Payment vs. compensation for ecosystem services: do words have a voice in the design of environmental conservation programs?

Payment vs. Compensation for Ecosystem Services:

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Abstract*:* We examine whether and how word choice can affect individual perceptions about a proposed Payments for Ecosystem Services (PES) program when objective outcomes are similar. From a traditional economic perspective, this type of manipulation would be considered unlikely to affect perceptions and behaviour, especially in the presence of pecuniary incentives and repeated decisions among sophisticated agents. From a behaviourally informed perspective, however, psychological and political theories of wording argue that word choice can have a significant impact on economic behaviour. To substantiate this discussion, we conduct a survey experiment that tests the impact of the words 'payment' and 'compensation' on favorability ratings of a proposed PES program. These preliminary findings suggest that the words used to describe public policies can be influential non-pecuniary interventions.

1. Introduction

Wording is an important consideration in endeavors that engage the public. Marketers, for instance, invest considerable resources in naming brands and products (Colapinto, 2011). The importance of linguistic choices is also evident in the political domain, where it has been shown that every detail of a message can be leveraged to serve a specific goal (Brewer 2001, Burnett and Kogan 2015). There is less consensus regarding the significance of words in economics, where two conflicting views emerge. Under classic assumptions, words are often discussed in the context of cheap-talk, and monetary outcomes are considered to be a more important determinant of behaviour. Despite this, some studies have found that scenarios characterized by identical monetary incentives can lead to different behaviours according to the words used to describe them, such as rebate *versus* bonus (Epley et al., 2006) or tax *versus* offset (Hardisty et al., 2010). Results like these suggest that even a single word can indeed affect people's behaviours.

In the context of market-based instruments for environmental conservation, such as Payments for Ecosystem Services (PES), the terms 'compensation' and 'payment' are both frequently used to refer to the amount of money participants receive in exchange for providing an environmental service. In a neoclassical framework, the label used to describe this incentive is assumed not to have any great implications for behaviour. From this perspective, pecuniary outcomes are the primary determinant of behaviour. Insights from behavioural economics, in contrast, suggest that other forces may be at

work, which could explain why differently-labeled alternatives can impact behaviour in different ways even when these alternatives possess similar economic characteristics (Feldman and Teichman, 2008; Thaler, 1999). This debate has not yet been addressed in the PES literature, where the discussions on terminology focus essentially on theoretical definitions. (Wunder 2005).

In what follows, we first elaborate on the two main views regarding whether and how words are likely to influence perceptions, decisions and behaviours, and we present some empirical evidence relevant to this discussion. Secondly, we conduct a pilot study to investigate whether people's judgment of a proposed PES program differs if the money received is described using different labels (i.e., '*compensation'* vs. '*payment')*. The study is located in a developing country, namely Madagascar, where one might expect subtle linguistic manipulations to have an insignificant impact on behaviour compared to actual monetary incentives. Finally, we conclude and discuss several policy implications.

2. How can words change the world?

In a traditional neoclassical approach, only objective pecuniary outcomes such as payoffs matter to decision-makers. Many economic models as they are applied today often adopt this narrow view of human behaviour by focusing solely on instrumental utility, according to which only final outcomes enter into the decision-making process. This assumption implies that agents have preferences over the ex-post distribution of wealth, but they do not value the process by which these final outcomes are generated (a process that can conceivably encompass descriptive, i.e. linguistic, elements). From this perspective, as long as the meaning conveyed in a description is equivalent, the use of different words should not influence the decisions made by the self-interested individual, and word choice is often discussed only in the context of 'cheap talk'. This view may appear even more convincing in countries where fundamental needs are in general, not fully satisfied. In these and all contexts, the use of one word or another (e.g., compensation or payment) in referring to the same amount of money should not change perceptions, decisions or behaviours. Moreover, even if lay people could be influenced by such manipulations in one shot interactions, one would expect repetition to eliminate these effects. In sum, sophisticated agents are assumed to pay attention strictly to the denotative meaning of the words that they encounter as well as focus solely on objective final outcomes (i.e. monetary payoffs) in the long run. Although this viewpoint continues to be shared by some economists who consider human beings to be Econs (Thaler and Sunstein, 2008), other

economists do recognize that 'cheap talk' can influence decision making in Humans (and even Econs) in various contexts (Farrell, 1995).

