Exploring the role of anticipated guilt on pro-environmental behavior – a suggested typology of residents in France based on their recycling patterns

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Abstract

Purpose – So far, few studies dealing with the determinants of pro-environmental behavior have examined the impact of emotional variables. This research aims to extend previous work on the role of affective motivations underlying ecological behavior by exploring the influence of anticipated guilt on recycling.

Design/methodology/approach – A cluster analysis was conducted among 276 French interviewees based on their current recycling behavior, anticipated guilt, environmental concern, awareness of negative consequences and beliefs about facilitating conditions in their community of residence. In order to confirm assumptions related to the suggested typology, further quantitative tests were performed.

Findings – Three profiles were identified. Results suggest that environmental concern and awareness of the negative consequences associated with the increase of waste volume are not sufficient conditions to stimulate diligent recycling efforts. Anticipated guilt appears to influence behavior more directly and totally mediates the relationship between environmental concern and intention to recycle.

Research limitations/implications – Implications of this research exclude countries where recycling is mandatory or represents a strongly internalized social norm.

Practical implications – This study holds important implications in terms of public authorities' intervention. The emergence of anticipated guilt as a key determinant of intention to recycle suggests that guilt appeals could be a relevant communication strategy in order to promote recycling.

Originality/value – This research provides new insights to understand the role of anticipated guilt on ecological behavior using a typology. A predictive model of intention to recycle was also proposed.

Keywords Pro-environmental behavior, Recycling, Anticipated guilt, Environmental concern, Typology, Cluster analysis, France

Paper type Research paper

An executive summary for managers and executive readers can be found at the end of this article.

Introduction

Since the 1970s, pro-environmental behavior has been a major topic of interest for researchers, essentially in the fields of social psychology and marketing. The key objective is to identify the determinants of environmentally friendly behavior. In that framework, a large number of studies focused on environmental concern as the main motivation for ecological behavior, even though empirical evidence highlights a disappointing relationship between general environmental attitudes and specific behaviors (Hines *et al.*, 1986/1987; Bamberg, 2003). Other interesting cognitive determinants were also examined (i.e. beliefs, values, personal and social norms, knowledge, etc.), however the role of emotions and affective responses in general has not been sufficiently addressed (Carrus *et al.*, 2008).

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This research aims at developing previous academic works dealing with the effect of emotions, and particularly anticipated guilt, on environmentally-friendly behaviors. More specifically, we propose to focus on recycling behavior among the French. The relevance of "recycling as a marketing problem" (Shrum *et al.*, 1994) was acknowledged long ago, whether one considers recycling as a consumer behavior, or from the stance of policymakers' interventions and advertising. As for the context, France appears to be lagging behind other European countries in terms of waste management. In Europe, indeed, substantial differences exist between countries regarding the issue of recycling. For instance, countries like Austria and Germany have significantly higher overall recycling rates (over 65 percent in 2006) than countries like Italy and France (around 55 percent) (ADEME, 2009). Even if the amount of waste produced by a French (543 kg in 2008) is only slightly above the European average (524 kg) (Eurostat, 2008), according to the French Environment and Energy Management Agency the volume of waste has doubled in forty years and waste incineration and storage are becoming more and more complicated. Despite substantial improvements in public awareness and behavior, extensive efforts still need to be made. In that context (where recycling is not compulsory), improving the understanding of what motivates people to recycle their solid waste is an important issue for public authorities.

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In order to understand differences in recycling behaviors, this exploratory research proposes a typology of respondents based on anticipated guilt and other variables related to recycling identified thanks to qualitative study. Intuitions emerging from the cluster analysis were tested quantitatively and a predictive model of intention to recycle was finally proposed.

1. Research background and objectives

1.1 Guilt, anticipated guilt and behavior change

Guilt can be either conceptualized as a personality trait, i.e. an individual's predisposition which finds expression in a general tendency to feel guilty, or as an emotion, referring to a temporary state ("guilt trait" vs "guilt state"; Lascu, 1991). This research focuses exclusively on the latter approach. In that framework, guilt is generally defined as a negative and unpleasant state occurring when one's behavior or intentions are in contradiction with one's moral standards (Baumeister *et al.*, 1994) or violate well-established social standards (Kugler and Jones, 1992).

