

# The Psychology of Pro-Environment Action

Dr. Neelam Rathee<sup>1</sup>, Jasleen Kour<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Psychology, Post Graduate Government College for Girls, Sector – 11, Chandigarh. India. Email: neelamrathee@hotmail.com

<sup>2</sup>Department of Psychology, Post Graduate Government College for Girls, Sector – 11, Chandigarh.

## Abstract:

Materialism, lack of consciousness, and desire for luxury and comfort often lead to mindless consumption leading to the exhaustion of resources more than required. Most of the sustainability problems are rooted in human behaviour (Bamberg, 2003). Theorists believe that people often act as “slaves to their whims” and find themselves “locked in” to unsustainable patterns of living. This barrier stems from the roots of norms, habits, expectations, and societal pressures along with poor policy support. Our lifestyle and our consumption choices directly impact the environment and indirectly affect our society’s well-being making pro-environment action an imperative topic of discussion. Pro-environment action encompasses all the behaviours that result from ecological consciousness. Pro-environment action is more than just an adapted repertoire of actions. It is a mindful and deliberated choice of actions. Resource consumption, natural conservation, and support for environmentally friendly products make up the main three domains of pro-environment action. This chapter provides a comprehensive introduction to the area of Pro-environment psychology. It addresses questions like; why and when people showcase pro-environment action. It throws light on different categorizations of pro-environment action and its psychological determinants. Theoretical models underlying pro-environment behaviour are also discussed and finally, various impending obstacles in the way of pro-environment attitude and action are also identified.

**Keywords:** Pro-environment, environment, ecological conscious, environment conservation

“The environment is where we all meet; where we all have a mutual interest; it is the one thing all of us share.”

~ Lady Bird Johnson

## Introduction

In recent years, India has seen extreme weather conditions. Be it the massive cloudburst that hit Uttarakhand in 2013, causing floods that affected thousands of people and destroyed large agricultural expanses or the extremely severe cyclone Phailin which prompted India's biggest evacuation in 23 years from the coastline in Odisha and Andhra Pradesh to safer places. Then another strong tropical cyclone Hudhud caused extensive damage and loss of life in eastern India during October 2014 and rendered many people homeless. Shockingly, a 2007 report by the Intergovernmental Panel on Climate Change predicted that India will suffer worse consequences from global warming than other parts of the world. Statistics reveal that carbon emission has increased by over 5% in 2015, which contributed to 6.3% of all global CO<sub>2</sub> emissions. Our contribution to carbon footprint as individuals also plays a very significant part in climate change. It is said that most of the sustainability problems are rooted in human

behaviour. But in today's scenario the notion that environmental behaviour is a choice; for those who can afford can put entire humankind under threat. Our dependency on our built and natural environment makes it an inseparable entity distinct from us. Therefore, looking after it becomes our utmost responsibility. The idea of pro-environment action revolves around this concept of acting responsibly towards the environment.

In the midst of all the sad news and dark facts related to the environment, we have also witnessed some exemplary acts of kindness towards the environment. Some positive stories related to environmental conservation have made big news in recent years. For example, in 2015 the villagers of Mahan in Madhya Pradesh managed to prevent their land from being mined for coal. Their protest campaign lasted for two years with the help of the international environmental pressure group, Greenpeace. This campaign gave hope to other tribes in Chhatisgarh to protect their lands from coal mining. One of the most popular faces of Sweden, Greta Thunberg the teenage climate activist brought the world's attention to climate change. The percentage of people turning vegan is increasing every year, with more and more people pledging to eat vegan only (Barford, 2014). All these actions can be termed pro-environment actions.

### **Emergence of Environment Psychology**

Theorists believe that environment psychology has grown out of a major area of environmental sciences, focusing on man as both the "victim and the conqueror" of environmental problems Proshansky et al. (1970). The earliest development in the field of environment psychology began in the 1950s and 1960s centred around the dynamic relationship between man and the physical environment followed by a rise in interest to measure environmental concerns in public. Two directions provided for studying this relationship focus on human behaviour as either the 'result' of the so-called built physical environment (engineered or technological) or as a 'cause' of the natural environment.

