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Why Do People Fail to Adopt Environmental Protective Behaviors? Toward a Taxonomy of Environmental Amotivation¹

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Individuals' reasons for their lack of motivation toward environmental protective behaviors were proposed: amotivation because of strategy, capacity, effort, and helplessness beliefs. Confirmatory factor analyses and correlations between the four types of amotivation and constructs related to the environment supported the validity of the constructs. A structural model in which helplessness beliefs could be predicted by the other sets of beliefs, and wherein strategy and ability beliefs resulted from effort beliefs, was tested. All estimated parameters were significant, with the exception of one link: amotivation because of effort beliefs did not display a significant relationship with helplessness beliefs. The importance of understanding why individuals may be amotivated and the strategies liable to help reduce their lack of motivation are discussed.

Over the last two decades, people have become more and more aware of the declining state of the environment and, as a consequence, have shown an increased interest in environmental issues. However, despite this growing interest, recent opinion polls indicate that a large proportion of people remain inactive with respect to environmental protective behaviors (Angus Reid Group, 1992; Gallup & Newport, 1990). For instance, a survey conducted among 1,000 Canadian households indicated that 34% of the respondents *rarely* or *never* considered environmental issues in the purchase of food products, whereas 50% *sometimes* took environmental issues into account when purchasing food products, and only 15% *always* considered environmental issues when purchasing food (Statistic Canada, 1994). Similarly, another survey from Statistic Canada (1992) indicated

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that only 17% of Canadian households used compost as fertilizer at home, or pick-up services offered by the city (e.g., collection of leaves or residue from lawn mowing).

In a review of earlier research and the description of several recent studies on recycling, Oskamp (1995) indicated that about 40% of people recycle when they have access to a curbside recycling program. This number drops to less than 10% when people indicate that they do not have access to any recycling program. An interesting aspect of the respondents surveyed is that their specific knowledge about the requirements of a recycling program was high ($M = 8.1$ out of 9 possible recyclable items; Oskamp, 1995).

Research on environmental issues has been mainly interested in the factors leading people to adopt specific environmental behaviors. For example, many studies have focused on the predictors of recycling behaviors (for literature reviews, see Dwyer, Leeming, Cobern, Porter, & Jackson, 1993; Geller, Winett, & Everett, 1982), responsible consumption patterns (Cook & Berrenberg, 1981; De Young, 1986a, 1986b), and the purchase of environmentally friendly products (Alwitt & Pitts, 1996).

Among the various variables that have been examined in order to gain a better understanding of the antecedents of environmental behaviors, environmental concern has probably been one of the most studied variables (e.g., Maloney & Ward, 1973; Oskamp et al., 1991; Van Lière & Dunlap, 1980; Weigel & Weigel, 1978). This broad attitude has been found to be a significant mediating variable between different personal characteristics (e.g., being young, well educated, and politically liberal) and various environmental behaviors (Milbrath, 1984). However, it has also been observed that the relationships between different types of environmental concerns and behaviors were frequently affected by several situational (e.g., prompts, removing barriers, providing rewards) and personal factors (e.g., personality, demographics, degree of feeling of self-efficacy, personal control, optimism; Oskamp, 1995; Oskamp et al., 1991).

The study of environmental knowledge is another avenue of interest in the investigation of environmentally responsible behaviors. Environmental information has generally been found to be moderately related to environmental attitudes and behaviors. The strength of this relationship increases as the information gains in specificity with respect to the targeted environmental behavior (Chaiken & Stangor, 1987). For example, behaviors such as recycling, conserving energy or water, and purchasing ecological products all require specific information about how to perform environmental protective behaviors. In spite of collective efforts to better inform people through all kinds of sources (e.g., textbooks, journals, curriculum guides for environmental education, the media) regarding how they can positively contribute to the preservation and the improvement of environmental quality, people's levels of education remain very low. Why? First, without personal identification with the motives for engaging in environmental

behaviors, people lack the desire to assimilate the relevant information. Second, if they do acquire such knowledge, it does not, by itself, represent a sufficient condition to ensure environmental action.

Many researchers tested interventions designed to modify people's behaviors. These interventions included the use of reinforcers such as monetary incentives, removing barriers by making the behavior more convenient, and using persuasive communication strategies. These strategies have been successful on a short-term basis, but have been inadequate to instill much long-term change (Geller et al., 1982; Katzev & Johnson, 1984; Winett, Leckliter, Chinn, Stahl, & Love, 1985; Witmer & Geller, 1976). Several studies (e.g., Aronson & Gonzales, 1990; DeYoung, 1986b; Wang & Katzev, 1990; Witmer & Geller, 1976) showed that when the rewards were discontinued, the environmental protective behaviors returned to baseline levels. Indeed, rewards typically promote many target behaviors only as long as they are given to reinforce these behaviors. Moreover, it has been demonstrated that rewards can actually have an adverse impact on motivation (Deci, 1975; Deci & Ryan, 1985; Lepper & Green, 1975).

As an alternative to behavioral incentives, De Young (1986b) argued that intrinsic motivation was liable to be a long-term predictor of environmental behaviors. Results of his studies (De Young, 1986b, 1989) indicate that intrinsic and self-determined motives, such as personal satisfaction (i.e., feeling good about doing something for the environment), being frugal (i.e., avoiding wasteful practices), being self-sufficient, and participating in a program where one's actions can be seen to make a difference were significant incentives for recycling.

Other researchers (McKenzie-Mohr & Oskamp, 1995; Milbrath, 1984) have proposed the concept of sustainable change as something similar to the concept of intrinsic motivation, as defined by De Young (1986b, 1989). These authors emphasize the fact that there is a series of barriers that inhibit responsible environmental behaviors and that those barriers are highly embedded in the context of our culture. A first step toward the promotion of lasting responsible environmental behaviors is to enhance people's understanding of how they can surmount those barriers by changing the way that they think and act toward the environment. Although knowledge alone is not sufficient to produce action, these authors suggest that it is a prerequisite for action.