Huhmann and Botherton (1997) synthesized previous works on the concept and identified three main types of guilt differing in terms of the reasons leading to the "experience of guilt": reactive guilt occurs when the internalized norms regarding what makes a behavior acceptable were infringed, existential guilt occurs when the individual feels more privileged or more fortunate than others, and anticipatory guilt refers to the anticipation of a feeling one might experience when they contemplate violating their personal standards. This anticipation provides an opportunity to avoid the unpleasant emotion linked to transgression. In practice, the two main forms that are generally contrasted are reactive and anticipated guilt, following Rawlings' (1970) original distinction.

Many authors deplored the scarcity of research dealing with the influence of guilt on behavior (e.g. Lascu, 1991; Baumeister *et al.*, 1994; Dahl *et al.*, 2003). As a result, little knowledge is available about the effects of anticipated guilt (Massi Lindsey *et al.*, 2007). Yet, a number of studies provided evidence that guilt (and its anticipation) shapes behavior (or behavior intention) and it has been acknowledged that people tend to avoid behaviors they anticipate will make them feel guilty (e.g. Lindsey, 2005; Baumeister *et al.*, 1994). Among the types of behavior studied, guilt was found to influence ethical behavior (Steenhaut and Van Kenhove, 2006), charitable donations (Basil *et al.*, 2006; Hibbert *et al.*, 2007), bone marrow donation (Lindsey, 2005) etc.

The notion of guilt started to draw the attention of researchers in the field of marketing essentially in the 1980s and 1990s. Based on the idea that negative emotions can stimulate the adoption of certain behaviors, scholars proposed to extend existing knowledge on the effects of fear appeals, in order to explore the opportunity of guilt as a persuasion tool (Lascu, 1991; Huhmann and Botherton, 1997). In the main, a number of studies confirmed the efficiency of guilt appeals in advertising persuasion techniques (e.g. Steenhaut and Van Kenhove, 2006; Hibbert *et al.*, 2007; Burnett and Lunsford, 1994; Coulter and Pinto, 1995).

1.2 Guilt, prosocial behavior and ecological behavior

It is generally recognized that guilt involves a social dimension (e.g. Parkinson and Illingworth, 2009; Baumeister *et al.*, 1994) and that altruistic behaviors are sometimes performed only to reduce a feeling of guilt (Rawling, 1970). Previous research showed indeed that guilt influences prosocial behavior positively (e.g. Lindsey, 2005). However, few studies tackled specifically the question of the impact of guilt on ecological behavior, or the issue of behavior change in favor of an environmentally responsible alternative due to the anticipation of a feeling of guilt. Yet, pro-environmental behavior can be regarded as a pro-social behavior in the sense that the effects of such behavior mainly benefit others. As a matter of fact, behaviors that are driven by pro-environmental motivations are generally "future oriented and unlikely to benefit directly the person performing the behavior" (McCarty and Shrum, 2001).

Among the researchers who examined the role of guilt in the context of pro-environmental behavior, Hunecke *et al.* (2001) followed by Bamberg *et al.* (2007) considered the effect of feelings of ecological guilt to explain travel mode choice behaviors and found it to be a relevant predictor of personal environmental norms. In the first case, however the concept is not clearly defined and seems to be tackled as reactive guilt, while in the second the authors explicitly mention anticipated guilt.

1.3 A focus on recycling behaviors

The choice of the ecological behavior to study is crucial since some so-called environmentally friendly behaviors are in fact performed for non-ecological reasons. For instance, energy conservation might be motivated by the financial economy implied, purchasing of non-toxic detergents or organic food might be carried out for health-related motivations etc. This study focuses on recycling because such behavior implies personal costs in terms of effort and time and does not benefit the individual directly (Smith *et al.*, 1994). Since the possible egocentric motivations inferred are less obvious, one can assume that the pro-environmental motivation is more genuine. Research dealing with motivations to recycle found that recycling was indeed influenced by altruistic values and satisfaction from frugality among other motives (Granzin and Olsen, 1991).

Academic studies aiming to understand what motivates pro-environmental behavior are generally articulated around three main approaches (Steg and Vlek, 2009). The first line of research is based on a costs/benefits approach where individuals are driven by rational motivations. Most studies sharing this view are often relying on cognitive models such as the Theory of Reasoned Action (TRA, Fishbein and Ajzen, 1975) or its extended version, the Theory of Planned Behavior (TPB, Ajzen, 1991). According to the second line of research, ecological behavior is rather stirred by moral and normative considerations. One of the most famous theories used in this context is Schwartz's (1977) Norm Activation Model (NAM) which suggests that pro-social behavior is motivated by altruism. And finally, the third approach examines the impact of affective motivations on the adoption of environmentally friendly behavior, but as mentioned earlier, such research remains quite marginal.

