Karen Hamann, Anna Baumann, Daniel Löschinger

Psychology of Environmental Protection

Handbook for Encouraging Sustainable Actions

Initiative Psychologie im Umweltschutz e.V.

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Verlag | ID: 128-50040-1010-1082

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Bibliografische Information der Deutschen Nationalbibliothek:
Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet unter http://dnb.d-nb.de abrufbar.

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oekom verlag, Gesellschaft für ökologische Kommunikation mbH,
Waltherstraße 29, 80337 München

Wissenschaftliche Begleitung: Dr. Gerhard Reese
Layout, Satz und Infografiken: Andreas Bauermeister, Weimar
Illustrationen: Verena Herbst, Leipzig

Druck: Bosch-Druck GmbH, Ergolding
Dieses Buch wurde auf 100%igem Recyclingpapier gedruckt.

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ISBN 978-3-86581-799-0

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Preface by the Author

Dear readers,
After half a year of volunteer work in Costa Rica, I returned with many impressions that motivated me to contribute to a more sustainable world. I had seen rivers that had dried out to ground-level over many years; freshly planted trees that turn into dying branches because of drier rainy seasons; turtles that took a long and dangerous journey – swimming past shipping nets and plastic bags in the water – and whose breeding places are often pillaged by humans after they finally reach them; wonderful beaches deprived of their beauty and habitability due to huge amounts of plastic bottles and old shoes. All that made it more than clear to me: it is time for environmental justice!

I already understood many of the environmental problems from my life in Germany: polluted streams, overfilled food chain dumpsters, mobility infrastructures that favor cars over humans, factory farming hidden behind walls and far away from public sight, an increasing energy usage and consumption at the expense of our natural environment – we see all this and more right outside our doors. If we broaden our perspective, we can add all the people in countries of the *global south*[+] that, due to lifestyles and increasing wealth in industrialized countries, lose their home, their living standard and at worst their lives. In this way, we can perceive the far-reaching consequences of human action on this earth and on humankind itself.

In the media, we will find these impressions presented in terms like climate change, global increase in resource consumption, biodiversity loss, global social injustice – but as most of us know, these words cannot do justice to what is really happening. For this reason, impressions similar to these encouraged all of us to behave environmentally-friendly and foster the environmental protective actions of others.

+ *The term global south refers to a disadvantaged societal, political and economic position in the global system. Global north on the other hand is a position with many advantages. […] Whereas the term »developing countries« portrays a hierarchical and eurocentric idea of »development« to which other countries have to adapt to, the conceptual pair of a global south and north tries to describe differing political, economic and cultural positions in a global context. A differentiation of north and south is not necessarily meant geographically. Retrieved from ↗ www.glokal.org/publikationen/mit-kolonialen-gruessen*

Since spring 2014, I've therefore been working on this handbook of environmental psychology. It is meant to give environmentally committed people confidence in areas in which their environmental actions are already effective. Foremost, it will point out many possible ways to spread environmental protection in a meaningful and fruitful way. In early summer 2014, the handbook turned into a team project: Anna Baumann, environmental scientist with an emphasis on environmental communication, dedicated herself to text editing and public relations with enormous endurance. Daniel Löschinger contributed his substantial experience in environmental psychology as well as his diligence and creativity to the writing and designing process. Andreas Bauermeister bestowed the handbook with a design that facilitates the comprehension of scientific psychological topics. Together with many supporters, we reached our crowdfunding goal in only three days. Various people with psychological or environmental backgrounds constantly supported the project with their feedback and expertise. All of them made sure that you can now start reading the final handbook. For their support, I want to thank them with all my heart!

Karen Hamann,
Chairwoman of Initiative
Psychologie im Umweltschutz (IPU) e.V.
Jena, March 2016

Preface by Professor Ellen Matthies

It's a great pleasure for me to be asked to write a foreword for this handbook. First of all, I'm delighted that this handbook is remarkably successful in integrating knowledge of environmental psychology for an interdisciplinary context and for practitioners. It is convincing not only regarding the structure, which is oriented towards an integrated model, but in its entire construction as well – beginning with inspiration for readers to formulate their own questions, up to the final guidelines for practical work. Here we have a handbook that integrates knowledge and guides us in our environmental actions.

Second of all, the developmental background of this handbook is clear evidence that environmental psychology is successfully influenced by young and committed members of our community. For more than 20 years now, students have embarked on new topics and challenges earlier than the academic establishment, undeterred by disciplinary boundaries. That is clearly what this handbook stands for, published by students and committed volunteers.

And finally this handbook shows in an exemplary manner not only psychological theory and potentials of implementation, no, it naturally identifies the limits of a mere psychological approach, as should be the case in good inter- and transdisciplinary discourse – and it opens up a truly relevant perspective: that everyone engaging in this field has to reflect, again and again, the precise context of action. The question of critical reflection of your own actions, their explanation and possible effects, direct or indirect, is necessary for everyone committed to sustainability.

»A recommendable handbook for everyone dedicated to and interested in environmental psychology, especially those who want to base their action on reflection and good reasons!«

Ellen Matthies,
Professor of Environmental Psychology
At the Otto-von-Guericke-Universität Magdeburg
Magdeburg, March 2016

Introduction

The impact of human behavior on global ecological problems cannot be denied. Time and again, energy savings and efficient production lose the race against the ever-increasing consumption of energy and resources. While light bulbs and televisions have become more efficient, we use them more often or leave our devices in stand-by mode.

At this point, it's not about producing efficiently anymore. For comprehensive ecological and social sustainability, we need further reductions in consumption, a kind of satisfied frugality, and if possible, a rapid change in lifestyles of people living in industrialized societies. It is all about individual and collective behavior change – and, therefore, about psychology.

This raises various important questions: How can we motivate people to adopt a more environmentally-conscious behavior? How do we get from knowledge to action? And how can we turn good intentions into deeds? This handbook summarizes possible answers from professional psychological literature for you. In order to work on an environmentally benign world, environmentalists need knowledge and methods with which they can successfully foster effective environmental behavior and break psychological barriers. This is how this little book originated – with the goal to make psychology of environmental protection accessible for environmentalists in a scientifically profound and memorable manner.

It will equip you with the psychological knowledge necessary for planning and implementing small projects and large campaigns. You will gain security in actions that are already designed effectively. Moreover, the great variety of measures to encourage environmental protection will be demonstrated. To avoid unintended reactions and ensure an effective implementation of your action, this handbook illustrates complex theoretical relationships with a practical orientation. It is less about mere educational work on environmental issues, but rather about concrete measures to build up motivation and enable a change of behavior. Hopefully, this handbook contributes to creating a network of scientists and practitioners. Most of all, it will strengthen your notion of thoughts, feelings, and actions in the sustainability domain.

Why is Environmental Psychology Important?

Underlying research and practice of environmental psychology, there are several presuppositions that also apply for this handbook:

- **Environmental problems are human-made.** Many environmental problems of our time, such as pollution of water and air, or overconsumption of resources and energy, have a human source.[64]

- **Psychology knows the human mind.** Psychology, the science of human perception and conduct, plays a central role in environmental protection. Like no other natural science or sub-discipline of humanities, it investigates human behavior, family life, educational processes, attitude-behavior relationships, group influences, and decision making.[44]

- **Individual behavior counts.** Not all people are in a position to have a direct influence on our governments or business policies. However, everyone is a consumer, uses energy, so everyone can choose to live a sustainable life.[57]

- **We need more than technological progress.** Technologies alone cannot create change to a sustainable path. They have to be implemented and accepted by humans. In many cases, increasing consumption counteracts gains in efficiency due to technological developments, leading to so-called *rebound effects*.[53] An example: I buy an energy-efficient car. At first glance, this action seems environmentally-friendly. Even so, I may drive a little bit more often now, because I feel good about already having done something good for the environment. Hence, potential or already achieved savings in energy are lost. Moreover, the production of a modern car uses up enormous amounts of energy. Therefore, societal change in the direction of a more sufficient, frugal lifestyle is necessary, and this type of change is more likely with the help of psychological knowledge.

- **Measures of environmental protection cannot solely be limited to education.** Many environmental actions have the goal of encouraging behavioral change. A popular assumption is that additional knowledge will lead to the desired changes in actions. Knowledge is often a neces-

sary precondition for change – but it is not sufficient, because behavior is influenced by many additional factors.[5] Thus, it is important to have in mind a complex psychological model of behavior that includes further motivational components.

What is Environmental Psychology?

Environmental psychology is a discipline addressing the thoughts, feelings and actions of individuals in their environment as well as human-environment-interactions. Psychology of environmental protection is a sub-discipline of environmental psychology. In this field of research, psychological theories and models are applied to environmental protection and explain environmental actions and experiences in the context of many influencing factors.

Environmental psychology points out how environmentally-friendly behavior can be measured by psychological research, e. g. via questionnaires and behavioral observations; which dispositions precede pro-environmental conduct; and how behavior can be altered. The important area of behavioral change will be presented in this handbook with the following guiding question:

How can we make it easier for people to behave environmentally-friendly?

The authors of this book share the opinion that this goal should always be communicated honestly and openly to the people in focus. Therefore, manipulative approaches are not included in this handbook, or they will directly be exposed as such. A sustainable lifestyle has the potential to give your life a lot of meaning and fulfillment. However, if it is associated with consequences perceived as negative, it will not be implemented in the long term.[40] In accordance with *positive psychology* approaches, this handbook intends to support environmental protection that goes along with increased quality of life in as many areas as possible

What is the Focus of this Handbook?

