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Pro-Environmental Behavior from a Social Cognitive Theory Perspective

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Abstract

With growing insight into the harmful impact of the lifestyles practiced in modern societies on the environment, pro-environment behavioral change has become a central focus of not only environmental policy but also applied environmental psychology. An established theoretical framework is needed to understand the development of environmentally friendly behaviors. The objective of this study was to propose a social-cognitive theory perspective as one of the psychology theories that can be applied to explain pro-environmental behavior. Understanding pro-environmental behavior is crucial as it will contribute to theory development related to the pro-environmental behavior management and to inform the policy maker when devising intervention to encourage pro-environmental behavior. Previous studies have used theory of planned behavior, norm activation theory, and values-beliefs-norms theory to explain pro-environmental behavior. However, the use of social-cognitive theory to explain pro-environmental behavior is lacking. We summarize previous studies which have been using social-cognitive constructs and describe a social-cognitive theory perspective for understanding a variety of routes to promote pro-environmental behavior. The theory highlights personal agency as the capacity of individuals to intentionally choose, execute, and manage their own actions to actualize expected outcomes. When applied in the environmental psychology area, the theory argues that individuals with favorable contextual condition and high environmental self-efficacy judgments will have more outcome expectations and will set more challenging goals, and also will engage more in pro-environmental behavior than individuals with a lower perception of their efficacy to perform such acts.

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1. Pro-Environmental Behavior

Scholars have usually adopted various terms to describe behaviors that protect the environment, such as environmentally concerned behaviors, environmentally significant behaviors, environmentally responsible behaviors, and pro-environmental behaviors [1]. Pro-environmental behavior is conscious actions performed by an individual so as to lessen the negative impact of human activities on the environment or and to enhance the quality of the environment [2, 3]. According to Homburg and Stolberg [4], examples of pro-environmental behavior include environmental activism (e.g., active involvement in environmental organizations), non-activist behavior in the public-sphere (e.g., petitioning on environmental issues), private sphere environmentalism (e.g., saving energy, purchasing recycled goods), and behavior in organizations (e.g., product design).

Ramus and Killmer[5] argued that pro-environmental behavior is a special type of pro-social behavior (e.g., a behavior that is directed toward and performed with the intention of promoting the welfare of an individual, group, or organization). Caprara and Steca[6] asserted the existence of pro-social agency through which people tend to perform behaviors of sharing, helping, or looking after others. For this type of behavior to take place, people must feel able to perform the acts and manage the emotions that it generates.

A growing awareness into the harmful impact of human lifestyles practiced in modern societies on the environment widens the focus of applied environmental psychology to pro-environment behavioral change [7]. Environmental psychology examines transactions between individuals and their built and natural environments. This includes investigating behaviors that inhibit or foster sustainable, climate-healthy, and nature-enhancing choices, the antecedents and correlates of these behaviors, and interventions to increase pro-environmental behavior [8].

2. Widely-Used Theories to Explain Pro-Environmental Behavior

Previous studies have used theory of reasoned action, theory of planned behavior, norm activation theory, and values-beliefs-norms theory to explain pro-environmental behavior. However, the use of social cognitive theory to explain pro-environmental behavior is scarce.

2.1. *The Theory of Planned Behavior*

The theory of planned behavior has developed as an extension of Fishbein and Ajzen's [9] and Ajzen&Fishbein's[10] theory of reasoned action, which aims to predict behaviors from attitudes as well as to explain the process through which the two are related. Both the theory of planned behavior and the theory of reasoned action focused on the importance of intention of performing a particular behavior. The addition of a variable concerned with perceptions of control over behaviors, also called perceived behavioral control, served to extend the theory of reasoned action into the theory of planned behavior [11]. The theory has been applied to a large variety of contexts such as sexual behavior [12], driving [13], health-related practices [14], and recently pro-environmental behaviors [15, 16] such as recycling [17], water conservation [18], green consumerism [19], and storm water management [20].

According to the theory, the most proximal predictors of behavior are behavioral intentions, which in turn are influenced by (a) the extent to which individual holds a favorable attitude toward the behavior, (b) individual's perceptions of the norms and conventions regarding the behavior (i.e., subjective norms), and (c) the extent to which the individual perceives the behavior at hand to be under his or her personal control (i.e., perceived behavioral control). The latter relates to an individual's belief that their behavior will successfully promote expected goals.