Psychology focuses on an individual's relation with his environment in a traditional way, often referring to it as one of reciprocity. Person's environment affects one's behaviour and also one's behaviour impacts one's environment. This reciprocal determinism highlights the environment as one big constituent of human actions and experiences. *Hall (1966) defined this spatial-physical property as 'the third dimension' since its influence and relevance for human psychological processes often tend to remain outside individual and collective awareness.* Some pioneering studies include human relations and work performance (Mayo 1933), social influence networks (Festinger et al., 1950) along with contributions from other disciplines like anthropology, sociology and animal ethology. Interestingly, it is believed that environmental psychology grew out of the inquiry planned by psychologists to find the social relevance of their research findings and present the 'real world psychology' to people. This thrust further developed into what we today call 'contextualism' or the "contextual revolution" (Stokols & Altman, 1987). In the late 1980s and 1990s, the acquisition of environmental attitudes and behaviour was a hot topic. As Frick et al. (1986) observed -

"The objective physical world and its properties have consequences on the behaviour and experience of the person quite often without his 'awareness'... Under these circumstances, the individual can neither identify nor verbalise these influences and indeed it is only by objective analysis of the 'external observer' that this influence of the physical environment on the person's behaviour and experience can be determined. However, the influence of the

physical settings on the behaviour and experience of the person that ‘bypass’ awareness and interpretation by the individual cannot and should not be ignored. (p. 25)”

The focus of applied environmental psychology has stretched towards sustainability-oriented behavioural change. Environmental psychology has widened its scope from studying connections between individuals and natural environments to probing behaviours that restrain or promote sustainable, climate-healthy, and nature-enhancing choices. It has worked to provide theoretical frameworks for its antecedents and correlates as well as actively investigates the area of possible interventions (Gifford, 2014).

### **What is Pro-Environment Action?**

For years, psychologists and sociologists dealt with the question of the roots of direct and indirect environmental actions. Individuals have been extracting resources from the environment for their needs since the beginning of civilisation. Earlier environmental damage was mainly attributed to industrial sectors but lately, a large contribution stems from private sphere activities. McDougall (1993) declared that private households contribute almost 40% to environmental problems. No doubt, consumption is ingrained in our DNA, but individual responsibility in consumption can bring a major positive impact on the environment. This individual responsible behaviour is called pro-environment behaviour or action. Understanding Pro-Environment behaviour becomes crucial for theoretical as well as practical reasons. It can help build theory for pro-environment behaviour management and also guide policy-making at the state level.

### **Two Approaches to Study Pro-Environment Action**

*Impact-oriented approach*- The impact-oriented approach views human action with varying levels of negative environmental impact. This approach focuses on identifying target behaviours that directly or indirectly impact the environment and the strategies to reduce their impact. It overlooks the intention behind the action and works to evaluate how serious its environmental impact is.

*Intent-oriented approach* - The intent-oriented approach uses the actor’s point of view for defining pro-environmental action. If the intention behind the action is in favour of the environment it is labelled as pro-environment. It stresses an actor’s subjective motivation as the defining characteristic.

### **Defining Pro-Environment Action**

The most widely used definition of pro-environment action refers to behaviours that are consciously aimed at reducing a negative impact on the environment (Stern, 2000; Kollmuss & Agyeman, 2002). Different terms have been used across the literature to define pro-environment behaviours, like, environmentally conscious behaviours, and environmentally responsible behaviours. It has also been viewed as a special type of pro-social behaviour (Ramus & Killmer, 2007). According to Homburg and Stolberg (2006), examples of pro-environmental behaviour include environmental activism (like active participation in environmental organizations), non-activist behaviour in the public sphere, and private sphere behaviour (e.g., saving energy, purchasing recycled goods), and behaviour in organizations (e.g., product marketing).

### **Categorization of Pro-Environment Action**

Although the earliest conceptualisation of pro-environment behaviour was mainly unidimensional, theorists have come to accept the multi-dimensionality of the construct. Stern (2000) differentiates three main categories of pro-environment action –

- first, pro-environmental activism (participating in environment clubs, parties, associations and protestations);
- second, non-activist behaviours in the public sphere (filing petitions for environmental conservation or supporting public policies); and
- lastly, private-sphere environmentalism (buying eco-friendly products, pooling a car).