This handbook focuses on the practical knowledge of environmental psychology. In doing so, its scope is limited. In order to stay handy and succinct, it only captures a psychological perspective. Associations with politics, sociology, or natural sciences are not mentioned. In addition, large systematic analyses of environmental problems on the individual or societal level won't be found in this handbook. Instead, it is a collection of valuable psychological insights for practical use on the individual level – without claiming, or wanting to claim, completeness of contents.

This handbook is made especially for actions of environmental groups and organizations, or of communities. Step by step, it will bring you closer to the topic of »individual behavior change«, so that you can handle it with more security, effectivity, and self-confidence in the future.

Hopefully, you will find answers and inspirations for many questions that you've already asked yourselves and that are relevant for your environmentalist work. For example: What is the relationship between environmental intentions and actual implementation? What are the factors that influence human behavior? What pitfalls are there that environmentalists have to consider while planning an action? How can we break habits? Did you know that temporary incentives usually don't have a long-lasting effect? Or that the influence of other people's behavior is often underestimated? What are *coping*, *prompts*, and *cognitive dissonance*? And how do they relate to questions of sustainability and environmental protection?

What does this Handbook offer You?

- A psychological model that explains sustainable behavior
- Scientific background and specific studies of environmental psychology research
- A feeling for the variety of influences underlying our personal environmental motivation
- Hints, tips, and practical examples for everyday environmentalist work
- Useful steps and tools for the implementation of your own environmental project

What cannot be Found in this Handbook?

- Data and facts about environmental topics like climate change or resource consumption
- Manipulative strategies to make others act sustainably
- Models of the societal macro level
- Responses of humans to climate change
- Human (e. g. demographic) traits connected to environmentalism[31]

Here, you have the opportunity to capture questions concerning pro-environmental motivation that you are personally interested in. In a later chapter, you will be reminded of them. Until then, you will hopefully have gained some inspiration for possible answers.

Questions to environmental psychology

1. .....

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2. .....

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3. .....

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My possible answers

1. .....

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2. .....

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3. .....

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A Model for Encouraging Sustainable Actions

All terms that are explained in this handbook are printed in italics where they are defined and where they are mentioned in other chapters. Additionally, you will find the most important scientific terms in a catchword index at the end of this book.

The model that will explain psychological influences on environmental behavior to you is an extension of the *integrative influence model of pro-environmental everyday behavior*[51] by Ellen Matthies. Her model unites two well-known psychological models: the Theory of *Planned Behavior*[2] and the *Norm-Activation-Model*[70]. These models have repeatedly been tested and scientifically explored – also in the field of pro-environmental behavior.[+]

The model we introduce, like the model proposed by Matthies, has not been scientifically tested as a whole.[51] However, the single components of the Theory of Planned Behavior and the Norm-Activation-Model have been empirically examined. Our psychological behavior model has the primary purpose of helping you understand the influences of individual conduct. It is not a stage model, so there is no stage that has to be reached in order to proceed.[4] Rather, it is a model with many factors that can influence each other and that finally constitute environmental motivation and action.

Each of the following chapters refers to one component of the model and explains it thoroughly. Measures to encourage pro-environmental behavior are illustrated for each factor. In most cases, a theoretical introduction is followed by examples. Practical examples are marked in the text with a little berry . If you're interested in examples first, you can go on a berry hunt.

Our psychological model for explaining sustainable behavior follows similar assumptions as Matthies' model and will guide you throughout this handbook. In the figure on the next page, it is depicted schematically. All

+ *The Theory of Planned Behavior has been implemented successfully for many pro-environmental behaviors such as usage of energy-saving light bulbs, reduction of meat consumption, and use of public transport.*[34] *The Norm-Activation-Model is useful in explaining behaviors like energy saving, or willingness to donate to environmental organizations.*[51]

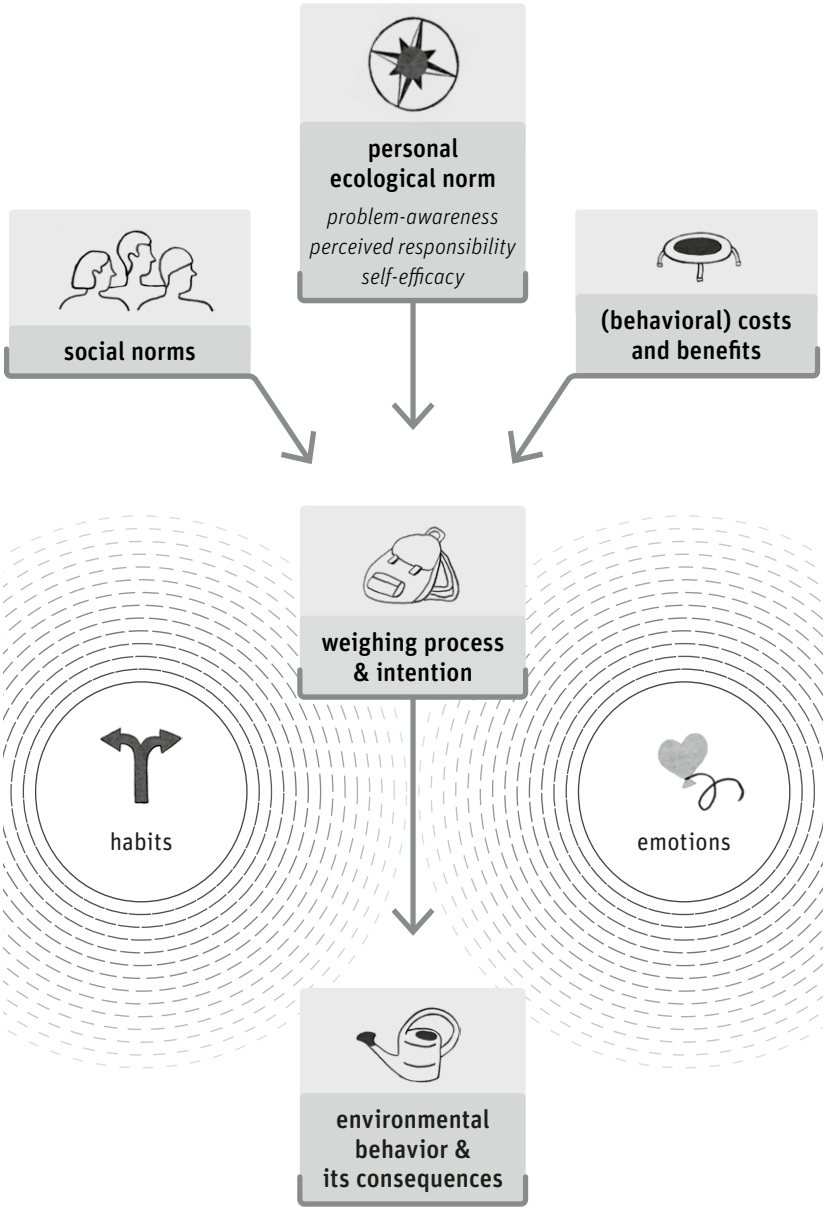
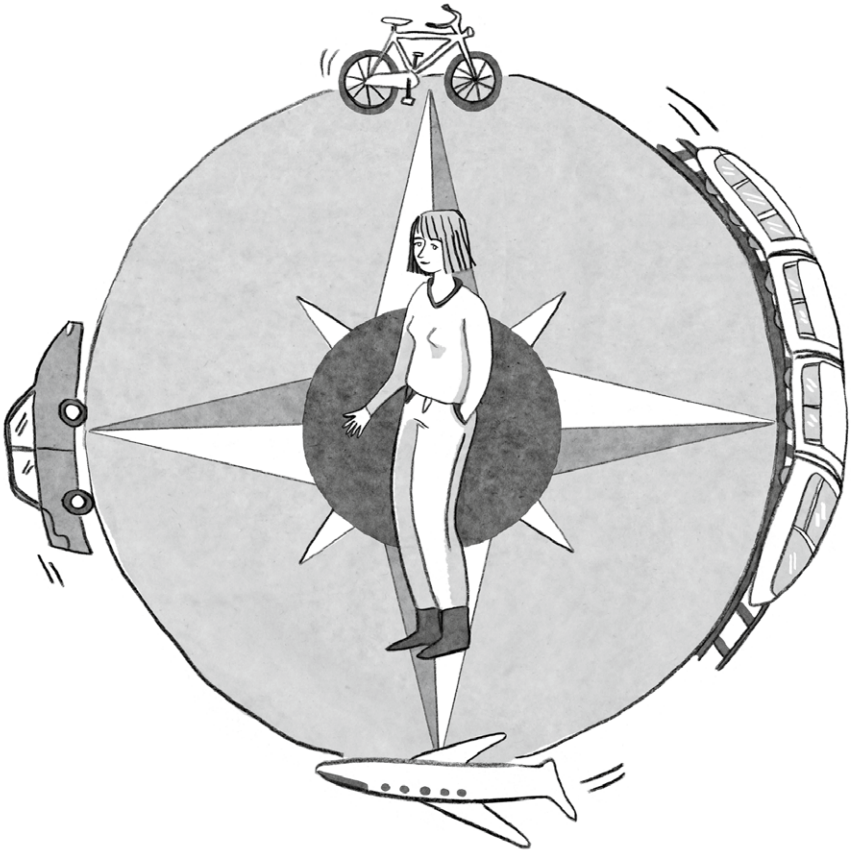