In line with the works of De Young (1986b, 1989) and McKenzie-Mohr and Oskamp (1995), Pelletier and his colleagues (Pelletier, Tuson, Green-Demers, Noels, & Beaton, 1998) have developed and tested a measure of people's motivation for environmentally responsible behaviors, the Motivation Toward the Environmental Scale (MTES). The MTES is based on Deci and Ryan's (1985) theory of self-determination, which distinguishes between intrinsic motivation, types of self-determined extrinsic motivation (integrated and identified regulation), types of non-self-determined extrinsic motivation (i.e., introjected and

external regulation), and amotivation. These authors suggest that when individuals are self-determined, they have integrated the regulation of environmental behaviors. They act out of personal choice and interest. Their behaviors are maintained even in the absence of external incentives or in the presence of external barriers. For example, Green-Demers, Pelletier, and Ménard (1997) observed that self-determined types of motivation (i.e., intrinsic motivation, integrated, and identified regulation) displayed the highest relations with the frequency of different types of environmental behaviors. The magnitude of the relationships gradually decreased and, eventually, became negative as the motivational types grew less self-determined. Moreover, the strength of the relationship between self-determination and environmental behaviors increased with the level of difficulty of environmental behaviors. That is, although easy environmental behaviors (e.g., recycle newspapers) were predicted by relatively low levels of self-determination, more difficult behaviors (e.g., educating oneself regarding environmental behaviors) were predicted by higher levels of self-determination.

In sum, over the years, researchers have proposed that many factors could increase people's environmental protective behaviors. While some of these research venues appear promising (e.g., the study of self-determined motivation), a number of serious problems remain to be solved. For instance, despite the fact that people report being more concerned about the environmental situation and more aware of the importance of environmental issues, a large number of people remain inactive with respect to environmental protection (De Young, 1989; Finger, 1994; Forester, 1988), and others adopt only a few types of environmental behaviors (McKenzie-Mohr, Nemiroff, Beers, & Desmarais, 1995). Such behaviors are not integrated in their lifestyles and are unlikely to be sustained (Geller, 1995; McKenzie-Mohr & Oskamp, 1995).

While much attention has legitimately been granted to the reasons that foster environmental behaviors, people's reasons for not engaging in those same environmental activities (i.e., environmental amotivation) remain to be investigated. Specifically, the factors at the source of people's motivation for engaging in environmental behaviors may be quite different than the factors underlying environmental amotivation. Thus, a better understanding of the amotivation phenomenon may contribute to clarify the complex dynamic involved in environmental action.

Amotivation for Environmental Behaviors

Amotivation has traditionally been defined as a state in which individuals are not able to perceive a contingency between their behavior and the subsequent outcomes of their behavior (Deci & Ryan, 1985). It is an experience of lack of control that has been compared to learned helplessness (Abramson, Seligman, & Teasdale, 1978). Amotivated individuals are incapable of foreseeing the

consequences of their behavior. They are therefore unable to perceive the motives underlying it. Thus, they constantly doubt their actions and are likely to give up eventually.

In the context of the current study, this general amotivation concept is referred to as *global helplessness beliefs*. Within the context of the environment, we propose that individuals have global helplessness beliefs when they are daunted by the enormity and the severity of the environmental situation. The deterioration of the environment is perceived as an intractable problem. People who are in this state are unable to foresee how their contribution could bring about favorable outcomes on a large scale, and they eschew involvement in environmentally conscious actions.

Moreover, we surmise that individuals could develop helplessness beliefs for different reasons. Thus, although global helplessness beliefs are seen as liable to make a valuable contribution to our understanding of why certain people fail to make some constructive changes in their behaviors, it is proposed that individuals also feel amotivated for more specific reasons. First, they believe that the proposed strategies are not effective in producing the desired outcome. Second, they believe that they do not have the capacity to implement these strategies effectively. Third, although they may think that strategies are effective, or although they may have the capacity to implement these strategies, they may not be able to maintain the effort necessary to execute the behavior or to integrate it into their lifestyles. Therefore, it is argued here that the concept of amotivation can gain in precision when three additional dimensions are considered: amotivation because of strategy beliefs, capacity beliefs, and effort beliefs.

First, *strategy beliefs* stem from Bandura's (1977, 1982) concept of *outcome expectancy*, which refers to a person's perception that a particular course of action will lead to certain outcomes. According to Bandura, motivation is partly rooted in cognition in the sense that most courses of action are initially shaped in thought. It is through the cognitive representation of future outcomes that a person considers adopting certain behaviors. Similarly, Skinner, Wellborn, and Connell (1990) suggested that people have a set of beliefs about *perceived control*, which refers to the expectation that certain strategies are effective in producing the desired outcomes. On the basis of these considerations, we propose that one possible reason for amotivation is the belief that a specific behavior will not be effective in attaining the desired goal. To summarize, strategy beliefs refer to a person's expectancies regarding the extent to which certain strategies are ineffective in producing the desired outcomes.

Second, *capacity beliefs* are derived from Bandura's (1977, 1982) concept of self-efficacy expectancy, and Skinner's (Skinner et al., 1990) contention that individuals have expectations about their capacity to apply different strategies. According to Bandura, the term *self-efficacy* refers to people's belief in their capacity to perform a certain behavior. Studies have revealed that personal goals

are influenced by self-appraisals of capabilities. Moreover, the stronger the perceived self-efficacy, the higher the challenges people set for themselves, and the firmer their commitment to their goals (Bandura, 1991).