The literature dealing with the determinants of recycling is consistent with the broader framework on ecological behavior and uses mainly TRA or NAM related approaches

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(Thogersen, 1996). In order to predict recycling intention, TRA and TPB models are often extended, including variables like past behavior (e.g. Carrus *et al.*, 2008), perceived lack of facilities (e.g. Knussen *et al.*, 2004), perceived consequences of recycling (e.g. Chen and Tung, 2010) etc. The level of knowledge also emerges as an important variable to discriminate between recyclers and non-recyclers (Vining and Ebreo, 1990).

Studies examining the influence of affective variables on recycling behavior are rather scarce. Among those who did, Carrus *et al.* (2008) highlighted a positive and significant effect of anticipated negative emotions on recycling. However, they used an aggregated measure including nine different emotions and did not analyze the independent effect of each specific emotion. Finally, Smith *et al.* (1994), did not focus on anticipated guilt specifically, but they nevertheless concluded that the link between pro-environmental attitude and behavior is often disappointing because altruistic behaviors like recycling are influenced by affective responses which are not totally grasped by attitudinal measures.

The purpose of this research is to explore the role of anticipated guilt in the adoption of recycling behaviors. To do so, we propose to conduct a cluster analysis in order to classify consumers depending on whether they anticipate a guilt feeling when contemplating not to recycle in the near future and other recycling-related variables that will be identified thanks to a preliminary qualitative phase. Insights emerging from the typology will then be backed up with further quantitative tests. Finally, based on the nature and scope of the influence of anticipated guilt, we will be able to discuss if guilt appeals would be relevant to encourage such behaviors.

2. Research methodology

2.1 Preliminary step: selection of the variables for cluster analysis

In order to identify the variables relevant to distinguish profiles related to this specific behavior, a focus group was carried out among 8 respondents with the following question: "What are the main differences between individuals who recycle on a regular basis, and those who do not?" In the perspective of a typology, the instruction was voluntarily formulated so as to elicit discrepancies between recyclers and non-recyclers. Instead of asking what could motivate recycling as a general rule, the idea was to lay emphasis on factors that are likely to discriminate between opposite profiles.

Once they established a comprehensive list of all the possible motivations, respondents were asked to select a short list of the variables they believed to be the most relevant. Their conclusion was that contrary to non-recyclers, people who do recycle assiduously "care about the environment", "live in a place where waste-sorting facilities are available", and "are aware that not sorting harms the environment". As a result, three variables were retained for the quantitative study, namely: environmental concern, perceived facilitating conditions, and awareness of negative consequences. Anticipated guilt, which is the central variable studied in this research, and current recycling behavior were also included in order to compute the cluster analysis.

2.2 Quantitative data collection

Data collection took place in October 2010 among 276 respondents living in France. The questionnaire was administered through an online survey. This method allowed to reach people living in various locations all over the country. The option of an online survey was also preferred to an interviewer-administered questionnaire in order to avoid the emergence of a social desirability bias due to the presence of the interviewer (see Table I).

2.3 Construct measurement

Awareness of negative consequences (ANC) was measured with three items inspired by previous work by Stern *et al.* (1995) who apprehended the concept as the "consequences of environmental conditions for self, for others, and for nonhuman species". Items were adapted to our research topic and were used to measure the perceived harmful effects of the increase of waste volume due to non-recycling at three levels: the individual, the country as a whole and vegetal and animal species.

Perceived facilitating conditions (PFC) were captured with two items measuring respondents' beliefs about public authorities' efforts in their municipality of residence to implement the necessary facilities and encourage people to recycle.

Anticipated guilt (AG) was measured with a three-item scale. The idea of a "feeling of ecological guilt" was already measured in previous research (e.g. Hunecke *et al.*, 2001), but in our context we had to adapt items in order to measure the anticipation of such a feeling. More specifically, we were seeking to measure the anticipation of a feeling of guilt that individuals might experience if they failed to recycle in the near future. In order to make things more realistic we assumed that taking "the next three months" as a reference would push respondents to project themselves into a concrete and credible situation.