Figure 1. Psychological model for explaining sustainable actions.

of the terms in it will be explained comprehensibly in the course of this handbook. Beforehand, here is a little overview of the model components:

Problem-awareness, *perceived responsibility*, and *self-efficacy* have an influence on the *personal ecological norm* (Chapter 1). Various motivators – like the *personal ecological norm*, influences of *social norms* (Chapter 2), and the *(behavioral) costs and benefit* (Chapter 3) – are weighed against each other and finally lead to an *intention* (Chapter 4) to act sustainably or unsustainably in a certain situation. *Intentions* then influence the actual *pro-environmental behavior* that in turn has consequences (Chapter 5). Moreover, habits basically influence every stage of the decision-making process (Chapter 6). All of the introduced components carry the assumption that humans make rational decisions. For this reason, they only contain emotions to a certain limit. However, since emotions have great effects on environmentally-friendly behavior, they are included as an extra factor in Chapter 7, according to the book »Psychology for a Better World«[35] by Niki Harré. In Chapter 8, you will find a figure comprising all model components and connecting them to each of the described measures for promoting sustainable behavior. At the end of this book, you will find tools to utilize your new environmental psychology knowledge for your practical work. There are guidelines for environmental projects (Chapter 9) and a so-called canvas in which you can fill in all of the psychological aspects of your environmental campaign (Chapter 10).

Pro-environmental behavior: Environmentally friendly behavior is defined as behavior that »harms the environment as little as possible, or even benefits the environment«.[74]



1

Personal Ecological Norm
An Inner Compass

Am I aware that nature and the lives of many people or other living beings are in danger? Does my consciousness tell me that it is not only others but myself, who is responsible for doing something against that state? And do I trust myself with this enormous task? Do I have hope that I can make a change? Environmental psychology deals with questions like these by examining our personal ecological norm. Matthies defines a personal ecological norm as the perceived obligation to behave environmentally-friendly.[51] It is activated by the following influencing factors: *problem-awareness, perceived responsibility*, and *self-efficacy*.

These elements can be fostered in certain situations and thus can lead to activation and extension of the personal ecological norm. So to speak, they are leverage points with which we can strengthen the inner will to act in a pro-environmental manner. The following passages describe them as elements of the personal ecological norm and portray measures for their promotion.

1.1 Problem-Awareness
Knowledge about an Endangered Environment

Problem-awareness constitutes the perception that our natural environment is in danger.[51] Among other things, this perception includes our knowledge about the negative ecological consequences of unsustainable behavior.

How can we promote problem-awareness?

⊕ Communication of problem-knowledge

Information brokerage of environmentally relevant topics is currently the most popular strategy to encourage people to pro-environmental behavior. Information brochures, posters, or presentations are supposed to make us aware of human (and therefore our own) influence on natural environments. Within this sphere, two types of information can be distinguished: problem-knowledge and action-knowledge.[75]

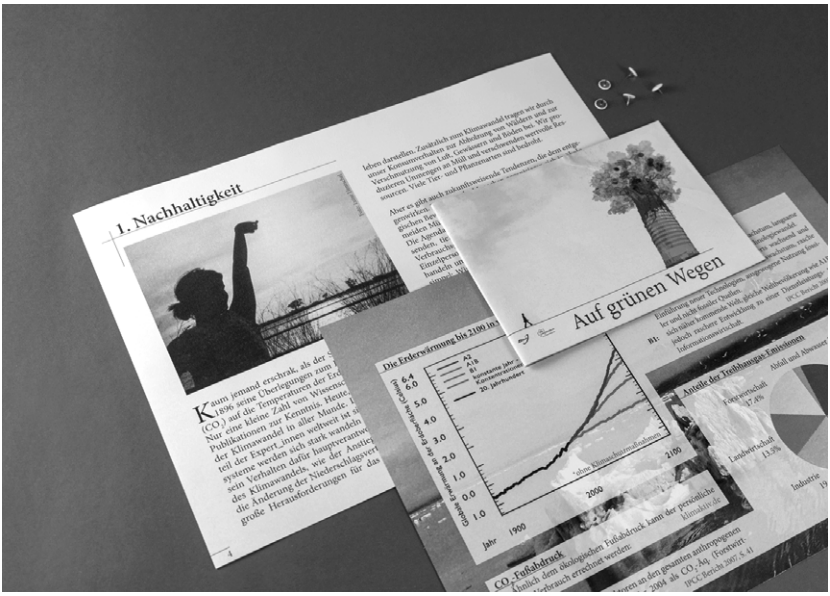


Illustration 1. Exhibition »On Green Paths« by the environmental group of the Friedrich-Schiller-University Jena. Freely retrievable at ↗ www.umwelt.stura.uni-jena.de/downloads/Auf_gruenen_Wegen.pdf

Problem-knowledge is knowledge about existing environmental problems (discussed in this chapter), whereas *action-knowledge* is all about possible pro-environmental actions (see Chapter 1.3: *self-efficacy*). But does mere information really have the desired effect?

In an article by Bamberg and Möser, a relationship between knowledge and environmentally-friendly behavior was found.[5] However, this association was comparatively low. Generally, simple information campaigns rarely lead to a change in behavior.[74] An example: An environmental group prepares a poster exhibition in their town hall informing about the negative social and ecological consequences of the consumption of clothing. If the group only relies on raising problem-knowledge, visitors probably won't change their behavior as a consequence. Perhaps because they don't know how to change it or don't believe that their actions make a difference.

Bottom line: Information campaigns alone don't create a transformation!

Nevertheless, we won't discard information brokerage. Knowledge about environmental problems is an important base to understand why a behavioral change is necessary. Hence, the goal should indeed be to equip people with knowledge, so that they can develop an opinion of the problem. At this point, please consider previous knowledge of your target group. Here are some hints for effective information brokerage:

Hints for communicating problem-knowledge

- **Attention.** For knowledge to be absorbed, our target group has to have a sufficient amount of attention.[28] Small details can be crucial: Up-to-date references can create attention in a PowerPoint presentation. Catchphrases and appealing poster layouts are essential. At a workshop, it may be important to offer something to drink. Also, interesting and creative questions can provoke attention, for example »What do you think? How long can your computer battery last with the energy saved by recycling a water bottle?«[41]

- **Involvement.** The more we are involved, and affected personally, the more attention we pay to environmental information.[28] Involvement can be promoted with e. g. a reference to a local institution such as the school, university, or workplace. If I want to address and reduce the usage of paper cups at my workplace, I could provide information about resources used per paper cup. Moreover, I could discuss the amount of paper cups used at my specific workplace in order to raise awareness for a problem in which my target group is involved. The most important thing is not to blame anybody there directly.

- **Graphic, comprehensible, by all means honest.** That is how information should be presented in order for people to understand it, judge it as credible, and place their trust in it.[28] The communication of information about climate risks should be unemotional and fact-based.

- **Skillfully debunking myths.** If I want to dismantle a myth and correct false information, there are three practical hints. I should (1) focus on the actual facts and not on the myth, (2) give a warning that false information

is about to come up each time the myth is mentioned, and (3) present an alternative explanation with reference to the false information.[17] E. g. the first hint makes clear that a myth should not be included in the title of an article. Of the title »Only a Fraud? The Fight Over Climate Change Continues«, mostly »Climate Change« and »Fraud« stand out. If the article argues against climate change skepticism, it would be better to endow a title with actual facts and debunk the myth in a later passage of the article.

Reading tip: If you would like some detailed explanations with practical examples, the »Debunking Handbook« is perfectly suited. Written by John Cook and Stephan Lewandowsky, the six-page document can be downloaded for free: ↗ www.skepticalscience.com/Debunking-Handbook-now-freely-available-download.html

- **Combination with further strategies.** Information brokerage alone doesn't lead to a change. Nonetheless, in combination with further measures that are described in the course of this handbook it is still very valuable. In Chapter 1.2, a study will be described in which information is successfully combined with public *self-commitment* in a newspaper.[44]

Bottom line: Conveying information alone rarely leads to a change in behavior. Therefore, it should be combined with additional measures of motivation and encouragement. If you implement an information campaign, keep in mind that your target group has to be attentive, and feel involved. Preferably, information is graphic, comprehensible, and honest. Myths should be debunked in a special fashion.

1.2 Perceived Responsibility
A Question of Conscience

If I'm aware that my own behavior is relevant to ecological damage and the solution to environmental problems, I feel a strong responsibility.[51] Psychologists refer to *perceived responsibility* as something that emerges if problems are attributed to the self rather than to others (e. g. industries or governments).[68] A number of studies show: people who feel individually responsible for the environment are more willing to behave environmentally-friendly.[16] A driving factor behind perceived responsibility is a feeling of guilt that arises if someone ascribes damaging conduct to themselves.[5] We should always consider carefully whether we want to highlight feelings of guilt in campaigns or actions, because guilt is a negative emotion. Chapter 7 depicts that negative emotions often lead to *coping strategies* which may counteract pro-environmental behavior.

How can we encourage perceived responsibility?