Unlike the traditional approach that considers only denotative meanings and objective outcomes, several psychological mechanisms provide a conceptual basis for how words can affect perceptions, decisions and behaviours in surprising ways (Farrow et al., 2016). We review several mechanisms that are more likely to matter with respect to environmental behaviours, and especially with respect to the two words we experimentally investigate (payment *versus* compensation) in the context of the provision of ecosystem services.

First, the words one confronts in any given situation can elicit cognitive deliberation using either System 1 or System 2, the two basic systems that the brain employs to process information (Kahneman, 2011). Whereas System 1 is characterized as fast, automatic, frequent, emotional, stereotypic and subconscious, System 2 is described as slow, effortful, infrequent, logical, calculating and conscious. By choosing to use specific words, one can (voluntarily or involuntarily) solicit processing via System 1 (*vs. System 2*), and in doing so induce affect-driven (*vs. analytical or more reflexive*) reactions that frequently operate under the radar of consciousness *(vs. consciously and deliberately)*. In this way, words have the ability to lead to either superficial or deeper processing, which can have an impact on subsequent behaviour. In support of this phenomenon, empirical evidence shows that objectively identical information seems to be processed more fully when expressed in negative rather than positive terms (Baumeister et al., 2001; Cialdini et al., 2006 for an environmental application) and that using one particular word rather than another (even if the person using these words may be unaware of their impact) is not without behavioural implications (Drews and Antal, 2016). The possible impacts that words can have on behaviour becomes even more complex when considering the fact that, in addition to denotative meanings (i.e. literal meaning, as described in the dictionary), words frequently evoke connotative meanings (i.e. meanings that may simply be associated with the literal meaning), as well. In some cases, the provocative connotative meaning evoked by a word may be more readily accessible than its denotative meaning and may lead to hasty, affect-driven reactions. A recent study (Hardisty et al., 2010) shows that the same cost labelled as either a 'carbon tax' or a 'carbon offset' impacts people's preferences in different ways according to their political affiliation. Individuals who reported more liberal political views did not discriminate between the two labels, whereas those who reported more conservative political views strongly preferred the carbon offset to the carbon tax, even though the measure described was of equal magnitudes. In this way, the tax label seemed to trigger System 1 among conservative individuals, eliciting negative, stereotypical thoughts and associations, thereby

increasing their propensity to reject the measure (Hardisty et al., 2010; see also Sussman and Olivola, 2011).

Second, another stream of literature shows that words can be capable of invoking preconscious conceptual associations that have been shown to generate biases in perception and decision making in various domains (Alter, 2013; Nelson and Simmons, 2009; Meier et al., 2011; Drews and Antal, 2016). Words can even lead to self-fulfilling prophecies (Becker, 1963) when the label attached to something (e.g., 'dirty money') alters the perception of the thing itself (i.e., money) and related decisions that may be related to it (e.g., higher level of prosocial spending) (Park and Meyvis, 2015). Certain words, for instance can lead people to associate money with specific uses, which can lead to categorizing identical amounts of money into separate mental accounts that, contrary to the predictions of conventional economic theory, are not fungible (Thaler, 1999; Epley et al., 2006). While some words activate a calculative and business mindset (outcome-based decisions), other words may invite an ethical or moral mindset (rules-based decisions) (Tan and Low, 2011; Tenbrunsel and Messick, 2004; Vohs, 2015). An interesting example of the power of words on perceptions, decisions and behaviours is provided by Tan and Low (2011) who examined how the words used to describe compensations given to organ donors can significantly change people's perceptions and subsequent behaviours. Based on these findings, the Singaporean government carefully avoided using the word 'payment,' when defraying the expenses associated with organ donation, as 'payment' can effectively transform the perception of this altruistic act into a commercial transaction, and was therefore likely to generate a crowding-out of intrinsic motivation (Bowles, 2008). The authorities instead opted to use the word 'reimbursement'.

