Bulletin of the *Transilvania* University of Braşov
Series VII: Social Sciences • Law • Vol. 6 (55) No. 1 - 2013

DO OUR VALUES ALLOW PREDICTION OF OUR ENVIRONMENTAL BEHAVIOURS?

M. BAKITA-ELLA[1] L. RIOUX[1]
M. PAVALACHE-ILIE[2]

Abstract: *Our research aims to identify the connections between the values and the environmental behaviour defined by two components: the pro-social behaviour and the pro-environmental one. More precisely, we state that the subscale 'Pursuit of knowledge' is a predictor of these two behaviours. The results obtained on a sample of French high-school students only partially confirm the hypothesis, but suggest to focus on the values composing the subscale 'Pursuit of knowledge' in order to facilitate the adoption of a pro-environmental behaviour amongst the students.*

Key words: *ecological behaviour, pro-social behaviour, pro-environmental behaviour, values.*

1. Introduction

Since the publication of the Brundtland report [1], which defines the concept of Sustainable Development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (p.740), natural resources are no longer considered only simple resources that should be protected from human threats, but also resources the consumption of which should be controlled. From this perspective, it is essential to radically modify our production and consumption manners, thus changing our behaviour towards the natural environment and the use of its resources.

Defined as the behaviours adopted by 'an individual who consciously decides to minimise his negative impacts on the natural and artificial environment' [10] the behaviours in-favour of the environment, or pro-environmental behaviours have become an object of study more and more frequently examined in the last decades in humanistic sciences in general and environmental psychology in particular.

Numerous factors influence the pro-environmental behaviour. Amongst them, one could mention gender [19], level of education [18], culture [7], the social norms [9], the environmental attitude [11] and environmental knowledge [5], be it declarative [3], procedural [23], or social [21]. For more details the reader could direct himself to the articles of Kollmuss and Agyeman [10] and Rioux [17]. However, the impact of these factors most often seems to be weak or indirect [6], [10].

[1] Université Paris Ouest Nanterre La Défense, France.
[2] *Transilvania* University of Braşov, Romania.

By way of contrast, the researchers seem to agree on the important influence of our system of values [24], [15], and numerous works [20], [13], [2] have shown that Schwartz's typology [22] contributes to explaining the respectful behaviours towards the environment. The works globally highlight that the dimensions related to the will to overcome one's limits are positively connected to a respectful behaviour towards the environment, while the dimensions related to self-affirmation are negatively connected to it.

In a recent research, Rioux [16] has shown that the subscale 'Pursuit of knowledge' proposed by Wach and Hammer in the French version [26] of the Brief Inventory of Values (BIV), of Stern, Dietz & Guagnano [25], constitutes a predictor of the recycling used batteries behaviour of French high-school students.

Moreover, pro-environmental behaviour is very often associated with pro-social behaviour, both being strongly connected to values [4], [2]. Kaiser [8] even considers that these two behaviours are the two components of environmental behaviour.

The current research aims to conduct an in-depth analysis of the connections between the subscale 'Pursuit of knowledge' and the environmental behaviour. It is to be noted that the latter is decomposed, according to Kaiser [8] in two types of behaviour, namely (a) pro-social behaviour and (b) pro-environmental behaviour. We infer that the subscale 'Pursuit of knowledge' is a predictor of these two types of behaviour.

2. Material and Method

151 young French students aged between 18 and 23 (average= 19,53 years; SD= 1,12 years) have answered a questionnaire comprising Wach and Hammer's French version of the Brief Inventory of Values (BIV) (2003) and the French adaptation of Kaiser's environmental behaviour scale [8].

This research instrument is composed of 38 items, 8 of them evaluating the pro-social behaviour (for example 'I sometimes give money to beggars') and 30 of them evaluating the pro-environmental behaviour (for example 'I bring medicines that I don't use to the drugstore'). For both instruments, the answers should be given on a six-point Likert scale, ranging from (1) 'completely disagree' to (6) 'completely agree'. Furthermore the student is required to tick (7) when he is not concerned by a question in the environmental behaviour scale. The 32 students who have at least once ticked that option have been deleted from our sample, the analysis being therefore conducted on 119 students.

3. Results

3.1. The descriptive analyses

The results regarding the environmental behaviour are presented in table 1. For these two behaviours the average values seem moderated, associated to a relatively low standard deviation. We should note however that the students adopt more of a pro-environmental behaviour rather than a pro-social one ($p>.05$).

Table 1

Descriptive statistics of environmental behaviour

Environmental Behaviour	**M (ET)**
Pro-social behaviour	3.85 (.61)
Pro-environmental behaviour	4.01 (.51)

As far as the results obtained on the values questionnaire are concerned, we note that all subscales obtain averages higher than the theoretical one (3, 50 on a scale of 6 points). However, the item 'to honour our parents' of the subscale

'conservatism' is weak (A= 2.43) but very little consensual (SD= 1.78) (table 2).