An advisable method to strengthen perceived responsibility in the long term and foster a behavioral change is teaching environmental *values*.[51] For psychologists, values are guiding principles such as freedom, equality, or environmental protection that manifest themselves as goals across a variety of situations.[69] People differ in how important certain values are for them. If you are interested in fostering a change in values, we recommend the open source book »Meeting environmental challenges: The role of human identity« by Crompton and Kasser.[18] The following passages will go into further strategies to strengthen perceived responsibility.

⊕ Self-awareness and cognitive dissonance

Self-awareness is a method to strengthen perceived responsibility. By adjusting our current behavior with goals about how we want to be, we gain awareness of our actions.[75] It can be fostered e. g. by looking at yourself in the mirror, by discussions about your own visions and ideals, or by specific questions like »In which domains do I act environmentally-friendly, in

which not?« and »Which values do I want to stand up for, and to what extent do I already do it?«. The two questions »Who am I?« and »Who do I want to be?« are contrasted in the process of self-awareness.

If we encourage people to be more self-aware, they will eventually sense differences between their own actions and pursued values – that is when psychologists speak of cognitive dissonance. *Cognitive dissonance* is an uncomfortable state of tension which urges us to act according to our values.[25] As a consequence, we will try to either adjust our values to our behavior, or adjust our behavior to our values.

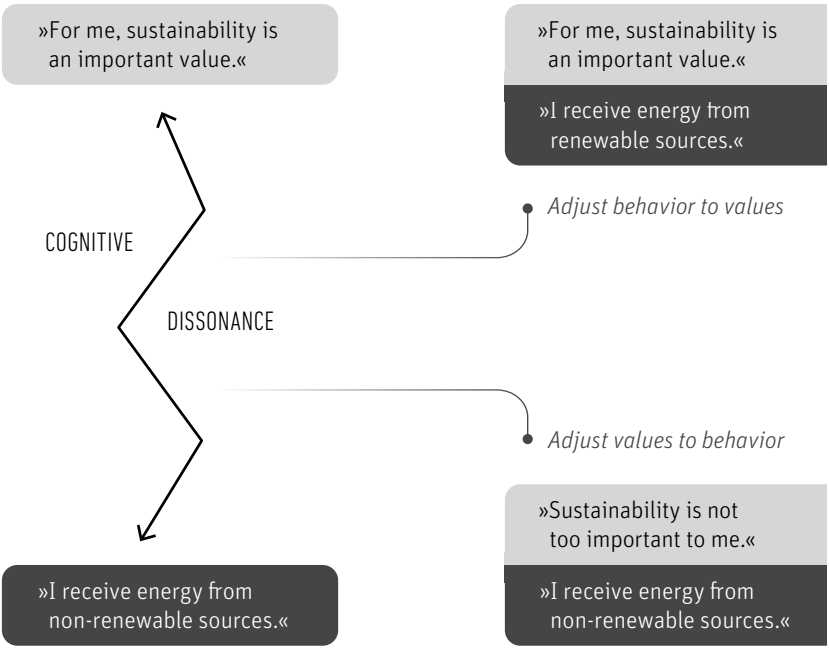


Figure 2. Theory of Cognitive Dissonance.

If pro-environmental values are already part of my self-concept, they can be activated by elevated self-awareness and cause a change to a more environmentally sound lifestyle. Accordingly, cognitive dissonance turned out to be the most effective means to promote pro-environmental behavior in a meta-analysis+ – e. g. in comparison to *feedback or incentives*.[57]

While cognitive dissonance is indeed a strong influence, it should be used with caution, because there is a chance that it will »backfire«. If I don't spot a realistic option to adjust my actions to my values, maybe I won't change my actions but rather redefine my own values. Viewing environmental damage caused by my own conduct might give rise to seeing environmental values as something less worth striving for. More information about this unfavorable feedback is described in Chapter 5 (*pro-environmental behavior and its consequences*).

Bottom line: Self-awareness and associated states of cognitive dissonance support us in synchronizing our values with our actions and the other way around. If I already carry strong pro-environmental values, they could cause more pro-environmental behavior. However, they could also make me refrain from pro-environmental values instead.

+ *A meta-analysis is an integrative research method that summarizes results of primary studies using statistical methods.*

Self-commitment

Another strategy for the promotion of perceived responsibility is a self-commitment (or only »commitment«). In psychological terms, a self-commitment is a verbal or written assurance or promise to change my own behavior.[1] In most cases it comes along with a certain goal, e. g. to reduce your energy consumption by 5 percent. Self-commitments can be private (e. g. signing a letter) or public (e. g. sharing in social networks).[1]

Clayton and Myers assume that self-commitment possibly shifts our motivation from the outside (gain approval of others) to an inner source (keep your own promise and achieve your own goal).[16] Thus, a great potential for positive emotions arises.[16] This is a clear strength of self-commitment and that's why it's the strongest measure to encourage behavior change in the long run. For example, a citizen makes a promise at a small-town gathering to organize a public food sharing event. His efforts for the project will thus be strengthened and he will feel more responsible for sustainable actions in the food domain. Wearing t-shirts, badges, or stickers of environmental organizations can also increase a feeling of self-commitment.[8] Reviews and meta-analyses found a high correlation of self-commitment and the desired environmental behavior.[16] We can design commitments effectively if we keep in mind the following rules:

- Written is better than verbal[16]
- Public is better than private[16]
- Voluntary is better than involuntary[16]
- A combination with information about reasons why to behave sustainably is effective[47]

Bottom line: If we commit ourselves to an environmentally-friendly behavior, it is more likely that we will implement it. Self-commitments are especially effective if they are written, public, voluntary, and combined with information.

STUDY »Saving energy for the newspaper«

A study by Pallak, Cook, and Sullivan explored to what extent a self-commitment can lead to a change in energy consumption.[58] 202 house-owners in Iowa received advice on how to save energy and were asked to reduce their energy consumption. There were three experimental groups of which one group didn't make a self-commitment (control group) and another group made a private commitment (experimental group 1). A final group was informed that their names would be published in a newspaper – causing a feeling of public commitment (experimental group 2). Within one month, experimental group 2 (public commitment) had consumed significantly less gas and energy than experimental group 1 (private commitment) and the control group (without commitment). Even after telling subjects of the second experimental group that their names wouldn't be published in the newspaper, they kept up their energy saving behavior during the winter months that followed. It seems that self-commitment enables individuals to form inner beliefs that in turn manifest themselves in a new identity. This new identity then fosters pro-environmental actions.[8]

1.3 Self-Efficacy
Trusting our own Abilities

Especially in the face of environmental damage, a feeling can arise that our own actions are only a drop in the ocean. And when I think that my own actions don't have a relevant impact on environmental protection, I don't see »any sense in acting at all, anyway«. Therefore, it is important to give people a chance to experience self-efficacy. From a psychological perspective, self-efficacy is the certainty that I can achieve a goal with my own abilities – according to the motto »I can do it«.[6] In environmental contexts, *self-efficacy* consists of **abilities** to behave sustainably, and the **perception** of one's own abilities.

For example, if I participate in a repairing workshop for household devices and feel that I'm capable of repairing electrical devices afterwards, I gained self-efficacy in this domain. Thus, my motivation for pro-environmental behavior is strengthened, because I can, and I also know that I can, repair vacuum cleaners or hand-held blenders on my own, instead of just buying new ones. A relationship is found between the belief in having an influence on environmental problems and political engagement for environmental topics.[72] In a review, researchers concluded that self-efficacy is more important for environmentally-friendly behavior than knowledge.[37] Generally, some people have higher confidence in their abilities than others. Nevertheless, self-efficacy can be fostered as well.[16] Especially the feeling of *collective efficacy* – that we as a group can achieve goals together – should be highlighted at this point. It can have an even stronger influence on pro-environmental behavior than self-efficacy.[38] Put differently: If we as individuals fear that our own actions are only a drop in the ocean, we as a group can still have hope of attaining our goals.[7]

An important factor influencing self-efficacy is *action-knowledge*, which is defined as the knowledge of behavioral options in a specific context. It is the counterpart to problem-knowledge described in Chapter 1.1. Problem-knowledge contains information about negative ecological consequences of environmentally damaging behavior and tells me **why** I should act sustainably. Action-knowledge, however, is oriented towards solutions and involves information about how to behave pro-environmentally, and which behaviors have a big impact.

How can we foster self-efficacy?

⊖ Demonstrate behavioral options and their impact

To strengthen a feeling of self-efficacy, we can provide useful knowledge about opportunities for action. In order to do so, behavioral options have to exist to begin with (excursus 1.4: behavioral context). If we want to foster self-efficacy in the mobility domain, for example, citizens could receive information about already established environmentally-friendly infrastructure like public transportation and cycling paths. This is even more useful if infrastructures are better than expected by most people.[51] The very knowledge about opportunities for action can lead to a feeling of control over the situation and environmental behavior.[29]

Moreover, it is vital to provide protagonists with information about the effectiveness of specific behaviors.[73] If I receive a catalogue with energy-saving measures without knowing which of them have the highest impact, I will easily feel overwhelmed. Since I don't feel in control of my actions, the catalogue will be less likely to change my behavior. And even if I do it, I might focus on turning off my light bulbs but show complete disregard for effective measures like raising the temperature of my fridge. It is important to communicate information about the impact of pro-environmental behaviors, so that decisions can be made in terms of significance. If possible, statistics should be given in units per person, because they support a feeling of making a difference.[41]

Bottom line: It is relevant that we know of and are able to evaluate environmentally-friendly opportunities of action and their impact.