Private-sphere environmentalism has attracted most of the attention from researchers as it has a direct impact on the environment. It has further been subdivided on the basis of decisions they involve; *first* the purchase of major household goods and services like cars; *second*, the use and maintenance of goods that impact the environment directly like ACs for cooling systems; and *third*, waste disposal and lastly green consumerism like purchasing organic food (Stern, 2000). Pro-environment private-sphere behaviours have also been referred to as conservation ‘lifestyle’ behaviours ranging over behaviours recycling, water conservation, energy conservation, environment-conscious transportation, and conscious consumerism. Some scholars have also categorised operationalized behaviours as basic environmental behaviour, decision-making environmental behaviour, interpersonal environmental behaviour, and civic environmental behaviour (Balzekiene & Telesiene, 2012). Another simplified categorisation is a two-dimensional spread between the public sphere and the private sphere. The public sphere includes behaviours that impact the environment indirectly like environment citizenship and policy support. Public sphere behaviours include individual efforts made at the consumer’s end. Four types of pro-environment action have also been recognised by Sun et al. (2012), citizenship behaviours, financial behaviours, persuasion behaviours, and ecological management behaviours.

Owing to the heterogeneous nature of the pro-environment attitude, only a few studies have explored its multi-dimensionality. This multi-dimensionality exists for many reasons. *Firstly*, we must understand that some behaviours are more difficult to carry out than others as is the case with PEBs. For example, managing waste at home might not be easy for an uneducated maid. Similarly, participation in PEBs is also influenced by a wide array of social and structural factors (Gatersleben et al., 2002; Steg & Vlek, 2009). For example, one may socialise to save household energy from childhood making that behaviour relatively easy, whereas one may commit to saving household energy due to financial constraints. Likewise, recycling may be a daily activity for individuals in areas where negative sanctions prevail but not in contexts where such punishments are not present. *Second*, participation in PEB is influenced by both hedonic gain, and normative goals and intent (Stern, 2000; Steg et al., 2014). In many cases, motives centred on personal costs and benefits such as personal satisfaction (i.e., hedonic goals) and saving money (i.e., gain goals) may conflict with motives focused on achieving the collective good (i.e., normative goals) such as clean water and air (Steg et al., 2014). These dramatically different motives not only result in different rates of behavioural expression but also may affect the ways in which people perceive actions and their environmental impacts. In some cases, motivation and intent may be poor predictors of pro-environmental outcomes. For example, individuals may readily engage in actions they

perceive to be environmentally neutral without realising the behaviours generate unintended positive or negative consequences. *Finally*, PEB varies substantially when it comes to the types of impacts (e.g., direct vs. indirect) (Poortinga et al., 2004; Stern, 2000) and scope of influence or specificity (e.g., local to global) (Halpenny, 2010).

The categorisation of pro-environment action is not just conceptually essential but also psychologically meaningful (Stern et al., 1999; Stern, 2000). Researchers have adamantly called for dismembered scales based on intent, impact and feasibility of participation (Gatersleben et al., 2002). This has led to the development of different behavioural typologies and their agglomerations, leading to the absence of a comprehensive tool for effectively measuring the full range of potential pro-environmental behaviours. For example, Stern et al. (1999) focused on consumer choices and environmental citizenship without adequate consideration of lifestyle behaviours (e.g., energy conservation, recycling), whereas Kaiser et al. (2007) focused on lifestyle behaviours and grouped other potentially significant pro-environment behaviour.

### Theories of Pro-Environment Action

A better understanding can be obtained as to why and when people exhibit pro-environment behaviour by studying various theories explaining pro-environment behaviour.

- **Theory of planned behaviour (TPB)** - It is originally based on the theory of reasoned action (Ajzen & Fishbein, 1980). It has widely been used in social psychology to explain deliberate behaviours. Proposed by Ajzen & Fishbein in 1980, the theory states that an individual's intention to perform a behaviour will depend on a subjective norm (a belief that others expect him to perform the behaviour) and his/her attitude (positive or negative) towards that behaviour. A positive attitude towards a behaviour is equivalent to perceived benefits from the outcome (expectancy-value theory). A negative attitude is related to adverse consequences of the behaviour. This intention is correlated to actual behaviour. However, later research found that intention does not always result in action. The theory underwent a change to add the dimension of perceived behaviour control that connects to Bandura's self-efficacy theory (Bandura, 1977). For Bandura, self-efficacy is the most important antecedent for behavioural change. This explains the ease and difficulty of carrying out a behaviour. Driven out of self-efficacy theory, it explains the belief to successfully carry out behaviour to attain the desired goal (Ajzen & Fishbein, 1975). TPB also considers the influence of social norms and normative beliefs as important for behaviour. Perceptions of friends, family or society in general influence one's behaviour.
- **Norms activation theory** - This theory suggests that individuals who undertake pro-environment behaviour tend to have some altruistic and moral reasons. Norm Activation (NAM) is used to model prosocial behaviours. It takes personal norms to be the only direct determinant of behaviour (motivation sustainable). The development of a personal norm (PN) depends on the knowledge of consequences (AC) and ascription of responsibility (AR) (Schwartz 1997, 1992). The model works through the function of anticipated emotions, mainly guilt or pride, in pro-environment behaviour. In this way, NAM proposes three antecedents to altruistic actions, awareness of consequences (AC), an ascription of responsibility (AR) and personal norm (PN) (Bliesner et al., 2014). Often this model is integrated with the TPB model in the study of pro-environment behaviour. NAM has been