Environmental concern (EC) was measured with an eight-item scale proposed by Bamberg (2003). Originally created by Preisendorfer (1996, in Bamberg, 2003) and translated from German by Bamberg, this scale was chosen because it was designed and used in a European context. Moreover, it apprehends environmental concern as a one-dimension concept referring to a general attitude toward environmental

Table I Sample characteristics

	Percent
Gender	
Male	41
Female	59
Age	
≤25	16
26-35	51
36-45	13
>45	20
Place of residence	
City centre	49
Suburbs	34
Rural area	17
Dwelling type	
Apartment	63
Individual house	37

issues, which was the conceptualization inferred from the qualitative study. Principal component analysis, however, led to remove three items which were associated with low communalities (<0.5). The five remaining items account for 64 percent of the total variance. Confirmatory factor analysis using the maximum likelihood method reveals that the model is properly adjusted to the data (CFI = 0.992; AGFI = 0.956; RMSEA = 0.058; $Chi^2/df = 1.92$). The scale is reliable (see Table II) and shows an acceptable convergent validity (rho = 0.56).

Finally the questionnaire included an item about current behavior (CB), intention to recycle during the next three months and the usual demographic and socio-economic characteristics. All responses were collected thanks to a seven-point Likert scale except for current behavior which was binary ("Do you currently recycle all your waste systematically?" Yes/No).

2.4 Approach used for cluster analysis:

The cluster analysis was computed based on standardized factor scores. Given our sample size a partitional method using k-means clustering was preferred to a hierarchical agglomeration method. In order to determine the optimal number of clusters, we examined the evolution of within-cluster distance and dispersion, number of cases in each cluster, and most importantly, the relevance of profiles interpretability.

3. Findings

3.1 Cluster analysis

The procedure mentioned above led us to retain three clusters. The ANOVA test was significant for all the five variables, meaning that the three groups have different characteristics on these criteria (see Table III).

The first group is characterized by low to very low scores (in comparison to the whole sample and to other clusters) on all the variables. On the contrary, individuals belonging to the second group are characterized by high scores on all the variables considered. The first cluster only accounts for 15 percent of the whole sample while the second accounts for almost 48 percent which is not very surprising given that environmental attitudes and behavior are subject to social desirability. The third cluster represents 37 percent of the whole sample and shows more ambivalent attributes. Individuals in this group are equally concerned about the environment and equally aware of the negative consequences than individuals in the second group (Respectively, mean difference between cluster 2 and 3 = −0.199; $p > 0.05$ and −0.124; $p > 0.05$). However, their levels of perceived facilitating conditions are low and similar to those of the individuals in the first group (mean difference between cluster 3 and cluster 1 = −0.051; $p > 0.05$). Moreover, their level of anticipated guilt is low compared to the average level, significantly lower than individuals in group 2 but significantly higher than people in group 1. Finally, the proportion of people who currently recycle in this group is very low, even lower than in cluster 1 (3 percent recycle systematically vs 27 percent in cluster 1; $p < 0.05$).

This means that individuals with similar levels of environmental concern and similar levels of awareness of negative consequences do not behave similarly. Differences in behavior seem to be due to differences in perceived facilitating conditions and anticipated guilt.

3.2 Testing relationships between the variables

Correlation analysis shows that intention to recycle during the next three months is significantly correlated to EC, ANC, PFC and AG. The highest correlation is between anticipated guilt and intention ($r = 0.663$; $p < 0.001$). All these variables are also significantly linked to each other except for environmental concern and perceived facilitating conditions ($r = 0.082$; $p > 0.05$). Multiple regression analysis with intention as the dependent variable and all the four others

Table II Measurement scales

Construct/items	Factor loadings
Environmental concern (Cronbach's $\alpha = 0.85$)	
Thinking about the environmental conditions our children and grandchildren have to live under, worries me	0.83
When I read newspaper articles about environmental problems or view such TV-reports, I am indignant and angry	0.85
If we continue as before, we are approaching an environmental catastrophe	0.81
It is still true that politicians do far too little for environmental protection	0.73
For the benefit of the environment we should be prepared to restrict our momentary style of living	0.75
Anticipated guilt (Cronbach's $\alpha = 0.93$)	
I would feel guilty if I did not recycle on a daily basis during the next three months	0.93
My conscience would bother me if I did not recycle on a daily basis during the next three months	0.95
I would have a bad conscience toward the environment if I did not recycle my waste on a daily basis during the next three months	0.92
Awareness of negative consequences (Cronbach's $\alpha = 0.87$)	
The increase of waste volume is a problem which is likely to have serious repercussions for me and my family	0.86
The increase of waste volume is a problem which is likely to have serious repercussions at the country level	0.93
The increase of waste volume is a problem likely to have serious repercussions for animal and vegetal species	0.88
Perceived facilitating conditions (Cronbach's $\alpha = 0.82$)	
My municipality of residence has made available all the necessary facilities in order to facilitate waste recycling	0.92
My municipality of residence is trying its best to encourage its inhabitants to recycle their waste	0.92