Descriptive statistics of values Table 2

Items	**M (ET)**
Conservatism	**3.56 (1.30)**
To honour our parents	*2.43 (1.78)*
Family security	*4.21 (.87)*
Self-discipline	*4.03 (1.23)*
Self-enhancement	**4.20 (.86)**
Authority	*4.15 (.88)*
Influencial	*4.17 (.85)*
Wealth	*4.29 (.86)*
Openness to change	**4.52 (.84)**
A varied life	*4.56 (.81)*
An exciting life	*4.63 (.86)*
Curious	*4.36 (.86)*
Self-transcendence	
A. Environmentalism	**4.07 (.96)**
Protection of the environment	*4.12 (.97)*
Unit with nature	*4.19 (.92)*
Respect for the Earth	*3.91 (.98)*
B. Altruism	**3.98 (1.24)**
A peaceful world	*3.83 (1.19)*
Social justice	*4.30 (1.30)*
Equality	*3.81 (1.20)*
Pursuit of Knowledge	**4.55 (.73)**
The search of truth	*4.57 (.83)*
Knowledge	*4.42 (.74)*
Reason	*4.63 (.62)*

3.2. The predictors of environmental behaviour

Hierarchical regression analyses were conducted having as successive criteria (a) the pro-social behaviour and (b) the pro-environmental behaviour. The socio-demographic variables (age, gender) were controlled by being introduced in the first stage. The potential predictors were added in the second stage. They correspond to the subscales of values which are significantly connected to each one of these behaviours, namely the environmentalism (r=.30), altruism (r=.21) and the pursuit of knowledge (r=.18),as far as the pro-social behaviour is concerned and the environmentalism (r=.64), the pursuit of knowledge (r=.62), the openness to change (r=.50) and altruism (r=.31), as far as the pro-environmental behaviour is concerned. The results are grouped in tables 3 and 4.

Table 3

Predictors of pro-social behaviour

	β	t value	Prob	adj. R2 (prob.)
Step 1. Socio demographic variables .008 (ns)				
Age			*ns*	
Gender			*ns*	
Educational level			*ns*	
Step 2. Dimensions .10 (.000)				
Altruism	.26	3.34	.001	
Environmental-ism			*ns*	
Pursuit of knowledge			*ns*	

Only altruism (β=.26) is a variable which explains pro-social behaviour (R=.31; R2 adjusted =08; F(1,116) = 11.16 ; p<.002).

Table 4

Predictors of pro-environmental behaviour

	β	t value	Prob	adj. R2 (prob.)
Step 1. Socio demographic variable .009 (ns)				
Age			*ns*	
Sex			*ns*	
Educational Level			*ns*	
Step 2. Dimensions .56 (.000)				
Environmentalism	.36	5.25	.000	
Pursuit of knowledge	.24	3.64	.000	
Openness to change			*ns*	
Altruism			*ns*	

Two variables predict the students' pro-environmental behaviour (R=.76; R2 adjusted =.56; F(4,114)=38.08; p<.0001); environmentalism (β=.36) and the pursuit of knowledge (β=.24).

4. Discussion-conclusion

As is the case of other subscales of the BIV, the subscale 'Pursuit of knowledge' registers high and consensual scores globally (A=4.55; SD=.73). None of the items composing it is particular in point of scores. These scores are significantly higher than those obtained by a population of French pupils (p<.0001) [16].

As a logical consequence, we could suppose that high-school students give more importance to the pursuit of knowledge as compared to primary or secondary school pupils.

Our research aimed to analyse the connections between the subscale 'pursuit of happiness' and the environmental behaviour, defined by two components: the pro-social and the pro-environmental behaviours. The research hypothesis according to which the 'pursuit of knowledge' subscale is a predictor of the two types of behaviour is only partially confirmed, because it is only a predictor of pro-environmental behaviour.

As expected, the 'altruism' subscale is a predictor of pro-social behaviour, which is similar to the results obtained by Schultz and Zelezny [20]. The sub-scale 'pursuit of knowledge' is not a predictor of this behaviour, even though a relatively high correlation has been revealed (r=.18).

The subscales 'Pursuit of knowledge' and 'environmentalism' are predictors of the pro-environmental behaviour. These results complete those obtained by Nordlund and Garvill [12], [13], Poortinga, Steg and Vlek [14] and De Groot and Steg [2], which show that environmental values are positively connected to the pro-environmental behaviour. However, as in the works conducted by Rioux [17] and contrary to the works of Schultz and Zelezny [20], [21] and Steg *et al*. [24] our research does not reveal a negative connection with the values of 'self-affirmation' and does not point towards 'openness to change' as a predictor of pro-environmental behaviour. Complementary research seem to be a must in order to offer a better understanding of these differences, considering the cultural environment where they are conducted in particular.

Finally, this research shows that the values that allow prediction of each of the two behaviours which compose the environmental behaviour are not the same. So, the Pursuit of knowledge constitutes a highly significant predictor of the pro-environmental behaviour, as well as environmentalism. Wouldn't it be proper to focus on the values which make this subscale (the search of truth, knowledge, reason) in order to promote the pro-environmental behaviour of the students?

Other information may be obtained from the address**:** lrioux@u-paris10.fr.