Skill training

In some cases, we will have to practice abilities of pro-environmental behavior first. For this reason, those who want to act need orderly instructions showing them how they can precisely enact a certain behavior. These could be, for example, information that window shutters can be used to cool your workplace, because the sun will be reflected, or advice on how to separate certain types of plastic waste.[57]

Also, joint actions with an exchange of experience are helpful, e. g. vegetarian cooking nights or collective work in bicycle repair shops or community gardens. These exchanges of experience are good opportunities to acquire skills and facilitate sustainable actions. Alongside the effects of the training itself, we might experience self-efficacy, feelings of social belonging, and positive emotions that will be associated with sustainable behavior. ❦ A nice example is a campaign by a youth group of friends of the earth Germany that connects lectures with closely related actions in their project »WELTbewusst erLEBEN«[+] (translates into »live and experience earth-consciousness«). Thus, participants can join events like preparing vegan spread or clothes exchange parties right after a presentation.

During skill training, we should especially pay attention to offering participants many experiences of success – if we want to strengthen their motivation in the long-term. Therefore, it is useful to fix targets that we want to achieve with our event in advance.[61] From a psychological point of view, it is reasonable to set small goals and to take small steps on the path to sustainable lifestyles. This way, participants frequently receive positive feedback about their small achievements,[29] which eventually leads to a heightened motivation and obtainment of environmental goals. ❦ The campaign »Small Steps«[++] considers the significance of small goals (see the picture on the next page). Furthermore, passing along these small cards is a means of fostering perceived collective efficacy.

Where people want to acquire skills, it can make sense to encourage them to make mistakes. In dealing with those mistakes, teachers should give strategic and emotional support.[65] When I'm teaching gardening, a reflection session about difficulties can be enlightening. Rather than endlessly worrying

+ ↗ *www.bundjugend.de/projekt/weltbewusst-erleben*
++ ↗ *www.smallsteps.eu/plastikfreikarten*

Illustration 2. The campaign of ›small-steps‹ distributes playing-cards. This card e. g. says »I've bought recycling-paper«. The backside provides background information about the environmental issues.

about a failed organic farming project, practical solutions can and should be focused in a group process.

If there is a certain degree of difficulty connected to a task, this helps us to solve these and similar tasks competently in our everyday life.[65] To support a transfer to everyday actions, it is important that e. g. a sewing workshop doesn't only use already-prepared sewing machines, but that preparation is taught, too. Experiencing autonomy and own skills should occupy center stage.

Also, the temporal dimension of skill training should be considered. It is always useful for an acquired skill to be put into practice soon.[65] For example, if I run a vegetarian cooking class for kids who usually don't have to prepare their own food at home, the action loses its effectiveness. However, if I create a presentable recipe book together with the children that they can take home for their parents, I prompt joint cooking in those families and strengthen the kids' cooking skills on a long-term basis.

Bottom line: A skill training should (1) progress in small steps, (2) contain various experiences of success, (3) allow mistakes and reflect them constructively, (4) have an appropriate level of difficulty so that a transfer to everyday actions is made possible, and (5) consider temporal proximity between training and actual implementation. When acquiring a new competence it is effective to convey information about exactly this competence.

Hints for communicating action-knowledge

- **Relevance and usefulness.**[65] Relevance of an action as well as its helpfulness for the environment and the participant should be highlighted in every skill training.

- **Positive and negative examples.**[65] Action-knowledge and skills can be acquired more easily if they are presented with a positive as well as a negative example of implementation. This handbook tries to apply this approach.

- **Suggest simple behaviors.**[28] Action-knowledge is good in fostering individual behaviors that don't involve a big effort (like recycling at public trash bins). For more challenging behaviors, we can use other measures like skill training.

- **Utilize pre-knowledge.**[22] To make use of previous knowledge is often illustrated with the words »starting from where people are«. For instance, if I enquire about pre-knowledge of people attending my skill training for bicycle maintenance, I can adapt it to their current state of knowledge and avoid possible frustration, or boredom.

- **Foster transferability.**[22] When communicating action-knowledge, we need to pay attention to applicability in everyday life and facilitate it with systematic comparisons with other situations. Moreover, it can be helpful if an information event is followed by direct actions, so that participants can immediately experience what they've learned. For example, attendants of a hike for herbs who receive information about certain plants should not only learn which salads they can prepare with it. The instructor should at the same time inspire to think of further

ways of using these herbs. If possible, participants can try different herbs along the way and at the end of the hike, the group could make a tea with the gathered herbs.

- **Information tailored for the specific context of action.**[47] Information about behavioral options and their impact are overall more effective if they are suited for specific situations we encounter and, in line with this, provide guidelines for action.

See also: »Hints for communicating problem-knowledge«
(Chapter 1.1: *problem-awareness*)

Bottom line: Action-knowledge should be simple, relevant, and useful for our target group. In a skill training, action-knowledge should be built on previous knowledge, facilitate transferability, and include positive and negative examples. It works best when it is tailored to specific action contexts of our target group.

STUDY »Secrets from the garage«

A study by Daamen, Staats, Wike and Engelen examined whether it is specific or general information that is more likely to promote environmentally protective behaviors.[19] In a pre-study, they captured which behaviors were most likely to lead to oil pollution in garage repair and assembly shops. One third of all managers of those garages were confronted with information that was tailored specifically to their own garage context. The specific message contained information about (1) behaviors that could avoid oil pollution and were already applied by employees, and (2) at which points improvements are necessary. Another third of all employers received a general message about the most frequent sources of oil pollution in repair and assembly shops and potential strategies for avoiding them. Finally, another third were not provided with any information, acting as a control group. The researchers showed that specific information is significantly more effective than general or no information. Above and beyond, the two conditions of general and no information didn't differ significantly. It can be concluded that information that doesn't suit our direct living environment has few effects on behavioral change. Information that is adapted to our individual context can be viewed as a type of feedback.

⊜ Feedback

As described above, we are motivated if we know that we carried out a behavior successfully.[16] We want to know if our actions are effective enough to make a difference – feedback can provide us with this knowledge. For instance, ecosia+, an environmentally-friendly online search engine, shows me with every search how many trees are planted with my help. However, in many environmentally relevant areas like water or energy usage flat rates and confusing bills make it difficult to obtain feedback about our own actions and their consequences. If I try and reduce the time I spend taking a warm shower, how and, most of all, when do I know exactly if there has been any effect? In environmental psychology research, many studies have been conducted to examine the effect of feedback on energy saving behavior. Often they provided information about a household's energy consumption more frequently than usual.[1] Feedback had a positive effect on energy saving behavior, because households were able to associate certain changes in behavior directly with the amount of energy saved.[1] For example, if I turn up my heater less during the week in winter time and at the end of the week I can directly check how much energy reduction was caused by my behavior change, I experience control. The effectivity of this data feedback increases if it is combined with social reward, or sanction. This can happen via a happy smiley face when energy is saved or a sad face when energy consumption increases. Another option is social comparison with energy saving behaviors of neighbors. An average energy consumption of the neighborhood can be calculated and made public (Chapter 2: *social norms*).[44] Overall, feedback is more effective the more frequently it is presented.[1]

Bottom line: Feedback about our behavior as well as behavior changes can strengthen self-efficacy beliefs. Frequent feedback in combination with social norms is especially effective.

+ *Ecosia is a search engine that donates 80 percent of its profits to forestry programs all over the world.* ↗ *www.ecosia.org*

STUDY »How much energy do I really consume?«

In a study by van Houwelingen and van Raaij, households received various kinds of feedback on the cost of their gas usage.[79] Therefore, this study also used a monetary incentive to motivate behavior change. Households had the aim to reduce their daily energy consumption. For this, they received information about energy saving options in advance. The researchers also provided households with different types of feedback: steady feedback (via a monitor presenting the daily gas consumption), monthly feedback (via a message), self-regulated feedback (via instructions about how to read a gas meter), or no feedback. Results show that households with steady feedback reduced their gas consumption the most (12.3 percent), followed by those with monthly feedback (7.7 percent) and self-regulated feedback (5.1 percent). The least energy was saved if the household only received information on energy saving options in advance (4.3 percent). From their results, researchers draw the conclusion that feedback is more effective the more frequently it is given.[1]

1.4 Context of Action
The World around Us

A topic that psychology research often neglects is the context in which environmentally-friendly or damaging behaviors take place. The task of changing situational circumstances is in many cases ascribed to other scientific areas. Nevertheless, its relevance is so obvious that it definitely needs to be included in this handbook. Action contexts can either enable or disable certain environmental behaviors (respectively, facilitate or impede). Thus, the situation has a major influence on pro-environmental behavior and its motivation.[74] Take for example the availability of recycling bins, the quality of public transportation, and the choice as well as prices of sustainable and fair products in supermarkets (also see Chapter 3: *(behavioral) costs and benefits)*.[74] In some cases, it is not us that have to change but the circumstances that we live and make decisions in. What options are there to encourage pro-environmental behavior with a contextual change? How can we integrate the context of action in psychological approaches?