used to study environmental protection and household energy adaptations, and to explore alternatives to car use (Stern et al., 1981; Black et al., 1995; Bamberg and Schmidt, 2003).

- **Value belief norm theory** - Proposed by Stern (2000), the Value Belief Norm (VBN) theory argues to be the best explanatory account of private sphere environmentalism and its behavioural indicators (Stern 2000). VBN is an attempt to construct social-psychological models of pro-environmental consumer behaviour. The major premise of this work is that pro-social attitudes and personal norms are the best predictors of pro-environment behaviour. The theory postulates three factors for the activation of norms; personal values, a belief that personal values are under threat and acceptance of responsibility (Sawitri et al., 2014).
- **Attitude behaviour context (ABC) theory**- In an attempt to overcome the internalist-externalist dichotomy of social psychological literature, the ABC model was developed (Stern, 2000). Attitudinal variables include specific personal beliefs, norms and values, along with general 'pre-dispositions' to act. Contextual factors comprise influences such as incentives (monetary), physical capabilities and constraints, laws, public policy support, and interpersonal influences (social norms). The structural dynamics between attitudes (internal factors) and contextual (external) factors is a key element of this model. According to Stern (2000), behaviour results from the interaction between attitude and contextual factors. The theory suggests that behaviour is neither automatic nor deliberate (Stern, 2000; Triandis, 1977). Attitude is composed of beliefs and outcome evaluation. It includes beliefs, norms, and evaluations of the pros and cons of an action. Attitudes are at the heart of any study that explains or predicts behaviour (Ajzen & Fishbein, 1980). Behaviour modification becomes easy if people find the benefits of an action outweigh its cons. Contextual factors consist of the motivators and obstacles to action in the environment. The financial cost, convenience, ability, public policy support and social expectations and norms influence behaviour. It is found that people, despite knowing, do not necessarily engage in sustainable consumption because they think they do not have opportunities or the resources for alternative consumption (White, 2013).
- **Theory of interpersonal behaviour**- One of the limitations of Stern's ABC model is overcome in Triandis's theory of interpersonal behaviour where the role of habits is discussed (Triandis, 1997). He proposed that an integrated model of environment-conscious behaviour includes four factors - attitudes, contextual factors, personal capabilities, and habits. Intentions become the immediate antecedent of the behaviour, and habits also mediate the behaviour. Intentions have three antecedents, namely attitudes, social factors and affect. Triandis' model is the first model to study the explicit role of emotions on pro-environment behaviour (Triandis, 1997). According to the theory, emotions are assumed to be distinctive from rational evaluations of consequences and can include positive and negative responses of varying intensities. The theory indicates that affect is an unconscious input to decision-making.

### **Determinants of Pro-Environment Action**

Questions related to factors of pro-environment action have long been of great interest to many academics. Several research attempts have been made to answer these questions. Among these studies, a number of models with different theoretical frameworks have developed.

- **Environment knowledge**

It is defined as 'general knowledge of facts, concepts, and relationships concerning the natural environment and its major ecosystems' (Fryxell & Lo, 2003). A deficit of environmental knowledge is one of the major reasons for irresponsible consumption and the failure of mitigation strategies. For example, if one does not know that CFCs released from air conditioners lead to global warming, one will not cut down its consumption. Environment knowledge has been found to impact one's environmental concerns, and in a few cases, it also triggers norm activation processes. Many comparative studies have revealed that one factor that differentiates environmentally responsible consumers from others is knowledge of the problem and ways to mitigate it (Stern, 1992). It is believed that such knowledge speeds up the process of norm activation and leads to stronger positive intentions towards the environment. Another well-correlated factor to knowledge is environmental awareness. Many studies have shown the indirect effect of environmental awareness on behaviour modification (Sundblad et al., 2008). It is a promising factor for the prevention of environmental abuse and neglect.