Table III ANOVA test, mean and standard deviation for the three clusters identified

	ANOVA		Cluster 1 ($n = 42$)			Cluster 2 ($n = 132$)			Cluster 3 ($n = 102$)		
	F	Sig.	Mean	SD		Mean	SD		Mean	SD	
EC	133.14	0.000	−1.642	1.029	−−	0,.382	0.626	++	0.182	0.683	+
ANC	175	0.000	−1.766	1.131	−−	0.375	0.551	++	0.251	0.540	+
PFC	11.97	0.000	−0.246	0.998	−	0.285	0.945	+	−0.297	0.977	−
AG	98.57	0.000	−1.120	0.978	−−	0.612	0.564	++	−0.375	0.900	−
CB	679.30	0.000	−0.566	0.861	−	0.942	0.174	++	−0.983	0.343	−−
Profile interpretation			*«The apathetic»* Absolute non-recyclers			*«The converted»* Convinced recyclers			*«The undecided»* Potential recyclers		

Notes: EC: Environmental concern; ANC: Awareness of negative consequences; PFC: Perceived facilitating conditions; AG: Anticipated guilt, CB: Current behavior. +/−: high/low scores in comparison to the rest of the sample

as independent variables highlights a satisfactory model with $R^2 = 0.723$. All the regression coefficients are significant except for environmental concern (see Table IV). This result is consistent with conclusions stemming from the literature and suggests that the impact of environmental attitudes on intention is indirect. Variance Inflation Factor (VIF) scores as well as Tolerance scores were used to diagnose multicollinearity, which appeared to be acceptable.

Numerous iterations permitted to observe that the effect of environmental concern on intention to recycle is always significant unless AG is included in the model. Following Baron and Kenny's (1986) recommendations, we tested a mediator effect of anticipated guilt in the relationship between environmental concern and intention, which was confirmed (Figure 1). Anticipated guilt also mediates the link between awareness of negative Consequences and intention; however this mediation is partial while it was a total mediation for EC/ intention (Figure 2).

Finally, insights emerging from the results of cluster analysis suggest that individuals who do not recycle do not anticipate feelings of guilt associated with non recycling and believe that not much is done to encourage them to recycle. Successive regression analyses showed that perceived facilitating conditions influences positively anticipated guilt and intention and that the effect of perceived facilitating conditions on intention is attenuated when anticipated guilt is controlled, indicating once again a partial mediation of AG (Figure 3).

Given the acknowledged limitations of the method used above (MacKinnon *et al.*, 2002), further tests using a more robust method were required in order to validate the three mediation effects. Because of its superiority, the Bootstrap procedure was chosen (Shrout and Bolger, 2002).

Figure 1 Tests for the mediating role of AG between environmental concern and intention to recycle

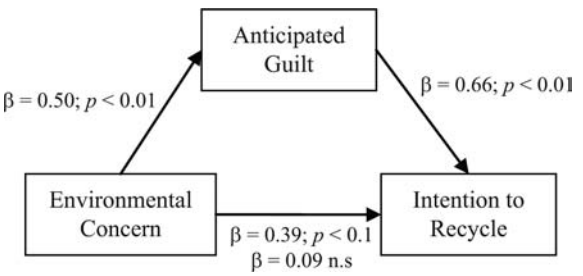
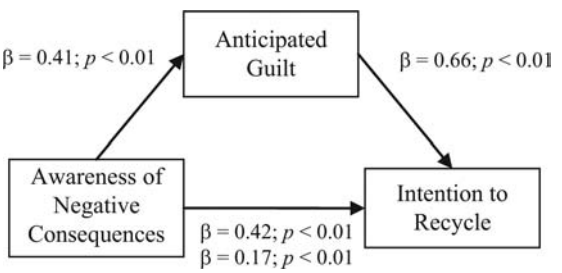


Figure 2 Tests for the mediating role of AG between awareness of negative consequences and intention to recycle



As shown in Table V, all the mediation effects appeared to be significant. Anticipated guilt totally mediates the relationship between environmental concern and intention to recycle, while it partially mediates the relationships between awareness of negative consequences and intention to recycle, and