⊜ Create possibilities

In order to make pro-environmental behavior more likely, we need practicable opportunities to really behave sustainably. In some cases, infrastructural measures are missing, in other cases a lack of financial measures is apparent.[74] If we want people to use trains instead of cars, we have to advocate an expanded railroad system and affordable traveling fees – for example by means of petitions, demonstrations, or support of certain political parties. Further examples of a change in context are:

- Provision of public book trading shelters
- Opening of a vegan restaurant, or introduction of vegetarian and vegan meals in cafeterias and canteens
- Management of second-hand stores that make it possible to reduce clothes consumption
- Facilitating credits so that people can afford building a solar panel

- Repair stores and cafés where you can easily mend your own electrical devices and furniture
- Cater for consumption-free leisure time: exciting playgrounds and well-equipped district libraries

Before trying to foster pro-environmental behavior in people, we should ask ourselves if they have an opportunity to act at all. If this is not the case, our first action should involve creating exactly this opportunity.

Bottom line: We should not only focus on changing people's behaviors, but also keep in mind the context of action and options that it offers.

Facilitate action with situational changes

If we can influence the context of action and thus facilitate pro-environmental behavior, we should definitely do it. The easier and more pleasant a sustainable alternative is, the more likely we are to choose it (see Chapter 3: Making it easy). In the same way, it is worth making environmentally damaging behavior more difficult and uncomfortable.

A good example of how to change a situation and foster pro-environmental behavior is the »City of short distances.« This project focuses on locating residential zones, workplaces, shopping areas, and schools close to each other. Short distances facilitate an everyday life without a car. Also, good bicycle paths and bicycle stands, or parking garages increase the likelihood that we use a bike, or cargo bike. Copenhagen is a »best practice« example of how bicycle-friendly infrastructures can push back cars as means of traffic: 400 kilometers of bicycle paths create wonderful preconditions. Now, 63 percent of all citizens of Copenhagen take their bike to get to work, school, or university. The most reported motivation for riding a bike is that it is »fast and easy.« Environmental friendliness matters for only 7 percent of all cyclists.[78] However, environmentally damaging behavior becomes less comfortable where parking lots are metered and lie at the outskirts of the city, or environmental zones are established, respectively more strictly regulated.

The pool of action opportunities from which we can choose is usually not presented neutrally or equivalently.[44] As shown in previous examples, we can make use of this fact and facilitate pro-environmental actions by changing the situation accordingly. Here, we are dealing with so-called *defaults*, or (institutional) pre-settings that immediately suggest a certain behavior by their sheer existence. We will illustrate defaults with the example of organ donation. The default setting could either be that I donate organs in the case of death (1) only if I've signed an organ donor card or (2) always if I haven't got a (written) disagreement. In the first case, organ donation behavior is impeded, in the second one, it is facilitated. The usage of defaults for environmental protection can be observed e. g. in a housing cooperative in which all inhabitants receive an anti-ads sticker on their mailbox when they move in – if they don't explicitly refrain from it. Further defaults supporting environmental actions are, for example, if purchases aren't directly placed into plastic bags at the counter, if the standard printing option is black and white double-side print, or if organically-farmed products are placed at eye level in supermarket shelves.[44] On a community level, we could aim at setting renewables instead of conventional energy as a default. In experiments, this default led to more green energy recipients, despite higher prices.[60]

Bottom line: It is advisable to first consider changing the context of action, so that pro-environmental behavior is facilitated. In the same way, we can make environmentally damaging actions inconvenient and unpleasant, e. g. via defaults.

2

Social Norms
The Influence of Others

What are social norms?

Social norms are rules and standards that are shared by most people. They guide individual behavior without a need for laws and indicate how I should behave in a certain situation.[42] Psychological research shows that social norms can have a noteworthy influence on our behavior and thus are important for environmentally relevant actions.

One particular social norm is, for example, the *subjective norm*. It consists of assumptions about expectations of people that are personally important for me.[51] An example is: »What would my parents say if I did this or that?« Our psychological model for explaining sustainable actions is partially based on the *Theory of Planned Behavior*[2] in which subjective norms are the only social norms included. However, it is relevant to incorporate other norms, too, because individuals are also influenced by people with whom they are involved only very little or not at all, who just happen to be in their close surroundings. Hence, psychological literature yielded another norm differentiation: *OUGHT-norms* and *IS-norms*.[15]

»**I ought to behave environmentally-friendly.**« OUGHT-norms are moral guidelines describing what I should do in a certain situation according to other's opinions. The psychological term for it is *injunctive norms*.[15] These norms indicate if an action is approved or disapproved of by a group. If I stand in front of my dresser and worry about which clothes to wear for a lecture on food waste, I'm thinking about an OUGHT-norm. If I participate in a meeting at which most participants communicate openly that vegan alimentation is desirable, I'm confronted with an OUGHT-norm. OUGHT-norms can have diverse manifestations in various situations. For instance, the meeting might carry a different OUGHT-norm than my workplace.

»**Do others really behave environmentally protectively?**« IS-norms mirror the actual and popular conduct of other people. Psychologists usually call them *descriptive norms*.[15] It is likely that we do what we see other people do.[16] Even if we are not always aware of it, we imitate the behavior of others to a certain degree. Mostly because IS-norms indicate which behavior has been tried and tested by others and thus signal how to reach our goals most effectively. For example, a well-trodden path through the woods is an IS-norm.[35]

Influences of OUGHT- and IS-norms are typically underestimated by protagonists and even communication experts don't always pay attention to them.[16] Nevertheless, acknowledging and differentiating OUGHT- and

IS-norms is important because the two types of norms can contradict each other, especially in environmental contexts. For instance, it could be that, on the one hand, my friends approve of energy saving and a sustainable lifestyle (OUGHT-norm). On the other hand, during wintertime, my family usually cranks up the heating so that you can walk around the house in your t-shirt (IS-norm) – and maybe I then act like this when I'm back in my own apartment.

How can we apply social norms correctly?

Integrate Ought- and Is-norms skillfully

As environmentalists, we have the opportunity to focus on OUGHT- and IS-norms in certain situations (psychologists call it »making norms salient«) to increase the likelihood that people show a pro-environmental behavior. At this point, we want to emphasize that we are at the edge of manipulative strategies here, and we encourage you to reflect on the following passages critically.

As a matter of fact, integrating and communicating norms skillfully is very simple. The principle is: If many people appreciate environmental protection (OUGHT-norm) or behave environmentally friendly (IS-norm), it makes sense to highlight these opinions and actions and, for instance, communicate them in information brochures, or present them in videos.

If OUGHT- and IS-norms aren't indicative of environmental protection, they should remain unmentioned. This principle sounds simple; however, often it is not regarded and leads to negative unintended outcomes of our messages.[16] For example, the message »Many people throw their trash on the sidewalk – don't be one of them!« carries an underlying IS-norm message that many people throw garbage on the sidewalk.[14] Hence, it gives us the impression that it is indeed okay to not throw trash in a bin because a lot of other people do the same. Many providers for renewable energy have mastered the use of social norms. E. g. they don't mention which percentage of the population already receives green energy because it is still a minority. Thus, the IS-norm still counteracts renewables. Instead, they focus on advantages of green energy for ecological sustainability, highlight the acceptance of the

public (OUGHT-norm), and promote another IS-norm: the increasing number of green energy customers.

Information about social norms should always be based on actual figures and statistics. As environmentalists, we don't want to give wrong impressions but focus on already existing positive developments towards a holistic sustainable lifestyle.

Bottom line: The best option is to only highlight OUGHT- and IS-norms if they are indicative of pro-environmental behavior. Otherwise, we should look out for alternative and favorable norms.

STUDY »About social norms and mailboxes«

In a field experiment, Hamann, Reese, Seewald, and Löschinger examined, in which condition it is most likely that households attach a sticker against free newspaper and advertisements on their mailboxes.[33] Only households that didn't own an anti-ads sticker beforehand were included. An anti-ads sticker was put in every subject households' mailbox. In one group, a flyer was attached highlighting an OUGHT-norm (»we ought to support environmental protection in our city«). Households of the other group received no flyer. An IS-norm was indicated by the percentage of direct neighbors' mailboxes that already carried an anti-ads sticker (see also a picture on the next page). The authors found that more stickers were attached if an OUGHT-norm was highlighted, and the IS-norm was pro-environmental (i. e. many mailboxes of direct neighbors already had a sticker).

⊜ Use Ought- and Is-norms in combination

Also, combining OUGHT- and IS-norms skillfully is relevant. If both are indicative of eco-friendly behavior, it makes sense to emphasize both norms. For instance, Hamann and colleagues found that a combination of an IS-norm (mailboxes of many neighbors already had anti-ads stickers) and an OUGHT-norm (»as a neighborhood, we should engage in environmental protection«) was especially effective – in this case, most mailbox owners attached a sticker.[33] As addressed earlier, OUGHT- and IS-norms can contradict each other and so lead to unintended negative consequences.

A good example is the Iron-Eye-Cody clip[+] that was rated as one of the most popular commercials for environmental protection in the USA. In this video, an indigenous man rides his canoe down a river, surrounded by beautiful nature. Suddenly, he enters an industrial and polluted area and finally sheds a tear. An OUGHT-norm intended by the producers tells us: »Protect nature, it means a lot to us!« The underlying and contradicting IS-norm-message however conveys: »America is polluted and many people still continue to pollute it further. Therefore, don't feel bad if you're doing it, too.« In this video clip, producers have not only highlighted an OUGHT-norm but at the same time focused on an IS-norm that raises doubts if the clip reached its intended aim.