- **Values**

They are guiding principles of life often taking the shape of long-term life goals (Schwartz, 1992). In pro-environment action studies, it has been confirmed that values play an integral part. Environmental concern is the most popular correlate of pro-environment action. However, exploring why some people are more concerned about the environment than others is interesting. It is found that concern stems from value orientations. The most popular three values related to responsible consumption are egoistic, altruistic, and biospheric. Egoistic value orientation predisposes one to responsible consumption because they know opposite actions or attitudes will harm them personally. Altruistic value orientation predisposes one to responsible consumption because one considers the well-being of others as a priority. Biospheric value-oriented people engage in pro-environment action for the sake of the ecosystem in general. Young (2000) found that people engage in pro-environmental actions as they find them worthy and consistent with the transcendent values that make them feel good. Thompson & Barton (1994) have developed scales to measure different motives underlying pro-environment behaviour, ecocentric, anthropocentric and apathy for environmental issues.

- **Norms**

They are defined as an expectation held by an individual about how he or she ought to act in a particular social situation (Schwartz, 1977). Two types of norms are generally talked about, namely personal and social norms. Personal norms are described as a feeling of moral obligation towards an action, whereas, social norms or subjective norms refer to social pressure made up of cognitive representations of what one's significant others would typically think, feel, or do in a given situation. These mental representations are used by people as reference points to guide and assess their own thoughts, feelings, and behaviour (Shwartz, 1997). Subjective norms are further classified as subjective injunctive norms and subjective descriptive norms (Fishbein & Ajzen, 1980). Injunctive norm refers to behaviours commonly approved or disapproved and subjective descriptive norm refers to behaviours actually performed by significant others in a given social environment (Kurusu, 2015).

- **Locus of control**

We are endowed with two types of loci of control, one external and the other internal. People with an internal locus of control believe that they can achieve the set goal through their efforts, while people with an external locus of control attribute success to an external force. Research shows that the internal locus of control is well correlated to PEB (Hines et al., 1987). People with an external locus of control also show PEBs through externalising responsibility (like protesting against governments) (Lorenzoni et al., 2007). Locus of control has been found to influence the impact of emotions on environmental action. A decisive factor for action is the locus of control since strong feelings when accompanied by helplessness will fail to lead to action.

- **Economic Motivation**

It is found that a positive attitude towards the environment is related to the cost-benefit ratio related to it. Humans are rational consumers and they remain rational when it comes to pro-environment action. Research has shown that people often engage in those pro-environmental behaviours that cost them the least. This includes economic as well as psychological costs (time and energy needed) (Kollmuss and Agyeman, 2002). For example, one may engage in proper waste disposal but refuse from cutting down on car usage and opting for lesser vacations abroad. Likewise, cheaper products have often overruled the tendency towards environmental conservation. To suggest, it is conveyed that one easily chooses one product over the other, one being eco-friendly and the other not, if it benefits him financially. The economic factors that go behind the decision-making process are sometimes complex to understand. To contradict our earlier statement, we can also say that humans are rationally bounded. Yet we cannot deny the fact that using financial incentives can be very useful to engage people in pro-environment behaviours. The interplay of Economic factors with social and psychological factors is also underrated. For instance, in some communities, the pay-per-bag policy fees did not reduce waste and increased recycling behaviour slightly (Ackerman, 1997). While in other communities, the policy successfully reduces waste. For some, the pay-per-bag policy made people unwrap products at the market itself further causing a change in redesigning the packaging policy.

- **Emotional Involvement**

It refers to the effective dimension of pro-environment action. Emotional involvement is important for forming pro-environment attitudes and intentions. People who have an emotional connection to nature are also subject to emotional reactions when faced with environmental exploitation. Some common emotions related to the experience of environmental degradation are fear, anger, guilt, and sadness. Kollmus & Agyeman (2002) hypothesised that fear, sadness, pain, and anger trigger pro-environmental action more than guilt. Women tend to be more emotionally attached to nature than men. Primary emotions lead to psychological reactions like denial, apathy, and delegation. For instance, climate sceptics ignore or reinterpret the climate change urgency facts that IPCC circulates every year. This is an example of sheer denial or refusal to acknowledge the problem. Apathy and resignation have been linked to feelings of helplessness, pain, anger and external locus of control. Such feelings often stand as obstacles to proactive environmentalism. Such a person might still perform some pro-environmental actions out of a feeling of moral obligation but is very unlikely to become very proactive. Delegation is related to blaming others for



environmental problems. It is intended towards the removal of guilt and refusal to accept personal responsibility. Such people are ready to make any personal sacrifices for the sake of the environment.