Individuals who doubt their efficacy visualize failure scenarios and dwell on the many things that could go wrong. When faced with obstacles and failures, they harbor self-doubts about their abilities, slacken their efforts, and eventually give up. Therefore, in addition to the required skills, action calls for beliefs of personal efficacy. In other words, people may know that a particular course of action would produce a desirable outcome, but may not believe that they have what it takes to successfully carry out the required behaviors. This leads to amotivation. In sum, capacity beliefs refer to people's expectations with respect to their aptitude to perform a certain behavior.

Third, *effort beliefs* refer to the desire to expend the energy required by a particular behavior. In a study on how children's motivation in school can be enhanced, Skinner et al. (1990) found that the cumulation of capacity beliefs and effort beliefs was a necessary antecedent of performance. Specifically, these authors discovered that capacity beliefs were insufficient to produce task involvement. Children also had to believe that they could generate the effort required to carry out the necessary actions, and maintain the effort in the face of difficulties.

Likewise, adults may have trouble performing a behavior if they are unable to sustain the necessary effort or if the behavior is difficult to integrate in their lifestyles. In such circumstances, people may believe that they have the capacity to execute a behavior, and they may also believe that a specific behavior could lead to the desired outcome. However, effort beliefs may create amotivation if they think that they cannot exert the sustained effort required to perform and maintain the behavior.

The purpose of the present study is to construct and validate a scale, the Amotivation Toward the Environment Scale (AMTES), which attempts to measure the four proposed constructs: amotivation because of helplessness beliefs, strategy beliefs, capacity beliefs, and effort beliefs. The current study comprises two stages. In the first stage, the factorial structure of the AMTES is assessed using a confirmatory factor analysis. In the second stage, an additional confirmatory factor analysis is performed on an independent sample to cross-validate the results obtained in the first stage. It is hypothesized that the confirmatory factor analyses will yield four factors, corresponding to the four amotivation subtypes, which will account for a satisfactory portion of the covariance in the sample.

In the second stage, the scale's convergent validity is also assessed using correlations between the different types of amotivation and related psychological and environmental constructs. First, it is hypothesized that the more individuals perceive themselves to be self-determined for environmental behaviors, the less they will be amotivated for the four proposed reasons. Second, it is hypothesized

that perceived competence for environmental behaviors will be negatively associated with all types of amotivation beliefs but predominantly with amotivation because of capacity beliefs. Third, it is hypothesized that the perceived importance of the current environmental situation will not be associated with the different types of amotivation. In other words, we hypothesize that individuals may believe that it is important to do something about the environment but that this belief would not relate to the proposed reasons for their lack of motivation.

Fourth, it is hypothesized that the perceived problems in the local environment and the perceived health risks will be negatively associated with amotivation because of a lack of effort beliefs. These associations were expected since the recognition of the seriousness of environmental problems, and health risks appeared necessary to feel motivated to invest efforts in environmental behaviors. Fifth, in accordance with self-determination theory (Deci & Ryan, 1985, 1991), when the context is perceived as *not* supporting the individual's autonomy, and emphasizes a lack of care for the person and the environment, feelings of amotivation and global helplessness beliefs should increase. Sixth, based on theoretical propositions by Oliver (1997) and research by Andrews and Withey (1976) on satisfaction and well-being, it is hypothesized that satisfaction with the current condition of the environment will be positively associated with a lack of effort beliefs, whereas satisfaction with existing government policies will be negatively associated with a lack of strategy beliefs.

Finally, beliefs that the strategies are inadequate to solve the environmental problem are hypothesized to be positively associated with negative feelings toward the environment (e.g., pessimism). On the other hand, negative feelings about the self in relation to the environment (e.g., shame or guilt) are hypothesized to be positively associated to amotivation because of capacity or effort beliefs.

Also as part of the second stage, relationships between three types of amotivation beliefs (i.e., amotivation because of a lack of strategy, capacity, and effort) and the more general state of helplessness beliefs, are estimated using a structural equation model. We reason that a general state of helplessness beliefs could result from any of the three other types of amotivational beliefs. Then, it is first hypothesized that helplessness beliefs represent a global state that could be predicted by amotivation because of strategy, capacity, and effort beliefs. Second, individuals may develop beliefs that environmental programs are not effective (strategy beliefs), or that they do not have what it takes to manifest environmental behaviors at home, away from home, or at work (capacity beliefs) because the adoption or integration of these behaviors in their lifestyles requires too much effort or sacrifices (effort beliefs). As a consequence, amotivation because of strategy and capacity beliefs is hypothesized to result from amotivation because of effort beliefs. In other words, individuals may feel amotivated toward the environment because they believe that for environmental strategies to work or in

order to feel that they have the capacity to manifest environmental behaviors in different contexts, they must make an effort to change their habits or make sacrifices, something they believe that they cannot do.

Method

Participants and Procedure

The questionnaire package was part of a large project on environmental research. It was distributed by mail to a random selection of 3,000 residents chosen from the telephone directory of the Cornwall area and villages along the shore of the St. Lawrence River, in the province of Ontario, Canada. Participants received the research questionnaire, along with an introduction letter explaining the purpose of the study and instructions for completing the questionnaire. A stamped, pre-addressed return envelope was also included. Participants were asked to return the questionnaire within the following 2 weeks. A reminder was sent 2 weeks after the initial package to encourage participants to complete and return the questionnaire, if they had not already done so. The return rate was approximately 25%.

