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French adolescents' environmental friendly behaviour

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INTRODUCTION AND RESEARCH QUESTIONS

Environmental friendly behavior and attitudes have been studied in social sciences since the 1970 with the awakening of an « ecological consciousness ». Psychology has been actively taking part in these studies since then (Maloney & Ward, 1973, Oskamp, 2000, Schmuck & Schultz, 2002).

Bronfenbrenner (1979) in his nested system approach, sees the person as seen as a developing entity, in constant interaction with different developing environments. We therefore propose to study two different settings (city / family) around the adolescents which could have an influence on his/her pro-environmental behaviors, as well as the influence of a psychological variable : emotional affinity to nature.

In detail we wanted to check the following aspects :

Influence of the city : Is the image the adolescent is having of his city (polluted or preserved) influencing his behavior concerning environment ? We took two cities in the south of France, a priori contrasted concerning the image of their environment : the city A. is associated to the positive, nature protecting image of the Camargue, whereas the city B. is defending itself against a negative image due to the industrialisation and pollution of the Berre – Pond nearby.

Without having a oriented hypothesis, we could imagine that the positive or negative image of the city induces a propensity in the adolescents to act : either a favorable image encourages pro-environmental behavior (as a social norm), or a negative image calls upon such behavior (as a protective reaction).

A second setting we were interested in was the family. Is the fact to live in a family which is engaged in environmental matters induces the adolescent to do the same ? Or would he / she be rather taking his / her distances with this model of behavior ? Different aspects were studied :

-parents' role model (what they do) and parents – children's discussions about the environment (what they say). We checked also parents' SES.

The third variable studied was psychological. It is the personal experience of and with nature of the adolescent. Kals, Schumacher and Montada (1999) called this « emotional affinity towards nature ». In their study, they showed that emotional aspects also influence the ways adults behaved toward nature. Indeed, cognitive aspects are not the only ones to decide people to act for the environment. Yet, the emotional aspect has been treated rather rarely in the studies of pro-environmental behaviors.

The dependent variable was the self-reported frequency of environmental friendly behavior of the adolescent (save water, save electricity, recycle waste...).

METHODOLOGY

Participants

193 adolescents in different schools in the cities of A. (95 pupils) and B. (98 pupils), situated in the south of France, filled in a questionnaire. This pupils were in the 6th grade (106 pupils, mean age 11,8 years) or in 3rd grade (87 pupils, mean age 15,1 years). There were 107 boys and 86 girls.

The SES of the parents are about 25% workers, between 11 and 15% craftsmen or directors of a small business, employees, farmers, white collar workers and unemployed.

Material and procedure

The following scales or questions were included in a larger questionnaire :

Environmental friendly behaviors : A list of nine pro-environmental behaviors, subjects had to report if they : regularly had that behavior ; had that behavior from time to time ; never had that behavior (e.g. separate waste ; try to avoid wasting water ; take public transports).

Image of the city scale : A list of 12 items characterizing the city ; subjects had to choose 4 items very typical of their town, 4 items quite typical, and 4 items not typical. (e.g. a polluted city ; a city close to a natural site ; an industrial city ; a city I would like to leave later).

Environmental friendly behavior in the family context : Open answers to the following questions : What do your parents do for the environment ? Do your parents sometimes talk to you about the environment ? If yes, about what exactly ?

Emotional Affinity scale (inspired by Kals, Schumacher and Montada, 1999). A list of 15 items related to the feelings about nature and outdoor activities. Examples : "When I am outside, in the nature... I feel free ; I am sometimes a little bit afraid ; nature makes me dream".

RESULTS

Table 1 shows :

- % of adolescents with regular environmental friendly behaviour is not very high (only one item done regularly by the majority)
- the first five items : items of everyday life / items on which adolescents have a personal control / items which are widely publicized (at least in France) in publicity and the media as « the easy gestures for the environment ».
- Collective items are last in order

Table 1 : **Regular** pro-environmental behaviors (% of participants)

Rank	behavior	% of participants
1	Not to throw garbage anywhere	54,5
2	Not to spoil electricity	44,3
3	Take public transports	40,8
4	Not to let run water without utility	37,7
5	To sort garbage	24,4
6	Use renewable energy	17,3
7	Use recyclable products	14,7
8	Participate in « action days »	6,6
9	Adhere to an environmentalist association	4,0

Global environmental friendly behavior score

We then calculated a global score including the frequency of all behaviors. **The lower the score, the more frequent and regular the behavior.** The theoretical range is from 9 to 27 points, adolescents had 19 points in average (varying between 10 and 25 points).