Interestingly, IS-norms can create unintended *boomerang effects*. If an IS-norm is environmentally-friendly (e. g. many inhabitants of my neighborhood consume little energy), on the one hand, it encourages many people that showed less pro-environmental behavior beforehand to adjust to this norm (i. e. save energy). On the other hand, there is a group of people whose behavior has already been environmentally friendly (because their energy consumption has been very low). They might also adapt their behavior to this IS-norm and thus increase their energy usage and act less environmentally-friendly. This is called boomerang effect. We can counter it by bringing an OUGHT-norm into play and mentioning that e. g. »energy saving is common and approved in our neighborhood.» In a study fitting our example, a smiley face was added to the IS-norm message, stressing an OUGHT-norm. The social reward in the form of a smiley face demonstrably prevented the top energy savers from adjusting to neighbors with higher energy consumption.[67] These results

+ ↗ *www.youtube.com/watch?v=j7OHG7tHrNM*

Illustration 3. An IS-norm influence: If many other mailboxes carry an anti-ads sticker, the likelihood of me attaching one increases, too

point out the importance of appreciating already existing pro-environmental behavior.[35]

Bottom line: If OUGHT- and IS-norms are both indicative of pro-environmental behavior, they should definitely be emphasized. If an environmentally damaging IS-norm contradicts an environmentally-friendly OUGHT-norm, we better not mention the IS-norm. Otherwise, it could impede positive effects of the OUGHT-norm. Boomerang effects of IS-norms can be avoided by bringing an additional OUGHT-norm into play.

⊖ Serving as a model

One method to focus a pro-environmental norm is by acting as a social model. In psychological research, it has proven to be the most successful strategy for fostering environmentally sound actions.[74] *Social modeling* in the environmental protection domain means living an authentic sustainable lifestyle as an example. The sustainable way of life doesn't necessarily have to be observed directly. It can also emerge in conversations.[57] Most importantly, the talk shouldn't have a missionary character. If so, a defiance reaction, so-called *reactance*, could be elicited and act contrary to motivation for a change in behavior. A social model can be a famous person of the public life as well as any of us.

For example, we can imagine an environmental campaign with athletes as role models who promote a healthy diet that is low in meat.[51] At this point, it should be mentioned that a utilization of attractive advocates is rather a means of influencing a choice between label A or B and not a successful method for encouraging profound changes in lifestyle.[8] The proposed campaign is therefore rather a part of an overall strategy. Particularly, it would encourage people who approve of sustainable nutrition and have already taken their first steps in that direction. Moreover, interests and credibility of all people involved can be scrutinized.

A felicitous example for using role models is the campaign »Stop talking. Start planting.« by the youth organization plant-for-the-planet[+]. In this campaign, youth ambassadors for climate justice cover the mouths of famous adults like Felipe of Spain, Harrison Ford, or Gisele Bündchen. Their clear message is that environmental protection cannot only be brought forward by talking but needs active engagement. In this campaign, it is not celebrities but the children who represent social models.

A small but nonetheless important method is spreading sustainable behaviors via individual non-famous social models. Many organizations (e. g. plant-for-the-planet, or food savers) use so-called ambassadors that oversee action promotion in a certain region and act as role models. Furthermore, all of us can be multipliers of sustainable lifestyles. If we want to encourage others to more sustainability, we should try to behave overtly sustainable and leave traces of our actions.[35] For example, Niki Harré, author of »Psychology for

+ ↗ *www.plant-for-the-planet.org*

Source: Plant-for-the-Planet

Illustration 4. Campaign »Stop talking. Start planting« by plant-for-the-planet.

a Better World«, demonstratively puts her bicycle helmet on her office desk so that it signals her sustainable mobility choice to visitors.[35]

Even if we sometimes have the feeling that we cannot accomplish enough, we achieve a lot without being aware of it. If we live sustainable lifestyles in front of the eyes of others and do it with full conviction, we will have a positive effect on the people surrounding us.

Bottom line: Pro-environmental behavior can be promoted by presenting a social model to other people. These models can be athletes, celebrities, and even every single one of us. Importantly, we can visualize a sustainable lifestyle.

⊜ Making use of minority influences

In previous paragraphs about social norms, influences of social majorities took center stage. However, also minority opinions can affect individual pro-environmental behavior. As environmentalists, we are often surrounded by an environment in which we represent a minority. Even though our social group might be smaller in size, its influence should not be underestimated. Not uncommonly, our proposals are rejected at first by a majority (e. g. if I want to introduce recycling paper for printers at my workplace). Nevertheless, research shows that such messages are usually processed in secret and their effects appear with a delay.[35] From this, we can conclude: A first impression that a behavior change failed might be deceptive. Since environmental topics are usually brought up by minorities, we should pay attention to several hints so that our messages will be regarded as relevant and credible. Messages should be coherent and based on facts rather than opinions.[35] Furthermore, a single additional supporter is often enough to have a thought-provoking influence. This is especially true if all the others think that this supporter generally advocates the opinion of the majority, just like they would.

Bottom line: Even in situations in which environmental protection is part of a minority opinion, environmentalists shouldn't be discouraged. Rejected proposals may have effects, that are (initially) invisible. It is helpful if we win over supporters and reason with a factual basis.

3

(Behavioral) Costs and Benefits
Individual Hurdles and Springboards

What are (behavioral) costs and benefits?

A friend of mine wants me to accompany him for a sweater shopping tour. Actually I had resolved to only buy ecological fashion or secondhand clothing. Standing in the store, I lay my eyes on a pair of pants. Now, I could check on the internet if there is a sustainable fashion label or secondhand store offering similar pants. Unfortunately, no eco-friendly clothing shops exist in my city which means that I would have to make a big effort researching a store and spend a wad of money on it, too. And all of that without even knowing if the pants from the online shop fit at all. Or I just make one small exception against my own values and buy the pants – and keep spending a nice day with my friend.

As in this situation, every decision can be made by weighing positive and negative consequences. Generally, we try to reduce or avoid assumed costs. Costs can be behavioral costs (e. g. stress during vacation) or monetary costs.[51] At the same time, we try to enhance expected (behavioral) benefits. Depending on our context, this means that we favor hedonistic goals like »feeling better right now« or gain-oriented goals like »secure or multiply my own property« because they lead to a better cost-benefit ratio.[74] Other motives (e. g. a *personal ecological norm*) then must take a backseat.

How can we reconcile (behavioral) costs and benefits with environmental protection?

Reward and sanction

It is widely recognized now, even outside the field of psychology, that mechanisms of reinforcement like giving rewards or sanctions are important for our behavior. Actions that are rewarded are more likely to be repeated.[16] Actions that are punished are usually avoided. A behavior is rewarded if it is followed by positive consequences, or if negative consequences stop. In the same manner, a behavior can be punished by having negative consequences, or the absence of a positive consequence.

That's why it seems natural that we should, on the one hand, try to associate pro-environmental behavior with positive consequences, e. g. receiving a credit when recycling my bottles.[51] Moreover, related negative conse-

quences should be removed, e. g. make cycling paths more secure. On the other hand, environmentally damaging actions should be made unpleasant, e. g. by an increase of parking lot fees, or their pleasant outcomes should be absent, e. g. traffic laws could prioritize public transportation and thus avoid a fast traffic progress of car drivers. A special kind of incentive is competition promising rewards.[66] For instance, households, universities, or schools could compete in games, contests, or lotteries.
In psychology research, reward and punishment of environmentally relevant behavior is a well-examined field. Both can have a strong effect on our actions and often financial rewards or sanctions are focused on. That's why in the next paragraphs you'll find important insights about how to deal with them:

Tips for giving rewards and sanctions

- **Rewarding is more effective than sanctioning.**[16] Even if sanctions (e. g. usage or disposal fees) may reduce the likelihood of certain behaviors, they have many downsides. A sanction informs us about what not to do but it doesn't tell us automatically which is the correct behavior. Additionally, sanctions animate us to look out for ways to circumvent them. A weight-oriented garbage fee might encourage me to dispose of my trash in other peoples' trash barrels, or illegally in the woods.[75] Also, sanctions lead to a negative evaluation of the sanctioner.

- **Incentives should be given close in time.**[16] Only if rewards are temporally close to the desired behavior will they be associated with it and, as a consequence, implemented more often. New technologies like solar panels or electric cars usually take a long time to pay off. That's why in this case, direct and rewarding discounts can be recommended to facilitate a choice of sustainable investments.