In a similar vein, we suspect that the word 'payment' is more likely to evoke a business mindset, triggering market norms of behaviour rather than social or moral norms. This market-oriented mindset can undermine intrinsic motivations to preserve the environment and lead to a crowding-out effect (Frey and Oberholzer-Gee, 1997; Vollan, 2008). Despite the fact that the word 'compensation' also conjures thoughts of money, we believe that the associations it tends to elicit are less related to the idea of manipulation and other negative perceptions that can accompany the word 'payment.' By avoiding such connotations, a milder word like 'compensation' conceivably preserves people's sense of agency and freedom, and may therefore be more supportive of pre-existing intrinsic motivations to behave prosocially. In short, we contend that, *ceteris paribus*, stated support for a prosocial behaviour will be higher when an identical monetary incentive is labelled as compensation rather than payment. Based on the preceding discussion, *our main behavioural*

hypothesis is that payment and compensation are characterized by different conceptual and associative properties.

3. Experimental survey

In this section, we report the results of a survey experiment whose purpose was to (i) investigate whether the wording used to describe an environmental program impacts individual opinions and (ii) indicate which word is more suitable with respect to the desired policy objective. Market-based instruments such as PES are increasingly popular tools to financially incentivize environmental conservation. Most of the research in this area focuses on the monetary elements of these programs, such as the magnitude of the incentive (Adams et al., 2010; Engel et al., 2008; Kosoy et al., 2007) or the temporal structure of the contract (Clot et al, 2014). So far, relatively little attention has been paid to the words that are (or should be) used to describe such programs. We recognize that this aspect of PES may seem trivial, *prima facie*, compared to the impact of more traditional economic arguments. In light of our previous discussion, however, we believe that this factor deserves at least some preliminary investigation. To assess the robustness of the properties associated with the words *payment* and *compensation*, we added two categories[1] that distinguish two different origins of the incentive (local organization vs. international organization), which produces the following 2x2 ('*two by two*') between-subject experimental design (Figure 1).

Figure 1 - 2x2 between subject experimental design

		Incentive label	
		Payment	Compensation
Incentive source	International organisation	*Treatment 1 (N=189)*	*Treatment 2 (N=186)*
	Local organisation	*Treatment 3 (N=186)*	*Treatment 4 (N=185)*

The survey experiment consists of a text describing an environmental measure in the form of a market-based instrument (PES). As presented in Figure 1, we manipulate two aspects of this measure. First, the monetary incentive received by the environmental service provider was labeled

[1] See Lepore and Brown (1997) for an in-depth investigation of stereotype activation upon categorization.

as either a '*payment'* or a 'compensation'. Second, we manipulate the incentive source as originating from either a local or an international organization.

Participants were then asked to rate their opinion of the project (in terms of expected impact) on a scale from 1 (= very negative) to 7 (= very positive). We elicit socio-economic information through a survey administered at the end of the experiment. Participants read the following text:

"Intensive agriculture has received growing attention in Madagascar. This type of agriculture leads to impoverishment of soil quality and threatens the country's food security. An ***international/local*** *organization is committed to fight against this environmental and health threat. By encouraging the use of agro-ecological technology, this* ***international/local*** *organization wishes to promote the use of alternative agriculture in order to reconcile the need for economic profitability with environmental preservation. Agroecology aims at protecting soils by providing permanent vegetative cover. It thus helps to restore the fertility of the land and increase its efficiency while simultaneously reducing irrigation needs. The method supported by this* ***international/local*** *organization is considered to be the most progressive. It involves no plowing or fertilizers, and helps to reduce carbon dioxide emissions by fixing carbon in the soil.*

On a scale from 1 to 7, what do you think the overall impact of the project would be if the ***international/local*** *organization* ***compensates/pays*** *farmers practicing agroecology 20,000Ar/ha?"*