Following the listwise deletion of missing data, the final sample ($n = 600$) was comprised of 384 men, 210 women, and 6 participants who failed to report their gender. The participants' ages ranged between 18 and 91 years (M age = 49 years), and their household income varied between less than \$24,000 to more than \$200,000 ($M = \$65,000$). The participants' level of education was distributed as follows: high school or less (40.9%), community college (27.6%), some university (13.7%), university degree (12.7%), and postgraduate degree (4.9%). A subsample of 300 participants, who were randomly selected from the total sample, was used in the first stage of the study to establish the factorial structure of the scale. The remaining 300 participants composed the subsample that was used in the second stage of the study to confirm the scale's factorial structure, to ascertain the convergent validity of the scale, and to test the structural model.

Measures

The AMTES. Interviews were conducted with individuals of varying backgrounds to generate an initial pool of reasons as to why people fail to engage in environmentally conscious behaviors. The most frequently reported reasons were then formulated into items that correspond to the definitions of the four subtypes of amotivation. The scale contained 16 items in total, with 4 items per subscale. Items were answered in response to the question "Why are you *not* doing things for the environment?" Items were presented in random order and represented

possible motives for refraining from performing environmental behaviors. Participants were asked to indicate their responses to each item by circling the appropriate number on a 7-point Likert scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*).

The MTES (Pelletier et al., 1998). This scale consists of 24 items measuring people's levels of intrinsic motivation, four subtypes of extrinsic motivation (i.e., external regulation, introjection, identification, and integration), and global amotivation for environmental behaviors (four items per subscale). These subscales correspond to the different types of motivation identified by Deci and Ryan (1985). Items are presented as possible answers to the question "Why are you doing things for the environment?" The items were rated on a 7-point Likert scale ranging from 1 (*does not correspond*) to 7 (*corresponds exactly*). To simplify data analysis, a global Self-Determination Index (SDI) was computed for each participant. This was done by multiplying the participant's score on each subscale by a weight assigned as a function of the position of the subscales on the self-determination continuum (Blais, Sabourin, Boucher, & Vallerand, 1990). That is, the SDI reflects the relative level of self-determination experienced by participants when engaging in environmental behaviors ($\alpha = .92$).

Perceived competence for environmental behaviors. This scale consists of six items ($\alpha = .85$) designed to assess the individual's perceived competence for environmental behaviors (e.g., "I think I can effectively do things to help the environment"; Pelletier et al., 1998). Items were rated on a 7-point Likert scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*).

Perceived importance of the environment. This scale consists of four items designed to assess how important the current environmental situation is to the person ($\alpha = .69$; Pelletier et al., 1998). The scale contains items such as "I feel that the seriousness of the environmental situation has been blown out of proportion" (reverse-coded). Participants were asked to evaluate each statement according to how well it describes their thoughts about the environment. Ratings were made on a 7-point Likert scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*).

Perceived problems in the local environment. A list of 11 items was established to assess how important people consider different problems in their local environment (Pelletier, Hunsley, Green-Demers, & Legault, 1996). The items were generated following a survey of specialists in biology, geography, economy, chemistry, and hydrology involved in the Ecosystem Recovery on the St. Lawrence Project. These specialists were asked to identify items related to the condition of the environment in the Cornwall area (e.g., air pollution from automobile emissions, water pollution by industries, fish loss or degradation of rare habitats). Participants evaluated the importance of each item on a 7-point Likert-type scale ranging from 1 (*not important at all*) to 7 (*very important*). Globally, the scale showed an acceptable level of internal consistency ($\alpha = .88$).

Perceptions of health risks. This scale was composed of 21 items ($\alpha = .92$). Like the items measuring the perceived problems in the local environment, these items were selected following a survey of the multidisciplinary team (e.g., biologists, chemists, epidemiologists) of the Ecosystem Recovery on the St. Lawrence Project (Pelletier, Hunsley, et al., 1996). Each item represented a health threat related to the environmental conditions (e.g., nuclear waste, fish caught in the St. Lawrence River, outdoor air quality). Participants answered each item on a 7-point Likert scale ranging from 1 (*almost no health risk*) to 7 (*high health risk*).

Perception of autonomy support by the government (Green-Demers, Blanchard, Pelletier, & Béland, 1994). This scale was comprised of 10 items to measure people's perceptions that the government encourages and respects their input and initiative, and thus facilitates the development or maintenance of self-determination (e.g., "I feel that the government respects the public's opinion concerning environmental issues"). Items were rated on a 7 point Likert scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*; $\alpha = .64$).

Perceived interpersonal climate (Green-Demers, Legault, Pelletier, & Stewart, 1995). The scale consists of two subscales that measure two different dimensions of interpersonal climate: (a) autonomy support, and (b) caring. The autonomy support subscale consists of seven items that measure people's perceptions that their social environment respects and encourages their input and initiatives, and thus facilitates the development or maintenance of self-determination (e.g., "I feel that my social environment takes into account my opinions regarding the environment"; $\alpha = .62$). The caring subscale consists of four items that measure people's perceptions that their social environment is indifferent or uncaring toward them when discussing environmental issues (e.g., "I feel that people in my social environment are not interested in my opinions on the environment"; $\alpha = .77$). Items were rated on a 7-point Likert scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*).

Environmental Satisfaction Scale (ESS; Pelletier, Legault, & Tuson, 1996). The ESS comprises two subscales (4 items/subscale) assessing the level of environmental satisfaction (e.g., "The local environmental conditions are excellent"; $\alpha = .88$) and the level of satisfaction regarding the government's environmental policies (e.g., "The government policies developed to deal with the environmental situation are excellent"; $\alpha = .89$). Items were rated on a 7-point Likert scale ranging from 1 (*do not agree at all*) to 7 (*totally agree*).

Negative feelings about the environment. This scale is composed of two subscales measuring negative feelings about the environment ($\alpha = .70$) and self-related feelings about the environment ($\alpha = .69$). The lists of feelings were derived from the Multiple Affect Adjective Checklist (Zuckerman & Lubin, 1965). Participants were asked to evaluate their feelings in response to the prompt "When I think about the environment, I feel . . ." Ratings were made on a

7-point Likert scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*).