Image of the town scale

Factorial analysis of the items found as expected three bi-polar factors : - **Objective image of the town :** « industrial » vs « historic », « touristic », « close to a nature resort » - **Subjective image of the town :** « beautiful » vs. « polluted », « dirty » « which smells badly » - **Personal image of the town :** « I like to live here », « I would like to live here all my life » vs « a city I would like to leave later ». On these three factors, **A. and B. are opposed only on the objective image of the town.** Adolescents describe respectively A. as « historic, touristic, close to a natural resort » and B. as « industrial ». But the two cities are not opposed on the two other factors : in similar proportions adolescents living in A or B see their city as beautiful (or polluted), or would like to stay there (or to leave).

Emotional affinity scale

Two scores were calculated. First, the global score of the scale. **The lower the score, the higher the emotional affinity to nature.** This score could vary between 15 (highest affinity) and 60 points (lowest affinity). The mean score in the sample is 30 points, a high affinity, with a range from 16 to 52 points. Second a factor analysis resulted in five factors : feeling of unity (low / high), feeling of well-being (low / high), feeling of liberty (low, high), feeling of security (low / high), interest for nature (low / high).

For each subject, their position on the factors was calculated as well as their environmental friendly behavior (total score).

Which influence have the three variables (image of the city, family context, affinity to nature) on pro-environmental behavior ?

Influence of the the image of the city

At a $p < .05$ level, results do not support this hypothesis. Neither the subjective, nor the objective image of the town have a significant influence on the global score of environmental behaviour. In adolescence, this global urban context does not seem to play an important role for having environmental friendly behaviours.

Influence of the family context

- Environment as a matter of family discussion

Results show that only for one third of the sample, discussions about environment are frequent. However, the dialogue about this matter does not seem decisive : adolescent of families where the environment is discussed do show a tendency to have more pro-environmental behaviours, but the difference does not reach significance.

- Parental model

The behaviors of parents do have an influence. Adolescents who describe their parents as acting for the environment, even if sometimes the descriptions are quite vague (« they try not to pollute »), show themselves more often responsible behavior concerning the environment, than adolescents who report that their parents do « nothing ». According to participants, the majority of parents are "doing something".

Influence of the variable « emotional affinity »

This variable influences the pro-environmental behaviors. The more the adolescents had a strong global attachment to nature, the more they had environmental-friendly behaviors (regression analysis, $\beta = .34$, $p < .0001$). Examining each factor of emotional affinity, we see that three out of five dimensions influence the dependant variable in a significant way (Tables 2 to 4) ;

As shown in Table 2 to 4, the feeling of unity, the feeling of well-being and the interest for nature's functioning is linked to a higher score of environmental-friendly behavior. On the contrary, the aspects liberty and security do not play a differential role.

Age did not differentiate the responses.

Table 2: Total score of the environmental friendly behaviors in function of the feeling of unity with nature

	Low feeling of unity with nature m (sd)	High feeling of unity with nature m (sd)	p
Total score env. friendl. behavior	20,07 (2,53)	18,75 (2,52)	.0016

Table 3: Total score of the environmental friendly behaviors in function of the feeling of well-being in nature

	Low feeling of well-being m (sd)	High feeling of well-being m (sd)	p
Total score env. friendl. behavior	20,19 (2,56)	18,75 (2,46)	.0006

Table 4: Total score of the environmental friendly behaviors in function of interest for nature

	Low interest m (sd)	High interest m (sd)	P
Total score env. friendl. behavior	19,87 (2,37)	18,92 (2,75)	.02

DISCUSSION AND CONCLUSION

This research investigated the influence of different contexts (city and family) and of a psychological variable (emotional affinity to nature) on adolescents' environmental friendly behavior.

First, we see that "classical" pro-environmental behavior is not shared by many adolescents. The habits of taking care of resources were not yet very implemented (in 2005). Second, environmental friendly behavior seems first of all civic behavior. Indeed there was in the questionnaire the possibility to add freely other environmental-friendly behaviors, and examples of the responses are : « tell people not to throw things on the ground » and « help other people ».

Third we see that cities which are objectively seen as different (industrial vs. preserved), are subjectively appreciated as much by the adolescents. For them, A or B, their respective city, is not only what an exterior eye or the tourism leaflet can describe, but the place, where their everyday life takes place, with its (dis) advantages and its possibilities of action. For an adolescent an industrial place can be as attractive as a preserved place.

Fourth we observe that family plays a role on the propensity of environmental friendly behavior. However, not so much the discussions are important, than the behavior of the parents who are clearly a role model. The behavior of the parents is probably pointing to rules in the family, this could be investigated in a study including parents.

Finally, emotional affinity to nature had an influence, especially the dimensions of feeling of unity and well-being in nature, as well as a more cognitive aspect : the interest for nature. This direct link to nature has been explored and used by programmes of « nature education » which include a sensorial and emotional aspect, beside cognitive dimensions.

This latter aspect should retain also retain more interest in developmental studies of environmental consciousness and environmental-friendly behavior in adolescents.