- **Personality**

Personality influences our cognitive styles, habits and actions. Two famous models, Big five and HEXACO have been used to link personality with environmentalism. Although causal relations between the two are scarce, openness has the strongest relation to pro-environment intentions and action (Markowitz et al. 2012). Conscientiousness has been linked to ecological consciousness defined as citizenship behaviours (Jagers & Matti, 2010). Honesty humility trait from HEXACO has also been well associated with pro-environment action (Markowitz et al., 2012). Researchers have also found that the combination of Conscientiousness, extraversion and agreeableness makes up a proactive personality, that is, defined by proactive participation in environmental change (Bateman & Crant, 1993). This personality has been linked to higher levels of environmental knowledge.

- **Intentions**

Ajzen (1980), in his theory of planned behaviour, confirmed the relationship between intentions and conscious consumer behaviour. Behavioural intentions are defined as the degree of an individual's determination and willingness to perform specific behaviour, which is often determined by attitudes and subjective norms (Polonsky et al., 2012). More willingness increases the chance of performing the behaviour (Ajzen, 1980). A meta-analysis showed that behavioural intentions mediate the effect of psychosocial factors on eco-friendly behaviour (Bamberg & Moser, 2007).

### **Challenges to Pro-Environment Action**

It is believed that the current economic order is anathema to environmental preservation. It is endowed with the idea of accumulation of more and more capital at the expense of the ecological system. It demands a continuous purchase of products and services leading to the unfair extraction of natural resources (Foster & Clark, 2010). As it is impossible to abandon the current economic order, humans must put a limit on conspicuous and mindless consumption. Decisions at both the political and individual level need to be couched with environmental concerns more than ever.

Despite widespread awareness regarding the deteriorating health of the ecosystem, we suffer from the lack of responsible action at an individual level called environmental apathy. Theorists suggest two major explanations for environmental apathy (Abraham & Pane, 2015). First, environmental goals are not considered important in front of other 'powerful' goals, for instance, comfort. In this constant affair of competition among goals, only the winning goal gets implemented. The second explanation suggests that we are hardwired to only pay attention to immediate threats and not global and gradual ones. These biases prevent pro-environment action.

Other barriers like the cost of pro-environment action, locus of control, risk perception, proximity to threat and disconnect from nature are equally relevant (Ajaps & McLellan, 2015). No doubt, the prices of eco-friendly products often outweigh the moral considerations leading to inaction. A lack of responsibility to acknowledge that our actions impact ecological crises posits another major barrier to pro-environment intentions. Having an external locus of control in the face of crisis facilitates feelings of helplessness that again

is detrimental. Often sceptics, who deny climate change, reject human activities as a cause of it. The biggest challenge for policymakers is to bridge the gap between perceived risks and actual risks.

## Conclusion

Literature states that economic activities are not the only source of environmental degradation as people's choices and actions in daily life equally impact the environment. It has become imperative to move towards cleaner sources of energy, demands more powerful environmental policies and adopts pro-environment behaviour in personal spheres for all. Pro-environment action calls for a holistic perspective to well-being that suffices personal as well as environmental welfare.

*“You cannot get through a single day without having an impact on the world around you. What you do makes a difference and you have to decide what kind of a difference you want to make.”*  
 ~ Jane Goodall