Results

Preliminary Analyses

First, prior to testing the factorial structure of the AMTES, preliminary analyses were performed to assess departures from basic assumptions. Examination of the values of kurtosis and skewness revealed that five items displayed values above $|1|$. Yet, the univariate distribution of the items was deemed acceptable since the mean kurtosis ($M = 0.18$) and the mean skewness ($M = 0.87$) for the global scales were inferior to $|1|$ (Müthen & Kaplan, 1985). Also, the inspection of multivariate residuals provided no indications of departure from multivariate normality. An analysis of casewise residuals revealed no univariate outliers (i.e., no cases were beyond 3 standard deviations of the mean) and an acceptable level of multivariate outliers (less than 5%). Finally, there was no evidence of multicollinearity or singularity (i.e., all correlations were inferior to $.90$; Tabachnick & Fidell, 1996).

Second, the descriptive statistics of the AMTES were examined. For the first sample, the highest mean was found with the subscale of effort beliefs, whereas in the second sample it was found with strategy beliefs (Table 1). Thus, these two reasons were the predominant reasons cited by the participants to explain their lack of motivation toward environmental behaviors. On the other hand, amotivation because of a lack of capacity appeared to be the least important reason cited by participants for not being motivated to engage in environmental behaviors, and this was observed for both samples.

Stage 1: Initial Confirmatory Factor Analysis (Sample 1)

A confirmatory analysis was performed on the first sample using LISREL VIII (Jöreskog & Sörbom, 1996). A four-factor model was assessed. The model included the estimation of the 16 target loadings, four factor variances, correlations between all four factors, and uniqueness values for all 16 items. All cross-loadings and uniqueness covariances were fixed to 0. Results revealed an adequate fit for the proposed model, $\chi^2(98, N = 300) = 218.59, p < .001$ (GFI = $.92$, AGFI = $.90$, CFI = $.95$, IFI = $.95$, PNFI = $.75$). The factor loadings representing standardized item-total correlations are presented in Table 1. Correlations between the latent factors are presented in Table 2, along with Pearson correlations between the observed scores. Pearson correlations varied from $.33$ to $.72$. The three types of amotivation (strategy, capacity, and effort beliefs) were all related to the more general state of helplessness beliefs. Amotivation for strategy

Table 1

Confirmatory Factor Analyses for the AMTES (Samples 1 and 2)

Scale items	Factor loadings	
	Sample 1	Sample 2
Strategy beliefs ($M^1 = 2.53$, $M^2 = 2.70$)		
I don't think that the present programs are really going to help the environmental situation.	.72 (.48)	.71 (.50)
I simply don't believe that the existing programs will be successful in improving our environmental situation.	.81 (.34)	.82 (.32)
I feel the environmental programs are not effective.	.82 (.32)	.86 (.26)
I think the environmental programs that have been developed are inadequate; they are not really solving the programs.	.75 (.43)	.72 (.48)
Effort beliefs ($M^1 = 2.64$, $M^2 = 2.56$)		
I can't seem to try hard enough.	.75 (.44)	.68 (.54)
I just can't seem to make the effort to change my habits.	.81 (.34)	.85 (.28)
I can't seem to find it in me to make the necessary sacrifices.	.87 (.24)	.91 (.18)
I can't make the effort to use my time effectively.	.80 (.36)	.82 (.33)
Capacity beliefs ($M^1 = 2.14$, $M^2 = 2.10$)		
I don't feel that I have the competence to do these things for the environment.	.60 (.64)	.55 (.70)
I am not able to make wise choices concerning the environment.	.70 (.51)	.61 (.63)
I don't have what it takes to do these things.	.74 (.45)	.75 (.44)
I know that environmental programs exist, but I don't seem to have the capacity to apply them.	.75 (.44)	.80 (.36)
Helplessness beliefs ($M^1 = 2.30$, $M^2 = 2.23$)		
What little I could do for the environment would not have any impact on a larger scale.	.69 (.53)	.77 (.41)
The magnitude of the ecological disaster is such that it is not likely that my behaviors will have any impact on the situation.	.72 (.48)	.79 (.38)

(table continues)

Table 1 (Continued)

Scale items	Factor loadings	
	Sample 1	Sample 2
I feel overwhelmed by the gravity of ecological problems, and I have the feeling there is nothing I can do.	.69 (.53)	.81 (.34)
The environmental problems are considerable, and I don't think I'd be able to change anything about it.	.76 (.42)	.82 (.34)

Note. Only loadings above .30 appear in the table. The error uniqueness values are presented beside their respective loadings, in parentheses. All estimates are standardized and significant at $p < .05$. AMTES = Amotivation Toward the Environment Scale. M^1 = mean for the first sample; M^2 = mean for the second sample.

beliefs presented the highest correlation with general helplessness beliefs. A confirmatory factor analysis is a very stringent test of the factorial structure of a measurement of an instrument. The fact that the AMTES withstood this test successfully offers promising support for its construct validity. In view of these findings, no further model fitting was deemed necessary, as the proposed model appeared to represent a satisfactory portion of the sample covariance. Finally, the internal consistency of each of the four subscales was acceptable ($.79 < \text{Cronbach's } \alpha < .88$).