References

1. Brundtland, G.: *Our Common Future* Oxford. Oxford University Press, 1987.
2. De Groot, J., Steg, L.: *Value orientations to explain beliefs related to environmental significant behavior: How to measure egoistic, altruistic, and biospheric value orientations*. In: Environment and Behavior **40** (2008) No. 3, p. 330-354.
3. Ernst, A.M., Spada, H.: *Modeling agents in a resource dilemma: A computerized social learning environment*. In: *Simulation-Based Experiential Learning,* Towne, D., de Jong, T., Spada, H. (eds.). Springer, Berlin, 1993, p. 105-120.
4. Gärling, T., Fujii, S., Gäling, A., Jakobsson,C.: *Moderating effects of social value orientation on*

determinants of proenvironmental behavior intention. In: Journal of environmental psychology (2003) Vol. 23, p. 1-9.

5. Hungerford, H., Volk, T.: *Changing learner behaviour through environmental education*. In: The Journal of Environmental Education **21** (1990) No. 3, p. 8-21.
6. Hwang, Y.-H., Kim, S., Jeng, J.-M.: *Examining the causal relationships among selected antecedents of responsible environmental behaviour*. In: The Journal of Environmental Education **31** (2000) No. 4, p. 19-24.
7. Johnson, C., Bowker, M., Cordell, K.: *Ethnic variation in environmental belief and behavior: An examination of the new ecological paradigm in a social psychological context*. In: Environment and Behavior **36** (2004), p. 157–186.
8. Kaiser, F., Wolfing, S., Fuhrer, U.: *Environmental attitude and ecological behavior.* In: Journal of Environmental Psychology **19** (1999), p. 1-19.
9. Kaiser, F., Hübner, G., Bogner, F.: *Contrasting the theory of planned behavior with the value-belief-norm model in explaining conservation behavior*. In: Journal of Applied Social Psychology **35** (2005), p. 2150-2170.
10. Kollmus, A., Agyeman, J.: *Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behaviour?* In: Environmental Education Research **8** (2002) No. 3, p. 239-260.
11. Milfont, T., Duckitt, J.: *The structure of environmental attitudes: A first- and second-order confirmatory factor analysis*. In: Journal of Environmental Psychology **24** (2004), p. 289–303.
12. Nordlund, A., Garvill, J.: *Values structures behind proenvironmental behavior*. In: Environment and Behaviour **34** (2002) No. 6, p. 740-756.
13. Nordlund, A., Garvill, J.: *Effects of values, problem awareness, and personal norm on willingness to reduce personal car use.* In: Journal of Environmental Psychology **23** (2003), p. 339–347.
14. Poortinga, W., Steg, L., & Vlek, C.: *Values, environmental concern, and environmental behavior: A study into household energy use*. In: Environment & Behavior **36** (2004), p. 70-94.
15. Reser, J., Bentrupperbaümer, J.: *What and where are environmental values? Assessing the impacts of current diversity of use of 'environmental' and 'World Heritage' values*. In: Journal of Environmental Psychology **1** (2005) No. 25, p. 125-146.
16. Rioux, L.: *Hiérarchie des valeurs et respect de l'environnement*. In: Environnement, Risques et Santé **9** (2010) No. 4, p. 331-336.
17. Rioux, L.: *Promoting pro-environmental behaviour. Collection of used batteries by secondary school pupils*. In: Environmental Education Research **17** (2011) No. 3, p. 353-373.
18. Rioux, L., Velasco-Gonzalez, L., Bakita, M.: *Los valores sociales predicen o no nuestras conductas eticas? Estudio realizado en una población francesa*. Paper proposed at the International Congress in Human and social sciences, San Cristobal, Venezuela, 2008.
19. Rioux, L., Moch, A., & Maramotti, I.: *How generate a pro-environnemental behaviour? The case of the used batteries gathering in a French secondary school*. Paper proposed at the 11th European Congress of Psychology (ECP), Oslo, Norvège, 2009.
20. Schultz, W., Zelezny, L.: *Values as predictors of environmental attitudes: evidence for consistency across 14 countries*. In: Journal of Environmental Psychology **19** (1999), p. 255-265.

21. Schultz, P. W., Oskamp, S., Mainieri, T.: *Who recycles and when: A review of personal and situational factors*. In: Journal of Environmental Psychology **15** (1995), p. 105-121.
22. Schwartz, S.: *Are there universal aspects in the structure and contents of human values?* In: Journal of Social Issues **50** (1994), p. 19-45.
23. Smith-Sebasto, N. J., Fortner, R. W.: *The environmental action internal control index*. In: Journal of environmental education **25** (1994) No. 4, p. 23-29.
24. Steg, L., Dreijerink, L., Abrahamse, W.: *Factors influencing the acceptability of energy policies: A test of VBN theory*. In: Journal of Environmental Psychology **25** (2005), p. 415-425.
25. Stern, P., Dietz, T., Guagnano, G.: *A brief inventory of values*. In: Educational and psychological measurement **58** (1998) No. 6, p. 984-1001.
26. Wach, M., Hammer, B.: *La structure des valeurs est-elle universelle? Genèse & validation du modèle compréhensif de Schwartz.* Paris. L'Harmattan, 2003.