

## Nostalgia and Pro-Environment Behavior: The Mediation Effect of Place Attachment

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**Abstract:** The destroying natural environment requires people to concern more about environment protection and do more pro-environment behavior. This study investigated the relationship between nostalgia and pro-environment behavior, and the mediation effect of place attachment. Present study consisted of a sample of 206 people. Participants were asked to complete the nostalgia scale, pro-environment behavior scale, and place attachment scale online. The results showed that nostalgic people were more likely to participate in pro-environment behavior, and place attachment served a mediator in nostalgia and pro-environment behavior. Which means nostalgic people have a higher level of place attachment which leads to more environment-friendly behavior.

**Key words:** Nostalgia • Pro-Environment Behavior • Place Attachment

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### INTRODUCTION

In recent years, environmental problems, such as air pollution and water resources scarcity, influence human survival and development and require a better consideration of how human get along with eco-environment [1, 2]. These environmental problems come from the human behavior to a great extent, however, they can be alleviated by appropriate human behavior as well [2]. This appropriate behavior that avoids or reduces environmental problems is called pro-environment behavior, which becomes a focus of psychological research.

There are many factors playing an important role in pro-environment behavior, mainly including social factors and personal factors [3]. On social level, different national cultures or social norms will influence the individual participation of pro-environment behaviors [4, 5]. While psychologists think more of personal factors. Personality, values and emotion were all been found correlated to pro-environment behavior [6-8]. Multiple researches showed that positive emotion could motive people to behave eco-friendly [7] and some negative emotion (i.e., anxious and worried) could motive individual's pro-environment behavior as well [9]. Nostalgia, as a bittersweet emotion,

could bolster social connectedness, may also influence pro-environment behavior.

Nostalgia refers to sentimental longing for the past personal experience, was found positive correlated to social bonds [10] personal existential meaning [11] positive emotion [12] and above all, pro-social behavior [13]. Researcher asked participants to think of childhood experience and then read a scenario story about charity, finally participants reported how much they would like to donate to charity [14]. The results showed that when people were primed to old memory, they would like to consider more about others and donated more money to charity. Zhou *et al.* [13] research supported this finding under Chinese culture. When people brought to mind a nostalgic event rather than an ordinary event, they would show larger charitable intention and participate in more tangible charitable behavior.

As a special kind of pro-social behavior [15], pro-environment behavior also reflects the individual's concern about the interest of others collectively. So we suggest that pro-environment behavior could be influenced by nostalgia. Because nostalgic people have stronger social bonds and closer interpersonal distance [13] they will naturally pay more attention to the interests of mankind and do more for the welfare of human being,

such as caring about environmental issues and behave eco-friendly.

Place attachment, the emotion connectedness that individual holds toward particular areas [16, 17] may play a mediation effect between nostalgia and pro-environment behavior. On the one hand, multiple studies agreed that place attachment was relevant to pro-environment behavior [18]. For example, Budruk and his colleagues [18] found that place attachment had a positive impact on individual's involvement in eco-friendly activities. And Zhang *et al.* [17] research found that those who felt like the place is a part of them and attached to the place, were more willing to save energy and resource in daily life, protect animals and plants and do many other pro-environment behavior. On the other hand, place attachment is correlated with nostalgia. The same with nostalgia, place attachment is a kind of social emotion and has social function [12]. Remembering experience of the past certain event and certain person can increase sense of belonging to certain area. And gradually, these past personal experience become a part of self-concept. Previous research proved that nostalgia boosted social bonds [19] and let people concern more about interpersonal relationship rather than material wealth. According to previous studies, we supposed that the relation between nostalgia and pro-environment behavior was mediated by place attachment [20]. Nostalgia people are more attached to their residence, which make them more eco-friendly.

Although previous researchers have found that nostalgia increased pro-social behavior [13, 14], there is no research focus on relationship between nostalgia and pro-environment behavior, not to mention the mediating effect. However, environmental problems require people to pay attention to and participate in pro-environment behaviors, so the affecting factors should be concerned. In present research, questionnaire method was used to verify the relationship of nostalgia, place attachment, and pro-environment behavior.

## MATERIALS AND METHODS

**Participants:** 266 participants were recruited from an online survey platform. 60 of them were excluded for unserious answer. 206 participants (85 men) were included to analysis, with a mean age of 32.73 years ( $SD = 7.59$ ).

Participants completed Nostalgia Scale, Pro-environment Behavior Scale and Place Attachment Scale online in sequence, and then reported their gender, age and length of residence.

## Measures

**Nostalgia:** Batcho Nostalgia Inventory (BNI) [21] was used to measure participants' nostalgia. Specifically, participants need to rate how much they missed the 20 aspects of their past (i.e., "*someone I loved*", "*my friends*", "*TV shows/movies*") via a 7-points scale (1 = not at all, 7 = very much). The Cronbach's  $\alpha$  coefficient of this scale was 0.90.

**Pro-environment Behavior (PEB):** Hunter, Hatch and Johnson's scale [22] was used to gauge pro-environment behavior. The scale included 6 items to measure public- (i.e., "*In the past five years, I have been a member of any group whose main aim is to preserve or protect the environment*") and private-sphere (i.e., "*I make a special effort to sort glass, or tin, or plastic, or newspapers and so on for recycling*") PEB, three representing each category. Each item was rated on a 7-point scale ranging from 1 (Strongly disagree) to 7 (Strongly agree). The Cronbach's  $\alpha$  coefficient of this scale was 0.78.