Stage 2: Second Confirmatory Factor Analysis, Convergent Validity, and Structural Equation Modeling (Sample 2)

Confirmatory factor analysis. Since the objective of this additional confirmatory factor analysis was to cross-validate the aforementioned results, the hypothesized model was specified to be identical to the model tested in Stage 1. The resulting factor loadings are presented in the second column of Table 1, and the correlations between the latent factors are presented in Table 2, along with the Pearson correlations between the observed scores. Here again, results revealed an adequate fit for the proposed model, $\chi^2(98, N = 300) = 240.43$, $p < .001$ (GFI = .92, AGFI = .90, CFI = .95, IFI = .95, PNFI = .75). No further model fitting was deemed necessary, as the proposed model appeared to represent the sample covariance adequately. Therefore, it was possible to successfully replicate the results obtained in the first stage of the study with an independent subsample.

Associations with related constructs. Convergent validity was assessed by examining correlations between amotivation subscales and constructs related to the environment. Results are presented in Table 3.

Table 2

Correlations Between the AMTES Subscales for Samples 1 and 2

Beliefs	Capacity beliefs	Strategy beliefs	Effort beliefs	Helplessness beliefs
Sample 1				
Capacity ($\alpha = .79$)	—	.55	.58	.62
Strategy ($\alpha = .86$)	.49	—	.33	.72
Effort ($\alpha = .88$)	.72	.25	—	.50
Helplessness ($\alpha = .80$)	.72	.70	.55	—
Sample 2				
Capacity ($\alpha = .77$)	—	.44	.63	.60
Strategy ($\alpha = .86$)	.67	—	.22	.60
Effort ($\alpha = .89$)	.71	.38	—	.49
Helplessness ($\alpha = .87$)	.77	.86	.58	—

Note. Pearson correlations are presented above the diagonal and phi values are presented below the diagonal. AMTES = Amotivation Toward the Environment Scale.

Overall, results were very much in line with the hypotheses. First, as hypothesized, the SDI was negatively related to the four types of amotivational beliefs. Thus, as the autonomous motivation for environmental behaviors increased, the amotivation for any of the four proposed reasons decreased. Second, perceived competence was negatively associated to all four types of amotivational beliefs. As hypothesized, the highest correlation was obtained with amotivation because of capacity beliefs. Third, the perceived importance of the environmental situation was only marginally correlated to amotivation because of capacity beliefs, and uncorrelated to the three other types of amotivation. The absence of interrelations between perceived importance and amotivation beliefs suggests that both types of constructs are independent. Therefore, as hypothesized, participants were not amotivated because they considered that the environmental situation was unimportant. Fourth, the perceived problems in the local environment and the perceived health risks related to environmental conditions showed negative associations with amotivation because of effort beliefs. Also, perceived problems in the environment were negatively associated with amotivation because of capacity beliefs and global helplessness beliefs.

Fifth, another set of correlations was examined with respect to autonomy-supportive and caring attitudes. Results suggested that the perception of the social environment as supporting one's autonomy was negatively associated with all types of amotivation beliefs. The highest correlation was obtained with

Table 3

Correlations Between the AMTES and Related Constructs

	Capacity beliefs	Strategy beliefs	Effort beliefs	Helplessness beliefs
Self-Determination Index	-.33	-.51	-.31	-.51
Perceived competence for environmental behaviors	-.32	-.16	-.24	-.30
Environmental attitudes toward the environment				
Perceived importance	.13	.03	.10	.09
Perceived problems in local environment	-.13	-.06	-.24	-.13
Perceived health risks	-.02	.01	-.23	-.03
Perception of autonomy support by government	-.17	-.36	-.09	-.20
Perception of autonomy support in social environment	-.26	-.27	-.21	-.30
Perception of care in social environment	-.28	-.27	-.19	-.39
Satisfaction toward the environmental conditions	.20	.09	.15	.17
Satisfaction with the government's environmental policies	.10	-.17	.17	.06
Negative feelings toward the environment (e.g., discouraged, pessimistic, helpless, resigned)	.22	.36	.06	.27
Negative self-related feelings when thinking about the environment (e.g., guilty, at fault, responsible, ashamed)	.18	.00	.16	.09

Note. $N = 300$. $r \geq .12$, are significant at $p < .05$. AMTES = Amotivation Toward the Environment Scale.

amotivation because of global helplessness beliefs. Similar results were observed with the perception of the social environment as being caring toward the person and the different types of amotivation beliefs. Again, the highest correlation was found with amotivation because of helplessness beliefs. Moreover, autonomy-supportive behaviors by the government were predominantly negatively

associated with amotivation because of a lack of strategy. This construct was also negatively correlated to amotivation because of a lack of capacity beliefs, and to amotivation because of global helplessness beliefs. Sixth, the more satisfied individuals were with environmental conditions and government environmental policies, the more they experienced amotivation because of effort beliefs. Satisfaction with the environment was also positively associated with amotivation because of capacity beliefs and amotivation because of helplessness beliefs.

Finally, a last set of correlations with feelings about the environment revealed that when participants indicated that they were amotivated because of strategy beliefs, they experienced negative feelings about the environment. When they were amotivated because of a lack of capacity, they reported more negative feelings about the environment (discouraged, pessimistic, helpless, resigned) and, to a lesser degree, more negative feelings about the self in relation to the environment (guilty, at fault, responsible, ashamed). Amotivation because of effort beliefs was associated with negative feelings about the self, and the general state of helplessness beliefs was correlated with negative feelings about the environment.