Several studies have demonstrated the theory's value in predicting pro-environmental behaviors [21, 19, 16]. For example, Boldero[21] found that intentions to recycle newspapers directly predicted actual recycling and that attitudes toward recycling predicted the recycling intentions. In another study, attitudes toward green consumerism, subjective norms, and perceived control were all significantly related to individuals' intentions to consume organic vegetables [19], whereas Taylor and Todd [16] found that both attitudes toward recycling and perceived behavioral control were positively related to recycling and composting intentions.

2.2. *Schwartz's Norm Activation Theory*

Schwartz originally proposed the norm activation model in the late 1960s [22, 23] and then made some refinements to this model in a series of articles in the 1970s [24, 25, 26]. Heberlein[24] suggested that Schwartz's norm activation model would provide a good foundation for investigating pro-environmental behaviors such as recycling and conserving energy because the model was intended to investigate pro-social behaviors.

According to Schwartz's norm activation model, three antecedents of pro-social behavior are: (a) awareness of consequences, (b) ascription of responsibility, and (c) personal norms. The norm activation theory argues that an awareness of potentially harmful consequences and ascription of personal responsibility activate personal norms that control whether a person would act to prevent harmful outcomes. The model is a theory of intervention behaviors which is only applicable when events are already in place that someone believes will lead to harmful effects for others or others and oneself collectively.

The rationality of Schwartz's theory revolves around the intensity of the awareness of consequences and acceptance of responsibility components and the content of an individual's norms. The theory argues that as the salience or intensity of awareness of consequences and acceptance of responsibility increases, the likelihood that personal norms will be increasing. If the content of a person's norms prescribes action, then a person will act to prevent the expected harmful consequences.

Although some earlier research examining pro-environmental behaviors such as recycling applied elements of Schwartz's norm activation model [25], in the mid-1980s the model began to be successfully applied more extensively in a series of studies that examined pro-environmental behavior [26, 27, 28]. Recent studies have acknowledged the utility of the norm activation model in predicting pro-environmental behaviors such as recycling [29] and travel-mode choice [30].

2.3. Values-Beliefs-Norms Theory

The values-beliefs-norms theory argues that prosocial behavior is stimulated by activating norms of helping. These norms stem from three factors: (a) personal values, (b) beliefs that these values are under threat, and (c) beliefs that the individual can take action to reduce the threat and restore those values. The primary differences between the values-beliefs-norms theory and the norm activation theory are that the norm activation theory focuses exclusively on altruistic values or motives whereas the values-beliefs-norms theory includes other values as well, and the values-beliefs-norms theory directly assesses individuals' relevant beliefs.

According to the theory, pro-environmental behaviors stem from acceptance of particular personal values, from beliefs that things important to those values are under threat, and from beliefs that actions initiated by the individual can help alleviate the threat and restore the values [31]. In line with Ajzen's[11] argument that beliefs predict behavioral intentions, which in turn lead to actual behavior, Stern and colleagues demonstrate a causal process in which environmental beliefs (e.g., adverse consequences for valued objects, perceived ability to reduce threat) affect behavioral norms (i.e., intentions), which in turn predict actual pro-environmental behaviors. The values-beliefs-norms theory adds to Ajzen's causal sequence by demonstrating that environmental beliefs are influenced by personal values (e.g., altruistic values).

3. Pro-Environmental Behavior from a Social-Cognitive Theory Perspective

Social cognitive theory explains human functioning in terms of a model of triadic reciprocity[32]. In this triadic reciprocal causation model [32], three factors (i.e., cognitive and other personal factors such as affective states and physical attributes, external environmental influences, and overt behavior) bi-directionally affect one another. The reciprocal interactions among personal variables, the environment, and behaviors do not work simultaneously. As causal factors, they need a time lag to exert their influences.

In the analysis of the personal determinants within the triadic reciprocity, the idea of personal agency is also central to the social-cognitive theory. Personal agency is the capacity of individuals to intentionally choose, execute, and manage their own actions to actualise expected outcomes [33]. From this agentic socio-cognitive perspective, individuals are not only reactive to external influences, but they are also proactive and able to self-regulate [34]. In other words, individuals become both "products" and "producers" of their environments [35]. In exercising agency,

a self-efficacy mechanism holds a prominent role. According to Bandura [36], the goals that an individual develops, the actions conducted to attain them, the persistence in the pursuit of goals, and the thoughts and feelings experienced when executing actions are presumed to be affected by self-efficacy beliefs. Bandura [32] also argued that individuals act on the basis of their judgment about what they are able to do (i.e., self-efficacy), as well as on the beliefs about the expected consequences of their actions. Having high outcome expectations (i.e., a sense that individuals will be successful when their goals are attained) provides motivation during the goal striving process and influences how individuals progress in the career decision making process. In addition, external influences affect human functioning via self-efficacy, rather than directly [34]. One example of an applied version of social cognitive theory is the social cognitive career theory [37], which might also be applied in the environmental psychology. See Fig. 1.