## References

- [1] Ackermann, F. (1997). *Why do we recycle? Markets, values, and public policy*. Washington, DC, Island Press. <https://islandpress.org/books/why-do-we-recycle>
- [2] Ajaps, S., & McLellan, R. (2015) “We don’t know enough”: Environmental education and pro-environmental behaviour perceptions. *CogentEducation*, 2(1). DOI: [10.1080/2331186X.2015.1124490](https://doi.org/10.1080/2331186X.2015.1124490)
- [3] Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior* (1st ed.). Pearson.
- [4] Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological Bulletin*. [doi:10.1037/h0076477](https://doi.org/10.1037/h0076477).
- [5] Balzekiene A., & Telesiene, A. (2012). Explaining Private and Public Sphere Personal Environmental Behaviour. *Social Sciences* 4(74), 7-19. DOI: 10.5755/j01.ss.74.4.1031
- [6] Bamberg, S., & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology*, 27(1), 14–25. <https://doi.org/10.1016/j.jenvp.2006.12.002>
- [7] Bamberg, S., & Schmidt, P. (2003). Incentives, morality, Or habit? Predicting students’ car use for University routes with the models of Ajzen, Schwartz, and Triandis. *Environment and Behavior*, 35(2), 264–285. <https://doi.org/10.1177/0013916502250134>
- [8] Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- [9] Barford, V. (2014). *The rise of the part-time vegans*. BBC News Magazine Retrieved from: <https://www.bbc.com/news/magazine-25644903>
- [10] Bateman T.S., Crant M. J.(1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behaviour*, 14(2), 103–118.
- [11] Black, J. S., Stern, P. C., & Elworth, J. T. (1985). Personal and contextual influences on household energy adaptations. *Journal of Applied Psychology*, 70(1), 3–21. <https://doi.org/10.1037/0021-9010.70.1.3>

- [12] Bliesner, A., Liedtke, C., Welfens, M., Baedeker, C., Hasselkuß, M., & Rohn, H. (2014). "Norm-oriented interpretation learning" and resource use: The concept of "Open-didactic exploration" as a contribution to raising awareness of a responsible resource use. *Resources*, 3(1), 1–30. <https://doi.org/10.3390/resources3010001>
- [13] De Young, R. (2000). New ways to promote proenvironmental behavior: Expanding and evaluating motives for environmentally responsible behavior. *Journal of Social Issues*, 56(3), 509-526. <http://dx.doi.org/10.1111/0022-4537.00181>
- [14] Festinger, L., Shachter, S., & Back, K. (1950). *Social pressure in informal groups*. Stanford, CA: Stanford University Press.
- [15] Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behaviour. The reasoned action approach*. New York: Psychology Press.
- [16] Frick, D., Hoefert, H. W., Legewie, H., Mackensen, R., & Silbereisen, R. K. (Eds.). (2013). *Quality of urban life: Social, psychological, and physical conditions*. Walter de Gruyter.
- [17] Fryxell, G.E., Lo, C. H. (2003). The Influence of environmental knowledge and values on managerial behaviours on behalf of the environment: an empirical examination of managers in China. *Journal of Business Ethics*, 46, 45–69 <https://doi.org/10.1023/A:1024773012398>
- [18] Gatersleben, B., Steg, L., & Vlek, C. (2002). Measurement and determinants of environmentally significant consumer behavior. *Environment and Behavior*, 34, 335-362. <http://dx.doi.org/10.1177/0013916502034003004>
- [19] Gifford R. (2014). Environmental psychology matters. *Annual Review of Psychology*, 65, 541-579.
- [20] Hall, E. T. (1966). *The hidden dimension*. New York: Doubleday.
- [21] Halpenny, E. A. (2010). Pro-environmental behaviours and park visitors: The effect of place attachment. *Journal of Environmental Psychology*, 30(4), 409-421.
- [22] Homburg A., Stolberg A. (2006). Explaining pro-environmental behavior with a cognitive theory of stress. *Journal of Environmental Psychology*, 26, 1-14.
- [23] Jagers S.C., Matti S. (2010). Ecological citizens: Identifying values and beliefs that support individual environmental responsibility among Swedes. *Sustainability*, 2, 1055–1079.
- [24] John, B.F., Bellamy, Clark, B., York, R. (2010). *The ecological rift: Capitalism's war on the Earth*. New York: Monthly Review Press.
- [25] Juneman A., & Pane, M. (2013). Apathy Towards Environmental Issues, Narcissism, and Competitive View of the World. *Procedia - Social and Behavioral Sciences*, 101(6), 44–52. DOI: 10.1016/j.sbspro.2013.07.177
- [26] Kaiser, F. G., Hubner, G., & Bogner, F. X. (2005). Contrasting the theory of planned behavior with the value-belief-norm model in explaining conservation behavior. *Journal of Applied Social Psychology*, 35(10), 2150-2170.
- [27] Kaiser, F. G., Oerke, B., & Bogner, F. X. (2007). Behavior-based environmental attitude: Development of an instrument for adolescents. *Journal of Environmental Psychology*, 27, 242-251.
- [28] Kollmuss, A., & Agyeman, J. (2002). Mind the Gap: Why do people act environmentally and what are the barriers to pro-environmental behavior?