Evaluation of the proposed structural model. A structural equation modeling procedure was performed in order to assess the relationships between amotivation because of strategy beliefs, capacity beliefs, effort beliefs, and the more general state of helplessness beliefs. Measurement specifications included the estimation of all target loadings and error uniqueness. All cross-loadings and item uniqueness covariances were fixed to 0. The residual variance for the construct of amotivation because of helplessness beliefs was estimated. With the exception of the likelihood ratio, $\chi^2(99, N = 300) = 249.66, p < .001$, the fit indexes revealed that the correspondence between the estimated model and the sample covariance was satisfactory (GFI = .91, AGFI = .89, NFI = .91, NNFI = .93, CFI = .94, IFI = .95, PNFI = .75). All estimated parameters were significant and of acceptable magnitude, with the exception of one structural link. Helplessness beliefs appeared to be a direct consequence of only two of the three specific amotivation beliefs (i.e., amotivation because of capacity beliefs, $\beta = 0.51$; and strategy beliefs, $\beta = 0.52$). Amotivation because of a lack of effort did not display a significant relationship with helplessness beliefs. More importantly, amotivation because of effort beliefs was a strong predictor of amotivation because of a lack of capacity ($\beta = 0.81$) and, to a lesser degree, amotivation because of a lack of strategy ($\beta = 0.30$; Figure 1)

Discussion

The purpose of the present study was to develop and validate the AMTES. The AMTES purports to measure people's reasons for their lack of motivation toward the environment. It is proposed that individuals may lack motivation for environmental protection for different reasons. These reasons correspond

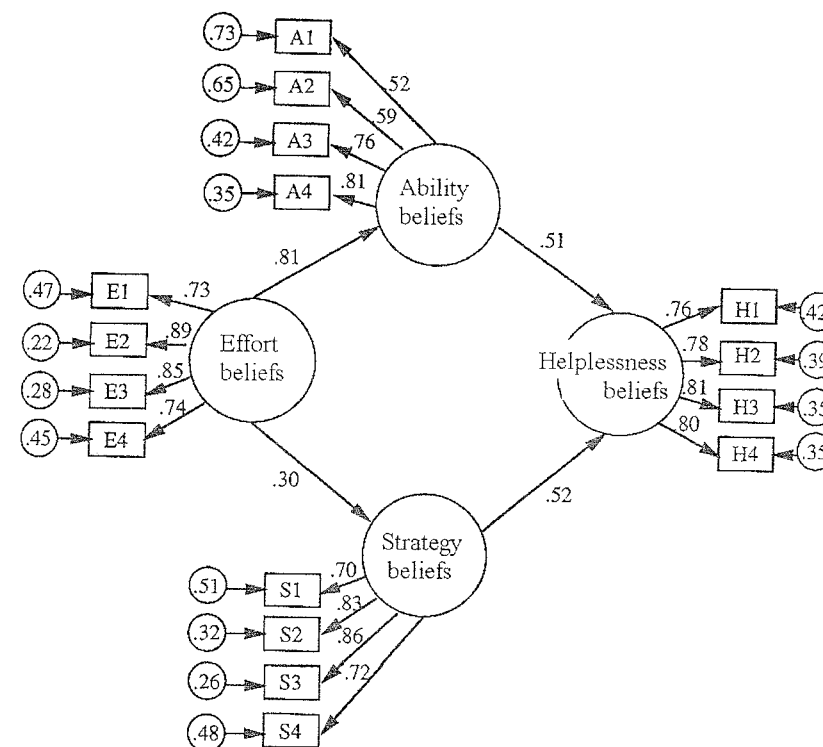


Figure 1. Relationships between amotivation because of a lack of strategy, capacity, and effort beliefs, and the global state of amotivation because of helplessness beliefs. All estimates are standardized and significant at the .01 level.

to different amotivation beliefs: the belief that the strategies are ineffective in producing the desired outcomes; the belief that one does not have the capacity to successfully execute the behavior; the belief that one cannot sustain the effort and integrate the behavior in one's lifestyle; and the belief that the environmental situation is helpless. Results of confirmatory analyses, using two independent samples, provide support to the four hypothesized dimensions of the scale. Also, results reveal that all subscales of the AMTES had adequate levels of internal consistency.

Moreover, the correlations between the AMTES and the constructs related to the environment are in agreement with most of our hypotheses and support the convergent validity of the scale. More specifically, correlations between amotivation beliefs and perceptions regarding problems in the environment, as well as between amotivation beliefs and perceptions of health risks, indicate that a certain degree of concern appeared necessary to feel motivated to invest some

efforts toward environmental protection. On the one hand, this corroborates results from prior studies, which suggest that, as the magnitude of environmental problems is brought to public attention, concerns about the environment tend to increase. Although we know that concern, in and of itself, is not sufficient for environmental action, it nevertheless represents a necessary condition for feeling motivated toward environmental behaviors. However, on the other hand, the perceived importance of the environmental situation was found to be independent from three types of amotivational beliefs, and marginally related to amotivation because of a lack of capacity beliefs. The presence of such results can be explained by the possibility that awareness of the importance of the environmental situation is not sufficient in itself to motivate people to adopt environmental behaviors. Other variables, such as the belief that a strategy is effective in solving a problem, or the belief that people can integrate environmental behaviors in their lifestyles, are necessary to understand how people's perceptions of the importance of the environmental situation can translate into environmental behaviors.

Results concerning the correlations between perceived competence and the different types of amotivational beliefs are consistent with Bandura's (1997) theory of self-efficacy, the theory of perceived control proposed by Skinner et al. (1990), and Deci and Ryan's (1985) theory of self-determination. When individuals perceive themselves as competent, they express the desire to set optimal stimulating goals for themselves and believe that they have the capacity to pursue and attain those goals through engagement in a particular behavior. In the absence of such perceptions of competence, it seems that individuals become amotivated because of capacity beliefs, and they become helpless. This suggests that organizations and people in the social environment should provide individuals with proper knowledge and skills about what they can do to help the environmental situation, and about how to carry out specific environmental behaviors. This could lead to a greater awareness of the problems in the environment, and to an increased sense of environmental competence, thereby reducing environmental amotivation.