Table IV Regression analysis using intention to recycle as the outcome variable

	Unstandardized coefficients		Standardized coefficients			Collinearity statistics	
Independent variables	**B**	**Std error**	**Beta**	**t**	**Sig.**	**Tolerance**	**VIF**
(Constant)	0.007	0.042		0.161	0.872		
EC	0.048	0.058	0.048	0.840	0.402	0.530	1.885
ANC	0.130	0.054	0.131	2.398	0.017*	0.588	1.702
PFC	0.261	0.045	0.262	5.843	0.000**	0.875	1.143
AG	0.496	0.051	0.499	9.656	0.000**	0.661	1.513

Notes: * Significant at the 0.05 level; ** significant at the 0.001 level

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Figure 3 Tests for the mediating role of AG between perceived facilitating conditions and intention to recycle

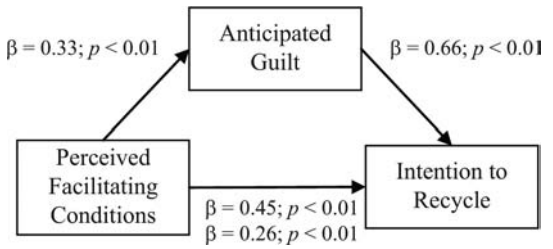
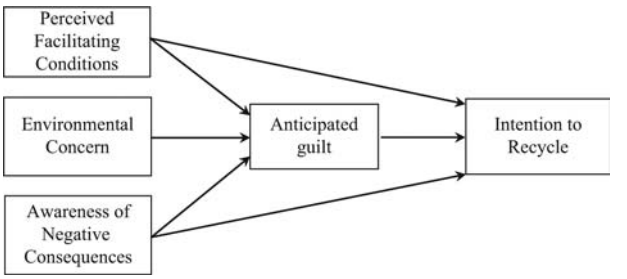


Figure 4 Predictive model of intention to recycle



between the perceived facilitating conditions and intention to recycle. These conclusions led to propose the following predictive model of intention to recycle (Figure 4).

4. Summary and discussion

The aim of this research was to explore the effect of anticipated guilt on intention to recycle. A typology was developed based on participants' recycling behavior, anticipated guilt, environmental concern, awareness of the negative consequences related to non-recycling, and perceived facilitating conditions. Three typical groups were identified and led to conduct further tests revealing that anticipated guilt plays a crucial mediator role between intention to recycle and its antecedents.

Our findings hold interesting implications for the literature dealing with environmental behavior. First, they confirm the idea that environmental concern conceptualized as a general attitude influences pro-environmental behavior indirectly rather than directly. This indirect effect has often been proposed to account for environmental attitude/behavior inconsistencies and was even empirically validated (e.g. Bamberg, 2003). However proposed mediators are often specific attitudinal or normative variables. This research suggests that the relationship between environmental concern and recycling behavior could be mediated by affective variables, specifically anticipated guilt.

Second, in line with Steenhaut and Van Kenhove (2006) who found that AG mediates ethical beliefs/ethical intentions relationship, we also found a positive mediator effect of AG between awareness of negative consequences associated with non-recycling and intention to recycle.

Third, AG also appeared to mediate the link between perceived facilitating condition and intention to recycle. This finding is interesting since it shows that guilt can be activated by situational factors. Previous research examined the effect of perceived lack of facilities as a moderator of the relationship between TPB constructs and intention to recycle (Knussen *et al.*, 2004; Chen and Tung, 2010). In our case, it is not the lack but rather the availability of such facilities as well as the perception of an effort from public authorities that was examined as an antecedent of anticipated guilt. The idea is that the more the facilities, the guiltier individuals would feel about not recycling.

In terms of limitations and future perspectives, the typology proposed in this research focuses exclusively on personal predispositions and perceptions rather than on objective and situational factors. Future research could extend this typology to other categories of variables and other pro-environmental behaviors. Moreover, our results are specific to the French context and may not be generalized to countries where recycling is mandatory or countries where recycling is a deeply internalized behavior due to curbside recycling programs adopted years ago. Finally, future studies should test the effect of guilt appeals in advertisements on audience intention to recycle or to engage in any specific pro-environmental action, using an experimental design.