**Place Attachment:** "*Current residence make me feel safe*" and "*I don't like my current residence*" these two questions were used to gauge place attachment (inter-item correlation:  $r = -.51, p < .001$ ). Each question was rated on a 7-point scale ranging from 1 (Strongly disagree) to 7 (Strongly agree). After revised coding the second question, we averaged responses to the 2 questions to created place attachment score.

## RESULTS

The correlations of main variables were showed below. Nostalgia ( $M = 5.11, SD = 0.74$ ) was positively correlated with PEB ( $M = 4.75, SD = 1.11$ ) and place attachment ( $M = 5.64, SD = 1.24$ ),  $r_1 = 0.49, p_1 < 0.001$ ,  $r_2 = 0.21, p_2 < 0.001$ . Meanwhile there was a positive correlation between place attachment and PEB,  $r = 0.29, p < 0.001$ . According to common sense, people would be more attached to the residence if they live there longer. While in present study, we found that length of residence ( $M = 5.64, SD = 1.24$ ) was positive related to place attachment,  $r = 0.23, p < 0.001$ . So we controlled length of residence in subsequent steps of analysis as well.

Furthermore, we conducted a regression analysis to explore the prediction of nostalgia on PEB. After controlled gender, age and length of residence, nostalgia significantly predicted PEB,  $\beta = 0.73, p < 0.001, \Delta R^2 = 0.24$ . That is, nostalgic people are more likely to engage in pro-environment behavior.

Table 1: Descriptive statistics and correlations of main variables ( $N = 206$ )

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Gender	-	-					
2. Age	32.73	7.59	-.16*				
3. Length of residence(year)	5.64	1.24	-.01	.52**			
4. Nostalgia	5.11	0.74	-.02	.02	-.02		
5. Place attachment	5.64	1.24	.08	.05	.23**	.27**	
6. PEB	4.75	1.11	.01	-.09	-.12	.49**	.29**

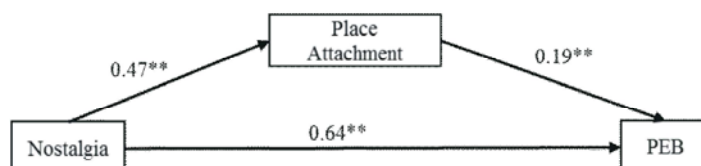
\*  $p < 0.05$ , \*\*  $p < 0.01$ 

Fig. 1: The mediation effect of place attachment

Finally, to examine the mediation role of place attachment, we used Process to conducted mediation analysis. Gender, age and length of residence were controlled as covariates, and place attachment played a mediating effect between nostalgia and PEB,  $\beta = 0.09$ ,  $p < 0.001$ , 95%CI = [0.03, 0.18].

The above results showed that nostalgic people had a higher level of place attachment, so they concerned more about the place they lived, then they would do more pro-environment behavior to improve the natural environment.

## DISCUSSION

Nostalgia, as a sentimental longing for past experience, fosters the social bonds and secures attachment [12,19]. Previous research suggested that nostalgic people were more sympathetic and more willing to help others [13]. Our research further found that the positive impact of nostalgia could transfer into pro-environment field. Specifically, pro-environment behavior could be motivated by nostalgia. When people cherished more about their lovers, friends or someplace they have been, they were more willing to save water or join an environmental organization. Place attachment played a mediation effect between nostalgia and pro-environment behavior. Present results also proved nostalgic individual's attachment were more secure and positive [19]. The attachment of the living area reflects the positive emotion of residence and the extent of overlap between residence and self-concept. Because of accepting of residence place, people were more willing to protect the local natural environment as their own responsibility. In all, attachment to a certain person is conducive to care for

other people [21] while attachment to a certain place is conducive to care for environment.

According to Schwartz's Circular Values Model [24] environmentalism value belongs to universalism values, and reflects an altruistic value orientation [25]. However, this altruism attribute requires individuals to sacrifice their own interests for the benefit of others. For example, saving water or other resources will reduce the comfort of life, participating in environmental organization will sacrifice time, purchasing eco-friendly products will cost more money. Lasaleta *et al.* [20] proposed that there are two important and alternative sources, material wealth and social connectedness. People could get energy from social connectedness given by nostalgic experience, so they wouldn't value personal interests, i.e., their own wealth and money, too much. Nostalgic people cared more for social bonds, loved the place they lived, so they would rather choose natural environment than their own benefits.

Pro-environment behavior can be influenced and motivated by multiple factors [26, 27] and it can be promoted by nostalgia, a bittersweet emotion, as well. Present study supplemented empirical evidence for research in the field of pro-environment and nostalgia and combined the two seemingly separate research fields through place attachment, which was innovative. In addition, this study could provide strategic advice. We appeal employ a variety of strategies to motivate people behave eco-friendly. Environmental publicity advertisements can be seen everywhere, according to our results, these advisements could increase the propaganda of nostalgic attributes, such as "Those were the days: restoring the past of green hills and clear waters". Moreover, nostalgia is also a research hotspot in field of

consumption [28]. Merchants try to promote consumption behavior by giving nostalgic clues. In future, merchants can combine the nostalgic attributes with the pro-environment consumption to motivate the purchase of eco-friendly products.

While there are some drawbacks; Present study only used questionnaire survey to test hypothesis. Future researchers can explore the causal relationship by priming nostalgia. In order to better know the strategy of promoting pro-environment behavior.

### CONCLUSIONS

- Nostalgia was positively correlated with pro-environment behavior. Nostalgic people would like to do more environmental-friendly behavior, such as taking part in environmental organization.
- Nostalgic people are more attached to and concern more about their residence, so they do more pro-environment behavior to protect the natural environment.

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