1	2	3	4	5	6	7
Very negative	Negative	Fairly negative	Neither negative nor positive	Fairly positive	Positive	Very positive

The technical content of the text (the measures to be proposed, amount of the incentive offered, etc.) were chosen using expert input in order to ensure a high degree of plausibility. The experiment was conducted among 746 undergraduates (49.73% male) at the University of Antananarivo (Madagascar) during the fall of 2012. Our sample is comprised of students in agronomics (39.15%) and economics. The majority of students are from Tananarive province (71.45%) and the average age is 21.76 years. In order to avoid any selection bias, students were not previously informed that they would participate in a survey. Instead, they were already present at a scheduled course when the survey was administered as a classroom activity at the end of the period.

The characteristics of our sample are provided in Table 1. The sample appears to be well balanced across the four treatments, with no statistical differences between groups regarding gender, age, resources, profile (agronomics vs. economics) or origin (Tananarive vs. Non Tananarive).

Table 1 – Sample characteristics - Kruskal-Wallis H test of between-group differences across participants assigned to the four treatment groups.

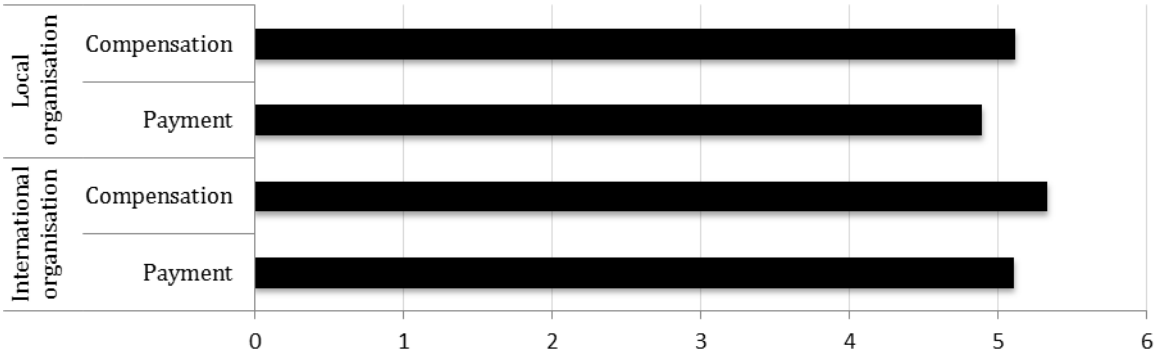
(N=746)	All	(1) Treatment 1	(2) Treatment 2	(3) Treatment 3	(4) Treatment 4	H-statistics	P-value
Socio-demographic characteristics							
Gender ratio (% of male)	49.73	48.15	51.63	51.61	47.57	1.063	0.7859
Age	21.76	21.74	21.89	21.64	21.77	1.756	0.6246
Monthly resources (%)							
< 50 000 Ar/month	47.76	50	46.20	47.83	46.96	0.000	1
> 50 000 Ar/month; < 100 000 Ar/month	32.97	30.85	32.61	33.70	34.81	0.000	1
> 100 000 Ar/month	19.27	19.15	21.20	18.48	18.23	0.000	1
Agronomic major (%)	39.15	37.63	34.95	38.38	37.53	0.799	0.8498
Origin (% from Antananarivo)	71.45	70.90	68.82	77.42	68.65	0.503	0.4781

Figure 2 illustrates our experimental results. The main outcome shows a significant difference in how people expect the program to perform when its participants are described as being paid vs. compensated. Specifically, treatments referring to 'compensation' elicit to greater confidence ratings than those referring to 'payment' (t=2.4567, p=0.014). This effect is, furthermore, robust to variations in the origin of the incentive: 'compensation' generates greater optimism than 'payment', at a 1% significance level, in both scenarios (local vs. international organization). We also note that people indicate a greater degree of trust in international organizations than in local organizations (t=-2.3544, p=0.018). Taken together, these results suggest that the combination that leads to the most favorable average rating is an international organization that compensates (treatment 2), while the

worst combination appears to be the local organization that pays (treatment 3). The difference in average rating between these two alternatives is significant at the 1% level (p=0.000).