Table V Test of the mediation effect of AG in the relationship between the three independent variables and intention to recycle using a bootstrap method

Independent variable		Paths a	b	c	c′	Sobel statistic	Confidence interval of indirect effect Lower	Upper	Conclusion
EC	Coeff	0.499	0.613	0.399	0.093	7.435**	0.218	0.402	Total mediation
	t	9.492**	11.883**	7.225**	1.794				
ANC	Coeff	0.669	0.524	0.603	0.252	6.502**	0.24	0.453	Partial mediation
	t	7.631**	12.322**	7.763**	3.658**				
PFC	Coeff	0.356	0.511	0.431	0.249	5.389**	0.112	0.269	Partial mediation
	t	5/918**	12.886**	8.547**	5.866**				

Notes: * Significant at the 0.05 level; ** significant at the 0.001 level; a: independent variable/anticipated guilt; b: anticipated guilt/intention to recycle; c: direct effect, c′:direct effect when including anticipated guilt

5. Managerial implications and applications

In terms of public authorities' interventions and advertizing, this research implies that guilt appeals would be relevant to push people into recycling more meticulously. One possible way to proceed would be to emphasize the negative consequences related to inaction, on both the environment and the individual's self-esteem. However, such practices should be used with caution since previous research showed that low and moderate levels of guilt appeals can be effective in advertising while high levels can provoke anger and therefore discredit the message (Coulter and Pinto, 1995).

Furthermore, promoting recycling through guilt appeals could have opposite effects if people believe they are not provided with the necessary devices to act ecologically. This idea was evoked in the qualitative study:

> In my municipality there are no centers for waste treatment. Only glass is actually recycled. People's efforts to recycle are in vain. All this noise about yellow trash containers... Policymakers have the impression of doing what is needed and voters get rid of their guilty conscience by putting their small bag in a yellow rubbish bin.

Our findings show indeed that people who do not believe they are encouraged to recycle and who do not anticipate a very strong feeling of guilt related to not recycling their waste tend not to recycle. As mentioned earlier, participants belonging to cluster 3 ("the undecided") are currently even more reluctant to recycle that those in cluster 1 ("the apathetic"). But interestingly, mean comparison regarding intention to recycle in the future indicates that potential recyclers (C3) express significantly stronger intentions to recycle than absolute non-recyclers (C1). This indicates that potential recyclers, who do not currently recycle because they believe that public authorities are not making the necessary efforts, are willing to change their behavior if they feel they are encouraged in that direction with more appropriate facilities. As a consequence, public organizations should communicate in order to make citizens aware of the measures implemented. This would influence citizens' behavioral intention either directly or through the activation of an anticipated feeling of ecological guilt.

Finally, Koestner *et al.* (2001) suggest that recycling because of guilt implies unstable attitudes and behavior and that "recyclers must feel that they are doing it because it is personally important and related to their values, not because they feel guilty" otherwise their beliefs can easily be challenged by other people's influence. This idea is sensible, however it can be argued that recycling to avoid feeling guilty and to comply with social pressure can be a first step towards more sustainable behaviors. Bamberg *et al.* (2007) showed indeed that the perception of a pro-environmental social norm could provoke anticipated guilt, but persisting social norms can progressively transform into personal norms through the process of internalization (Kelman, 1961). Thus, public authorities can focus on the social dimension of recycling in the perspective that individuals internalize this norm eventually.

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About the author

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Executive summary and implications for managers and executives

This summary has been provided to allow managers and executives a rapid appreciation of the content of this article. Those with a particular interest in the topic covered may then read the article in toto *to take advantage of the more comprehensive description of the research undertaken and its results to get the full benefits of the material present.*

Growing consumer apprehension about environmental welfare over several decades has prompted marketing attempts to identify factors which prompt ecologically-friendly behaviors.

Concern for the environment has been the focus of much research but other determinants have also been explored. Among these are consumer beliefs, values and knowledge, together with personal and social norms.

In this area, guilt is of particular interest. The construct is alternatively regarded as a personality trait or as an emotion. The first instance reflects "a general tendency" to feel guilty, whereas the second is seen as a temporary state. In the current study, the emphasis is on the latter where guilt is perceived as "negative and unwelcome" and triggered when an individual's intended or actual behavior conflicts with his or her moral code. This state can also emerge when conventional social standards are debased.

In the opinion of certain academics, three types of guilt prevail. These have been labeled existential guilt, reactive guilt and anticipatory guilt. Evidence suggests that the reactive and anticipatory types are the most common. Infringement of "internalized norms" concerning behavior acceptability leads to reactive guilt, while the anticipatory form reflects the expectation of feeling guilty when a violation of personal standards is contemplated.

