior are communicated widely, individuals will feel that meeting those expectations will serve both their self-interest and other-interest. Empathy conservation, in turn, will lead to the desirable societal outcome of *long-term environmental sustainability*.

This empathy conservation framework offers the basis for contextualizing and developing environmental conservation policy. It demonstrates, that without society perceiving the need for environmental conservation, it would be challenging, if not impossible, for the policy makers to encourage such conservation. The framework also emphasizes the need to work hand-in-hand with and rely on societal norms to achieve the highest possible conservation levels. Individuals have a strong drive to belong (Rifkin, 2009). Thus, an individual, who observes their peers' pro-environmental behavior and knows that societal norms are to conserve, is more likely to engage in empathy conservation. The combined conservation efforts of many individuals will lead to achieving the societal outcome of long-term environmental sustainability.

Implications of empathy conservation for environmental policy and programs

The experimental results and the conceptual framework offer insights into conservation behavior based on which we develop several practical suggestions for environmental policy.

First, policy makers should incorporate non-pecuniary incentives and soft nudges into the conservation policy design/narrative. For example, the US Department of Agriculture (USDA) Natural Resources Conservation Service web-

page on the Conservation Stewardship Program and the associated factsheet are mostly devoted to the explanation of payments and eligibility. It would be beneficial to redesign the page, the factsheet, and other communications about the program to outline the challenges and the environmental benefits of the program with *concrete* cases (including pictures) of improved watersheds, saved habitats, etc. These non-pecuniary incentives and nudges, in particular empathy nudges, should not replace financial incentives, but rather complement them. For example, the USDA Financial Service Agency regularly sends out letters to join/renew the contracts for the Conservation Reserve Program (CRP). Along with information about the financial benefits, these letters could include a statement inviting the reader to imagine the state of the land with and without environmental protection, for example along the lines "before making a decision about participation/re-enrollment in CRP, please contemplate how your decision will affect…".

Second, social comparison, which is encouraged by, and evolves through, the act of empathizing with others, is a powerful force in motivating people to engage in conservation behavior (see Schultz et al., 2007; Ferraro et al., 2011; Ferraro and Miranda, 2013; and Ferraro and Price, 2013 in the context of water conservation and Nolan et al., 2008; Allcott, 2011; and Allcott and Rogers, 2012, for electricity conservation). As such, it would be beneficial to include communities in the coordination of conservation efforts. The USDA service centers and/or extension offices can support agricultural producers to become leaders in conservation in order to provide a good example to other farmers in the region. To more directly expose farmers to this leadership effect, conservation work-groups could be created to include both high and low conservation level producers.

Third, heterogeneity in response to incentives, reflecting widely different ways that individuals balance their self- and other-interests, offers both a challenge as well as an opportunity for environmental policy. On one hand it acknowledges that there is no one policy that is effective for everyone. On the other hand, accounting for the heterogeneity by using a more targeted approach has substantial potential for increased policy impacts. The experiments discussed in this paper allowed us to identify such heterogeneity in gender. This is highly relevant in contexts in which women are often the main decision makers, such as water and electricity usage at home. When it comes to energy usage, the Energy Saver Guide[5] published by the US Department of Energy states on the first page:

> "You have the power to save money and energy in your own home. Saving energy reduces our nation's demand for the resources needed to make energy and improving your energy efficiency is like adding another clean energy source to our electric power grid. The result is reduced utility bills and money in your pocket. Improving your energy efficiency can also improve the comfort of your home and your quality of life".

Even though this statement alludes to the environmental benefits, the focus is clearly on the direct financial benefits to the customer. As we have found in our experiments, a combination of empathy nudges and financial incentives is a lot more effective in changing the behavior of women and hence should be applied in such booklets. Adding statements nudging the consumer to be more empathetic are low cost modifications with a substantial impact. In the context of farming, it is important to realize that the number of women operators heading farms has substantially increased during the last several decades, from 5.2% in 1978 up to 13.9% in 2007 (Hoppe and Korb, 2013). As such, what used to be a fairly homogeneous audience, is now much more (and increasingly so) heterogeneous, underlining the importance of more targeted policies. In response, the USDA service centers and/or university extension offices should alter communication strategies, especially when it comes to conservation, to focus on a mix of financial incentives and empathy nudges for female farm operators.

[5] www.energy.gov/sites/prod/files/2017/10/f37/Energy_Saver_Guide-2017-en.pdf

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