Figure 2 – Evaluation of the overall project impact by respondents across treatments

(On a Likert scale from 1 [Very negative] to 7 [Very positive])



In addition, we find that economists exhibit greater optimism than agronomists (t=1.9647, p=0.049). Interestingly, the use of the word 'payment' seems to have a greater negative impact on the ratings made by students in economics *vs.* students in agronomics. Both categories of students seem to be equally influenced by the framing of the incentives' origin (local *vs.* international institution).

We conclude this analysis by running an ordered probit regression with project's anticipated impact rating (1 = very negative; 7 = very positive) as the ordinal dependent variable. We find that the impact of wording (incentive label and incentive origin) on people's perception of the proposed project is significant in the case of market-based instruments for conservation. The relationship between how a project is rated and the words used to describe it is significant (model 1) and remains so after controlling for various demographic and financial variables (model 2). We find no effect of gender, age or local origin, but the regression does illustrate a significant relationship between an individual's profile and their expectation of the project's impact.

Table 2 – Project's Opinion – Ordered probit model

	(1) Model 1	(2) Model 2
Income origin (Local organisation=1)	0.181** (2.33)	0.196**(2.50)
Income type (Compensation=1)	-0.190** (-2.44)	-0.185**(-2.36)
Sexe		-0.00521(-0.06)
Age		-0.0417*(-1.90)
Ressources		-0.0380(-0.74)
Profile (Agrologist=1)		0.121**(2.35)
Origin (Antananarivo=1)		-0.0953(-1.07)
Observations	728	720
BIC	2258.0	2256.8
Chi2	11.39	21.40
p	0.00336	0.00322

t statistics in parentheses
p < 0.10, ** p < 0.05, *** p < 0.01

This survey experiment suggests that the way in which environmental conservation measures are worded can have significant impacts on how these programs are received. Specifically, individuals in our sample appear to be much more likely to believe in the success of a PES project when the financial incentive is labeled as a 'compensation' rather than a 'payment'. In the following section, we conclude and develop several implications of these results.

4. Discussion and conclusion

Some scholars, especially those operating in the tradition of standard economic theory, have argued that variations in wording should simply be considered cheap talk and as such, should not influence behaviour, especially in the presence of more persuasive monetary considerations. The validity of this view seems even more plausible in the context of sophisticated agents involved in repeated decisions. In contrast to this view, we review several psychological mechanisms through which words are likely to have a significant influence on perceptions and subsequent decisions. We conduct a pilot study providing preliminary evidence that treatments that are equivalent in pecuniary outcomes but differ only by the word used to describe these outcomes (i.e., compensation *versus* payment) engender significantly different perceptions. Specifically, a proposed PES program involving

'compensation' is received more favorably than a program involving 'payment'. A clear limitation of our quasi-experimental survey is the fact that we study a non-incentivized intervention and our sample is comprised entirely of students rather than farmers or the public. A field-incentive compatible experiment involving actual potential providers of ecosystem services would be a natural and promising extension to this work. Moreover, investigating the impact of additional alternatives (e.g., reward, remuneration, recompense) as potential descriptors can enrich an analysis of how to best label the monetary incentives offered by PES schemes. Investigating whether the beneficial impact of strategic word choice endures over time also constitutes a promising extension. In what follows, we develop several practical suggestions. However, we caution the reader against over-interpretation given that the empirical evidence obtained in our pilot study is preliminary in nature and does not explicitly address all of the dimensions raised below.