- Environmental Education Research*, 8(3), 239–260.  
<https://doi.org/10.1080/13504620220145401>
- [29] Kurisu, K. (2015). *Pro-environmental Behaviours*. Springer Nature.
- [30] Lorenzoni, I., Nicholson-Cole, S., & Whitmarsh, L. (2007). Barriers perceived to engaging with climate change among the UK public and their policy implications. *Global Environmental Change*, 17(3–4), 445–459.  
<https://doi.org/10.1016/j.gloenvcha.2007.01.004>
- [31] Markowitz E. M., Goldberg L. R., Ashton M. C., & Lee K. (2012). Profiling the “proenvironmental individual”: A personality perspective. *Journal of Personality*, 80, 81–111. <https://doi.org/10.1111/j.1467-6494.2011.00721.x>.
- [32] Mayo, E. (1933). *The human problems of an industrial civilization*. New York: Macmillan.
- [33] McDougall, G. H. (1993). The green movement in Canada: Implications for marketing strategy. *Journal of International Consumer Marketing*, 5(3), 69–87.
- [34] Polonsky, M. J., Vocino, A., Grau, S. L., Garma, R., & Ferdous, A. S. (2012). The impact of general and carbon-related environmental knowledge on attitudes and behaviour of US consumers. *Journal of Marketing Management*, 28(3–4), 238–263.  
<https://doi.org/10.1080/0267257x.2012.659279>
- [35] Poortinga, W., Steg, L., & Vlek, C. (2004). Values, environmental concern, and environmental behavior: A study into household energy use. *Environment and Behavior*, 36(1), 70–93.
- [36] Proshansky, H. M., Ittelson, W., & Rivlin, L. G. (Eds.). (1970). *Environmental psychology: Man and his physical setting*. New York: Holt, Rinehart and Winston.
- [37] Ramus, C. A., & Killmer, A. B. (2007). Corporate greening through prosocial extra-role behaviours – a conceptual framework for employee motivation. *Business strategy and the Environment*, 16(8), 554–570.
- [38] Sawitri, D. R., Hadiyanto, H., & Hadi, S. P. (2015). Pro-environmental behavior from a social cognitive theory perspective. *Procedia Environmental Sciences*, 23, 27–33.  
<https://doi.org/10.1016/j.proenv.2015.01.005>
- [39] Schwartz, S. H. (1977). Normative influences on altruism. *Advances in Experimental Social Psychology*, 10, 221–279.
- [40] Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1–65.
- [41] Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values? *Journal of Social Issues*, 50(4), 19–46.
- [42] Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology*, 29(3), 309–317.  
<https://doi.org/10.1016/j.jenvp.2008.10.004>
- [43] Stern, P. C. (2000). New environmental theories: Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56(3), 407–424.  
<https://doi.org/10.1111/0022-4537.00175>
- [44] Stern, P. C., & Gardner, G. T. (1981). Psychological research and energy policy. *American Psychologist*, 36(4), 329–342. <https://doi.org/10.1037/0003-066x.36.4.329>

- [45] Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human Ecology Review*, 6(2), 81e97.
- [46] Stokols, D., & Altman, I.M. (1987). *Handbook of environmental psychology*. John Wiley & Sons.
- [47] Sun, Y., Song, J., Song, D., 2012. An empirical study on influencing factors of residents' environmental behavior. *Chinese Journal of Management*, 9 (1), 144–150.
- [48] Sundblad, E. L., Biel, A., & Gärling, T. (2008). Knowledge and confidence in knowledge about climate change among experts, journalists, politicians, and laypersons. *Environment and Behavior*, 41(2), 281–302.  
<https://doi.org/10.1177/0013916508314998>
- [49] Triandis, H.C. (1977). *Interpersonal Behaviour*. Monterey, C.A: Brook/Cole.
- [50] White, C. (2013). Globalizing responsibility: The political rationalities of ethical consumption. *Social & Cultural Geography*, 14(6), 731–732.  
<https://doi.org/10.1080/14649365.2013.777193>