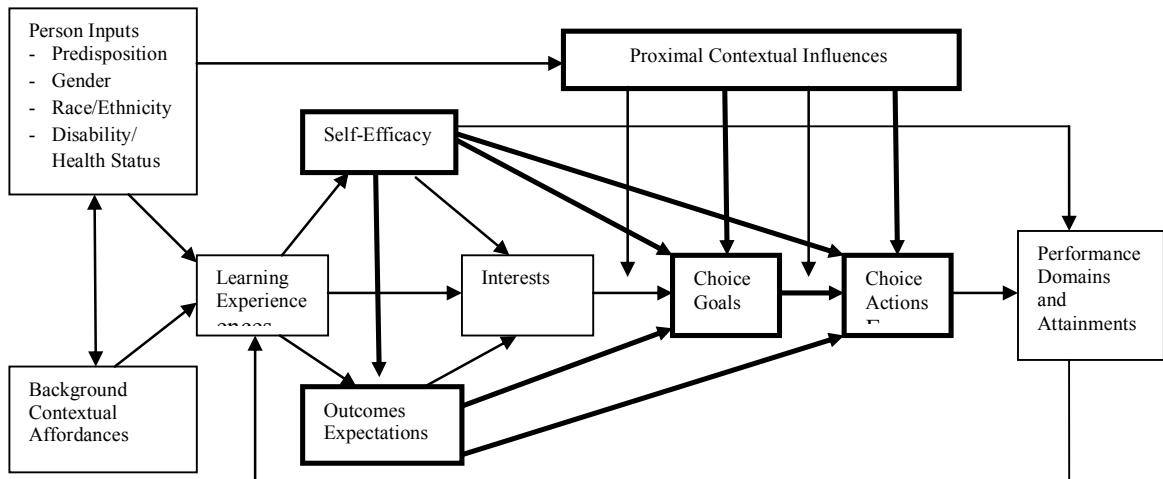


Fig. 1. Person, contextual, and experiential factors affecting career-related choice behavior. From “Toward a Unifying Social Cognitive Theory of Career and Academic Interest, Choice, and Performance,” by R. W. Lent, S. D. Brown, and G. Hackett, *Journal of Vocational Behavior* 1994; 45, p. 93.

In the environmental psychology domain, an area identified in the literature as needing more attention is the role played by elements related to personal agency. Only few researchers have examined the role of personal agency in explaining pro-environmental behavior such as Tabarnero and Hernandez [38], Meinhold and Markus [39], and Homburg and Stolberg [4]. However, these researchers did not use all social-cognitive variables such as self-efficacy, outcome expectations, goals, and actions.

Self-efficacy can be defined as the belief in individual’s own capacity to manage and control the courses of action required to handle certain situations in the immediate future [40]. In the environmental psychology domain, self-efficacy is an individual’s perception of his or her ability to effect positive change regarding the environment. If individuals do not feel capable of performing an act, however high the reward, they will not do so and will not be able to persist in the face of difficulties [33]. They must feel able to perform the act at a certain point in time and to a specific level. Bandura [33] has demonstrated that individuals who initially doubt their capacity feel dissatisfied with themselves and their achievements, and they are likely to lose interest in the task.

However, fewer studies have analyzed the role of self-efficacy in pro-social and altruistic behaviors such as pro-environmental behavior. For example, Meinhold and Markus [39] demonstrated that although self-efficacy did not prove to be an effective moderating variable when predicting environmental behaviors, their findings suggest that perceived self-efficacy as an independent variable is predictive of environmental behaviors. With little to no literature addressing the link between environmental attitudes and behaviors and perceived self-efficacy, this study provides a guide to future research in that self-efficacy appears to play a role in understanding environmental behaviors. Further, Homburg and Stolberg [4] have used self-efficacy scale in their study. Example items is: “I know how to take precautions against pollution in everyday life”. In addition, Tabarnero and Hernandez [38] have also

used self-efficacy for recycling behavior in their study. This measurement of self-efficacy was created following the instructions of the guide to constructing self-efficacy scales. The perception of the capacity to carry out each of the specific recycling acts was evaluated using items such as “To what extent do you feel capable of separating all the paper and cardboard generated in your home and taking them to their respective containers?” Participants were required to reflect on their levels of confidence using a 10-point scale, where response scores ranged from 1= not at all confident to 10 = totally confident.