Interestingly the issue we examine does not deal with the design or implementation of the PES instrument itself. Instead, we investigate the possibility that the framing of the instrument can constitute an effective but underappreciated intervention, one that is all the more appealing in the light of time and budget constraints. The psychological literature and our quasi-experimental results suggest that words are not, in fact, neutral features of policy instruments, as they may activate a variety of construals and for this reason, can ultimately represent powerful tools of influence. In particular, words can either reinforce or harm policy objectives (e.g., maximizing enrollment in a PES scheme). Despite the considerable strategic potential of word choice, many economists and policy-makers remain unaware of the impacts that can be associated with these choices. We now raise several critical issues and offer some suggestions for policy makers.

To help policy makers to anticipate the real effects of words and to avoid unintended consequences, we echo Farrow et al. (2016) in suggesting the usefulness of establishing an extensive list of potential terms that could be used to label an environmental measure, as well as the importance of a variety of factors that are not typically considered in policy design processes. An inventory of potential descriptors could include, for example:

- All synonyms of candidate terms as well as closely related words and with their denotative and connotative meanings, among the general public as well as among specific relevant sub-populations.
- How commonly the word is used in the given community and its easiness to pronounce, both of which can affect processing fluency and conceptual associations (Song and Schwartz, 2009),

- Any 'historical' considerations associated with the word in the given community[2],
- Other constraints regarding the use of a specific term (e.g. regulatory constraints).

To the extent that additional communities are likely to be concerned by a particular project in the future (e.g. through expansion), it also seems prudent to use the most versatile language possible in the original implementation of the measure in order to maintain broad subsequent applicability. If several languages are involved in a project's implementation, as is the case with North-South instruments and those spanning several countries (e.g. Europe's Common Agricultural Policy), translation issues must also be carefully considered at an early stage. Moreover, even if potential participants share the same language, it is also wise to maintain a cautious approach, as regional linguistic differences could conceivably have significant implications on program-related perceptions and behaviours. The cultural framework in which a policy takes place is also of great importance, especially considering that stereotype-activating words might have greater impact among certain subsets of a wider population. Indeed, in our survey, economists reacted more strongly to the word '*payment'* than did agronomists.

Expert opinions from linguists should also be solicited in order to help refine such a word database. Based on this information, we encourage performing pilot (quasi)experimental studies in order to identify the most beneficial words to use in policy descriptions, or at least those words that policymakers would do well to avoid if they have been shown to lead to counterproductive effects. Our results also stress the importance of taking into account how word choice can impact PES performance in unexpected ways, even at very preliminary stages. First impression bias should also be taken into consideration, as once a word has been used, it can be very difficult to alter people's subsequent construals and associations. These results also call for caution when communicating about policies. Prior research on people's perceptions of specific program characteristics can be of great value in improving the way in which projects are received, and improved perceptions can potentially lead to higher enrollment. Given the severity of global ecological issues, we encourage

[2] Experimental evidence has shown that the level of cooperation can greatly differ according to the name of the game (e.g., Kay and Ross, 2003; Liberman et al., 2004; Dufwenberg et al., 2011). Dufwenberg et al., 2011 find that playing the same game (with an identical payoff structure and instructions) under the labels "the Community game" or "the Wall Street game" affected peoples' willingness to cooperate dramatically. People who were told they were playing the Community game cooperated about 70 percent of the time, while those who were told they were playing the Wall Street Game cooperated only about 33 percent of the time. Nevertheless, this influence appeared to be country dependent. The magnitude of the impacts associated with these labels were opposite in Switzerland and Germany. The authors hypothesized that the German word for community has different connotations as a result of country-specific historical events. 'Community' was thought to have a negative connotation in Germany and a positive connotation in Switzerland.

policy-makers not to under-estimate these considerations and to devote significant resources to exploring them. A natural extension to this experiment would be to replicate it among farmers and other providers of ecosystem services in real-world settings in which these subtle manipulations have the potential to impact behavioural intentions, enrollment in, and overall performance of, PES instruments.

In conclusion, if further support is found for the importance of the way in which public policies are framed, we suggest avoiding a 'one-word-fits-all' approach and encourage greater deliberation surrounding the words used in public policies. We also recommend that case-by-case analyses be used to elicit the wording that is most optimal with respect to the pursued policy objective.

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