Anticipated guilt has received little scholarly attention overall. However, some evidence points to people avoiding

behaving in ways for which subsequent guilt is expected. Other research shows a positive relationship between guilt and ethical behavior, giving to charity and bone marrow donation. Marketing awareness that the exploitation of negative emotions can inspire desired responses has resulted in the successful use of fear appeals as a persuasive technique.

The social dimension of the guilt construct is widely acknowledged. This suggests that social conscience is a likely motivator of some altruistic behaviors. Although studies support this notion, few have specifically addressed the relationship between guilt and behaviors affecting the environment. Investigations into "travel mode choice" did find that guilt impacted on personal behaviors.

An important consideration is the fact that reasons which are not ecologically-related can drive certain behaviors. Cost and health are examples of such reasons that might be respectively associated with energy conservation or food purchases. Recycling is considered somewhat unique since engaging in such activities typically has no direct benefit for those involved. Consequently, there is an assumption that the desire to help the environment is authentic is this situation. Some empirical evidence exists to corroborate this belief.

When striving to ascertain motivations for environmentally-conscious behavior, scholars have adopted three main approaches: cost/benefits, altruism and affective. However, consideration of the impact of emotions and affective responses has been minimal in comparison with the other two.

Despite the rarity of appropriate studies, some analyst found that "anticipated negative emotions" have a strong positive impact on recycling behavior. Nine different emotions were examined, although the impact of each emotion individually was not determined. This study nevertheless acknowledged the role of affective responses in influencing recycling behaviors.

These issues were explored in a survey of French consumers. France was chosen because its waste management performance remains inferior to many other European nations, despite raised public awareness and other significant improvements. Prior to the main study, a focus group was convened to identify attributes most likely to motivate recycling behavior. Environmental concern, perceived facilitating conditions (having access to waste-processing facilities) and awareness of negative consequences were the variables selected, along with anticipated guilt. An online survey was used to eliminate the potential for social desirability bias and 276 responses were obtained from various locations in France. Questions related to current behavior and intention to recycle during the forthcoming three months. Demographic and socio-economic details were also requested.

Data analysis prompted the authors to cluster respondents into three groups:

1 low or extremely low scores on all variables and 15 percent of the sample;
2 accounts for 48 percent of respondents and scores high on all variables; and
3 a less certain profile of a group which represents 37 percent of the survey.

Levels of environmental concern and awareness of negative consequence mirrors the second group. Similar to group one for perceived facilitating conditions but anticipated guilt rates lower than average and between the two other groups. The lowest number of recyclers found in group three.

A significant conclusion to emerge from this is that recycling behavior is likelier to be influenced more by access to recycling facilities and anticipated guilt. In contrast, behavior will not necessarily be alike among those whose environmental concern and awareness of negative consequences is similar.

Elgaaied also revealed correlation between intention to recycle within the next three months and all the other four variables. The relationship was strongest with anticipated guilt. An indirect impact of environmental attitudes on intention was also found. Further exploration revealed that:

- Anticipated guilt mediates the relationship between environmental concern and intention.
- The connection between awareness of negative consequences and intention is partially mediated by anticipated guilt.
- Anticipated guilt partially mediates the link between perceived facilitating conditions and intention.

In the author's opinion, the latter suggests that people who do not recycle do not feel guilty because they believe not enough is done to encourage them to engage in such behavior. It also indicates that "situational factors" possess the capacity to elicit guilt and sends the message that increasing the availability of recycling facilities would accordingly make people feel more guilty if they do not recycle.

On this evidence, public bodies are advised to use "guilt appeals" in an effort to increase recycling behavior. Highlighting how inaction negatively impacts on both the environment and consumer self-esteem is a suggested approach. Overkill poses a risk that the strategy will backfire, as Elgaaied recognizes. The likely outcomes of this are consumer annoyance and a discredited message. Caution is likewise advised about using guilt appeals to target those who believe they lack access to recycling facilities. The important task here is to implement measures and communicate this effectively to individuals affected. Another recommendation is for public authorities to emphasize how recycling benefits society. The rationale is that the process of internalization means that social norms can ultimately become personal norms too.

In future, an experimental design might be used to further investigate how advertisements using guilt appeals impact on consumer intention to participate in recycling or other specific pro-environmental activities.

(A précis of the article "Exploring the role of anticipated guilt on pro-environmental behavior – a suggested typology of residents in France based on their recycling patterns". Supplied by Marketing Consultants for Emerald.)