To the best of our knowledge, no environmental studies have involved outcome expectations. However, this construct is prospective to be used in environmental psychology research. Outcome expectations are beliefs about the outcomes of a course of action [32]. In the environmental psychology domain, this construct can be translated into beliefs about the consequences of pro-environmental behaviors taken by individuals. Through learning experiences, outcome expectations may take various forms of behavior, namely, social effects such as recognition and acknowledgment from others, physical effects such as financial benefit, and self-evaluation that is progressively shaped via individuals’ learning experiences [34].

The next construct is goals. Goals are defined as an individual’s intention to engage in a certain activity or to affect a particular outcome [32]. Taberero and Hernandez [38], for example, have used self-set goals for recycling behavior in their study. Four items were constructed by taking into account the intention to carry out each of the selected behaviors in the immediate future: (1) “Realistically speaking, at what level would you rate your current recycling habits?” (2) “What level would you attempt to achieve in the near future?” (3) “To what extent would you like to try harder to do it better?” (4) “To what extent do you think you will try to maintain this goal in the future?” Participants presented their answers using a 10-point scale, where responses ranged from 1= none or not at all to 10 = all the time.

Goals in turn are translated into actions. In the environmental psychology domain, actions equal to pro-environmental behavior as efforts to actualize goals. Taberero and Hernandez [38], for example have used self-reported recycling behaviors to represent pro-environmental behavior/action. To assess pro-environmental behavior, three items were created to evaluate the level at which the individual engaged in recycling behavior vis-à-vis paper, glass, and packaging: (1) “Do you separate paper and cardboard from the rest of the waste?” (2) “Do you separate glass from the rest of the waste?” (3) “Do you separate plastics, cans, and cartons from the rest of the waste?” Participants indicated their answers on a 5-point Likert-type scale, with response items ranging from 1= never to 5 = always.

The last construct is contextual factors, as the resources individuals perceive as being offered by their environment [41]. In environmental psychology so far, except for a few studies [42, 43, 44], contextual factors have not been examined systematically. Many contextual factors may facilitate or constrain environmental behavior and influence individual motivations [31, 45]. For example, the availability of recycling facilities, the quality of public transport, or the market supply of goods can strongly affect individuals’ engagement in pro-environmental behavior [46]. In some cases, constraints may even be so difficult that behavior change is very costly and motivations make little difference in the environmental outcome [47]. So, it is not only important to consider intra-personal factors such as attitudes, norms and habits, but also contextual factors such as physical infrastructure, technical facilities, and the availability of products. This is remarkable, given that environmental psychology aims to study transactions between humans and their environment, and thus, should be particularly interested in examining the effects of contextual factors on behavior.

4. Conclusion

In addition to the theory of planned behavior, norm activation theory, and values-beliefs-norms theory, social-cognitive theory can serve as an alternative theory to explain pro environmental behavior. The theory proposes that a variety of person, environmental, and behavioral variables influence the pro-environmental behavior process. Self-efficacy (beliefs about one’s ability to successfully organise and perform courses of action) fosters positive outcome expectations (beliefs about the consequences of given actions), and both, independently and jointly, lead to goals (intentions to engage in a particular activity). Goals, in turn, motivate pro-environmental actions. Further, contextual variables may affect individuals’ self-efficacy and also willingness to transform their goals into actions. Goals are more likely to be achieved when individuals experience strong contextual supports and weak barriers. In contrast,

non-supportive conditions can impede these processes of translating goals into actions. This means that the relationship between goals and actions is expected to be stronger in the presence of supportive versus restrictive contextual conditions. Findings from studies that used social-cognitive theory to promote pro-environmental behavior have underlined certain areas on which environmental policies should focus to generate more responsible environmental behaviors such as to create judgments of capacities within individuals, to promote the belief that people can obtain favorable outcomes after initiating or conducting environmental changes, to encourage goal-setting, and to provide supportive contextual conditions. Further studies are suggested to use the social-cognitive theory for explaining pro-environmental behaviour by involving the variables of self-efficacy, outcome expectations, goals, contextual support, and action (i.e., pro-environmental behaviour).

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