Amotivation because of effort beliefs correlated with lower levels of perceptions of problems in the local environment, with lower perceptions of health risks, and with higher levels of satisfaction with the environment and with the government's environmental policies. These associations suggest that when people do not perceive problems in their environment, or potential health risks associated with these problems, and when they are satisfied with the environment and with governmental policies, they do not find in themselves the energy needed to change their habits or to make the necessary sacrifices.

Other results about the associations between perceptions of the social environment and the four types of amotivation beliefs could play a role in understanding why individuals are not manifesting environmental behaviors. For

instance, the degree to which the government or the social environment applies pressure to control people's behaviors, rather than offer options and support people's initiatives, seem to foster the beliefs that the environmental strategies are not effective to solve the situation. Perceptions of social climate (i.e., autonomy support, caring) are also strongly correlated with global helplessness beliefs. This suggests that an interpersonal climate providing opportunities for choice, wherein people's sense of autonomy is supported and wherein they perceive others as caring toward them and toward the environment, could play a key role in reducing feelings of amotivation for environment-preserving behaviors.

Finally, our findings suggest structural relationships among the amotivational beliefs. These relationships indicate that global helplessness beliefs could result from the combined effect of two types of amotivational beliefs: one related to the lack of capacity for carrying out the appropriate environmental behaviors, and the other related to the belief that the strategies proposed are perceived as being ineffective to change the environmental situation. These two types of amotivational beliefs (i.e., capacity and strategy) are, in turn, predicted by the belief that the individual cannot make the effort to change his or her habits, or to integrate the environmental behaviors into his or her lifestyle. What these results imply is that it may not be sufficient to change people's capacity to do specific environmental behaviors, or to convince them the environmental strategies are effective in solving the current situation. In addition, it may be necessary to help people to understand how to integrate environmental behaviors into their lifestyles.

Altogether, the present results have implications for the strategies that could be used to change people's amotivation for the environment. One potentially effective way to increase the public's confidence in their capacity toward environmental behaviors could be to emphasize that capacity is a skill that can be acquired and honed by gaining specific knowledge on how to carry out the behavior. Our results suggest that effort beliefs were an important determinant of capacity beliefs. Therefore, one effective way to affect people's capacity could be to first work on the concept of sustained individual effort. Maintenance of effort toward environmental behaviors could be encouraged by supporting people's autonomy, and by providing constructive feedback about how environmental behaviors could be integrated into their lifestyles. Also, enhancing people's beliefs in their capacity could possibly reduce the negative feelings that they have about the environment, and the negative feelings that they have about themselves in relation to the environment.

From an applied perspective, the results suggest some implications for environmentalists and policy makers. First, in order to have any impact on individuals who experience a general state of helplessness, a first step could involve the organizations responsible for implementing environmental programs. These organizations should emphasize how different strategies can be effective in solving environmental problems. This suggests that increasing people's confidence in

environmental strategies by educating them about the pertinence of environmental programs could possibly reduce their beliefs about the lack of efficacy of their strategies, thereby reducing their negative feelings about the environmental protection.

Also, environmentalists and policy makers could work on increasing individuals' perceptions of competence by providing them with knowledge and skills about what they can do to help the situation, and how to carry out the required behaviors. The absence of those two perceptions is positively related to amotivation beliefs including capacity, effort, and global helplessness beliefs. Jointly, a greater consideration of the problems in the environment and an increased sense of competence could lead the individual to experience less amotivation.

In sum, our efforts were specifically devoted to the examination of a neglected aspect in the literature concerning the environment: people's reasons for their lack of motivation for environmental behaviors. The AMTES is a first attempt at better understanding specific reasons why some people feel amotivated to engage in environmental protection behaviors. These preliminary results suggest that the AMTES possesses acceptable psychometric properties. Although interesting, these findings must nevertheless be perceived as preliminary. As is the case with all steps of scale development, a complete assessment of the psychometric properties of the AMTES will necessitate additional research, particularly in terms of establishing external validity. One important issue that needs to be addressed in future research concerns establishing how changes in people's amotivation beliefs could be used as predictors of some outcome measures, such as environment-preserving behaviors. For instance, the AMTES could be used at different points in time in order to better understand circumstances when individuals' specific amotivational beliefs may change. The AMTES could also be of great help in program-evaluation endeavors in which applied researchers are interested in assessing the motivational changes produced by the provision of information about the local environment, or about environmental health risks. Changes in amotivation could be linked to new environmental information or strategies, and maintenance or integration of change into individuals' lifestyles. Further research on these issues is needed, as it could further knowledge on the relationships between amotivational beliefs and environment-protective behaviors. Also, the measure of real behaviors that are not self-report based could help us to determine whether people can accurately and honestly report why they are not doing things for the environment.

Another important issue that needs to be addressed involves examining the impact of specific intervention behaviors on people's amotivation. It would be interesting to better understand how specific information (e.g., about health risks, the importance to act, changes in taxes that fund environmental cleanup) or strategies used to change people's behaviors (e.g., the use of threats or pressure to increase compliance, the use of incentives to motivate people) affect amotivational

beliefs and, conversely, their motivation to behave. Along this line, by using the AMTES, researchers could identify individuals with high versus low levels of specific amotivation beliefs and verify the possibility that some individuals react better to one type of information about their environment (e.g., the benefits of a clean environment), whereas other individuals respond better to another type of information (e.g., the threats associated with a polluted environment). Furthermore, the AMTES subscales and some of the related constructs used in the present study could be incorporated in a model to establish links between antecedents and consequences of amotivation beliefs. On an applied level, such a model could help to determine more precisely at which level different organizations can intervene to help people overcome feelings of amotivation. The limitations of this study notwithstanding, it is our hope that with further refinements and possible expansion of the amotivation taxonomy, researchers will be better equipped to understand the complexities of the factors fostering motivational deficits with respect to the preservation and improvement of environmental quality.

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