- **Incentives should be big enough but not too big.**[16] Rewards that seem too big for a certain pro-environmental behavior can reduce the likelihood that the behavior is carried out when the reward is removed afterwards. Researchers ascribe this effect to a mechanism in which people assume that a behavior must be unpleasant if it needs a bait as big as this. Moreover, if people receive a big incentive, they tend to attribute

their own motivation to financial benefits and not the protection of the environment. Much better, therefore, are middle-sized and appropriate rewards that tempt me but also give me a feeling of doing it because I care about the environment.[20]

- **Be careful with reward removal.**[16] If we implement a single-time behavior, the reward can easily be removed after the purchase, because it cannot influence the desired behavior anymore – e. g. a unique governmental subvention of electric cars is enough to motivate their purchase. With permanent actions like sufficiency behaviors this is a different case. As explained above, removal of positive consequences is a kind of sanction. A review by Dwyer and colleagues suggests that pro-environmental behavior is more likely when a reward is presented.[21] After removing the reward, behaviors often change again and return to the baseline. For instance, if I buy fair-trade chocolate for two weeks because it is cheaper than conventional chocolate for a short period of time, it is likely that I will change back after those two weeks. Hence, for a long-term habitual change, rewards have to be permanent. If we cannot afford it financially or because of other reasons, we will have to draw on other strategies. A special case is a reward that enables us to try out something for the first time. Here, effectiveness can be high even though incentives are removed.

- **Avoid appeals to egoistic values.**[11] Referring to the value theory by Schwartz, environmental psychology differentiates between *egoistic values* (»How important is my own benefit?«), *altruistic values* (»How important do I think are benefits for others?«), and *biospheric values* (»How important is it for me that nature benefits?«).[75] Typically, egoistic values lead to environmentally damaging behavior while altruistic and biospheric values are associated with pro-environmental actions. Sustainability communication thus tries to present advantages of environmental protection for different value orientations. It is sensible to prefer vegetarian and regional food because (1) it doesn't exploit animals and spares resources (*biospheric values*), (2) produces less CO_2 and therefore prevents negative effects of climate change on people living in countries of the global south (*altruistic values*), and (3) it contributes to a healthy lifestyle (*egoistic values*). Formulating messages, we should avoid highlighting egoistic benefits too much because it stimulates ego-

istic motives and a »business-mindset.« For example, if I want to inform about discounts on a local vegetable box, it is not the possibility of saving money, but the environmental reason that should be central.

Bottom line: We can foster pro-environmental behavior if we reward it or remove its negative consequences. Additionally, environmentally damaging behavior should be »punished« or its positive consequences removed. We should keep the following in mind when using rewards or sanctions: focus should be on rewards, not sanctions. At best, rewards are not too big and presented timely and appropriately. Rewards are most useful for single-time actions, for daily behaviors they are less suited. Furthermore, we should always mention benefits for the environment and other people and try not to overemphasize egoistic benefits.

⊖ Making it easy

Effects of reward and sanction that have been described above can be transferred to principles of designing non-monetary incentives for behavior change as well. It is vital that a behavior is as comfortable as possible for a person and fulfills hedonistic needs. A lot of practice and self-discipline is necessary if I have to walk 15 minutes to the bus stop each day instead of taking the car directly from my front door. Therefore, it makes sense to improve accessibility of public transportation because short distances lead to increased use of public transport.[51]

Bottom line: It is worth making pro-environmental actions as simple and pleasant as possible.

⊜ Making use of your passions

It is helpful to include pre-existing passions and talents in a sustainable lifestyle transition. Many are interested in e. g. movies, art, music, or artisanal activities. These domains are a perfect match with environmental protection and its promotion.[35] One could shoot a movie about ecological agriculture, or organize a flash mob. If we can contribute to environmental protection using our creativity, it suddenly becomes what it is meant to be: liberating and fulfilling.

From a perspective of *positive psychology*, environmental protection should come along with satisfaction, too. Creating positive experiences with pro-environmental actions is inevitable and not even that hard. Sustainable actions have a great potential to be fun. ❦ At a clothes exchange party, at a protest concert, in a community garden, or during a car sharing conversation, sustainable behaviors are automatically associated with interesting experiences.

Bottom line: It is necessary to combine environmental protection with the practice of our interests and talents.

4

Weighing Process & Intention
Taking a Run-up

4.1 Weighing Process
Taking a Run-up

In a weighing process, all *costs and benefits* of an action are counterbalanced and the *personal ecological* norm as well as *social norms* are included in order to finally make a decision.[51] For example, it could be that because of my *personal ecological norm* I have a strong tendency to buy regional food – feeding on my knowledge about advantages of regional and seasonal products (*problem-awareness*), a feeling of being responsible for environmental damage caused by long routes of transport (*perceived responsibility*), and a belief that my consumption behavior can make a difference (*self-efficacy*). But maybe I observe that my family buys products from Africa and South America, and also the range of far-travelling products in the supermarket catches my eye. On the other hand, I have a friend who started eating only regional products and who is something like a role model for me (*social norms*). Above and beyond, it could be that regional and seasonal products are indeed less expensive but that my girlfriend and I have to find the time for going to the local marketplace – besides some fun this implicates required efforts in time (*(behavioral) costs and benefits*). In a weighing process, all these aspects are counterbalanced in terms of pros and cons of the behavior and behavioral consequences. Expectations about the likelihood of certain advantages and disadvantages play an important role, too.

How can we support the weighing process?

⊕ Mindfulness

In the state of *mindfulness* – in which we intentionally and non-judgmentally focus on the present moment – we can become aware of the otherwise unconscious routines that often guide everyday behavior.[40] Whereas in everyday life, we are often simply guided by habitual action sequences and think, feel, and act accordingly, mindfulness is all about being aware of our thoughts, feelings, action impulses, and behaviors. This kind of awareness makes it possible to think over habitual patterns and harmonize our behavior and our values as well as needs. In the environmental domain, no evaluated mindfulness interventions and trainings exist up to this day.

However, in stress management these have already been implemented successfully.[45] Mindfulness fosters acceptance of our own current feelings and thoughts and also encourages facing negative emotions (see Chapter 7.3). Studies found associations between mindfulness and pro-environmental behavior, less material values, and a small ecological footprint.[43]

Bottom line: Through mindfulness we can detect unconscious routines and change them. This way, a self-aware weighing process can take place.

Reflect consciously

The behavioral model used in this handbook gives a good orientation to reflect diverse aspects of your own weighing process. In the domain of sustainable food consumption, I can ask myself: How much do I already know about it? (*Problem-awareness*) How sustainable is the diet of people around me and do they expect the same of me? (*Social norms*) Which (dis-)advantages does it have for me to eat more or less sustainable? (*(Behavioral) costs and benefits*) An individual reflection can be supported by communicating information about pros and cons of various behavioral options.[75] E. g. an information brochure can inform us which prices, social acceptance, or global problems are connected to house insulation. A conscious reflection doesn't necessarily lead to an environmentally-friendly behavior choice. Many components of the behavioral model have to favor environmental protection, too.

Bottom line: If we support a reflection about (dis-)advantages of a certain behavior, the weighing process will take place more consciously. Since this doesn't automatically imply choosing the pro-environmental behavioral option, a combination with further measures seems necessary.

4.2 Intention
Time to Tackle It

There is a close connection between the weighing process and *intention*. It arises from the weighing process but precedes the action. We can picture intention as a kind of action plan to behave in a certain way. For instance, I could have the intention to predominantly consume vegetarian products from now on. However, this intention is not automatically implemented but has to overcome certain barriers that could impede our desired behavior. A meta-analysis of many single studies showed that an action intention doesn't lead to an actual implementation in many cases.[71] Many measures of environmental protection fail because they stop exactly at this point, at the intentional process, and ignore behavioral outcomes. Therefore, a bridge between intention and actual behavior is of special relevance. For a start, measures illustrated so far can strengthen our behavioral intention – for real implementation of pro-environmental behavior more means are sometimes necessary. How can we increase the likelihood that an environmentally-friendly intention leads to actual conduct?

How can we support implementation of environmental intentions?

⊕ Goal-setting

Truly visualizing our own goals is an important precondition for implementing our intentions. A **tangible** goal facilitates action implementation because we don't aim at an abstract goal like »saving energy« but e. g. try to »decrease our energy consumption by 20 percent«.[57] Through concrete goal-setting we get an anchor with which we can monitor our own progress.[1]

Goal-setting is most effective when linked to other methods of behavior change. The best results for pro-environmental behavior are produced, if goal-setting is combined with rewards (Chapter 3: *(behavioral) costs and benefits)*, precise instructions (Chapter 1.3: *self-efficacy*), or a *self-commitment* (Chapter 1.2: *perceived responsibility*). This was shown by a meta-analysis that integrated many studies with reference to environmental protection.[57] Goal-setting is especially effective, if goals are high, at the same time realistic, and can be reached in a short period of time.[75] It is therefore very useful to break down

a big goal to many small, clearly formulated partial goals – which has also a positive side-effect on our *self-efficacy* experience (Chapter 1.3).

Bottom line: Before trying to change our behavior, we can ask ourselves specifically about our aims and determine what a desired behavioral outcome actually looks like.

STUDY »Dream team of feedback and goal-setting«

In a study by Becker, 80 families received either a tough energy-saving-goal (20 percent reduction) or an easy goal (2 percent reduction).[9] Furthermore, for half of the subject households, goal-setting was combined with feedback (3 times per week). All households received information about behaviors or devices that consume the most energy. The only strong behavior change was found in the group that received a difficult goal combined with feedback. This group reduced its energy consumption by about 14 percent.[1]

⊜ Implementation intentions

Psychological research shows that it is profitable to go further than goal-setting and make behavioral plans even more tangible. Such ascertainments of behavior bear the name *implementation intentions*.

This example illustrates possible implementation intention questions that you could ask if you wanted to reach the aim of »going shopping in the organic food store«:

- **When** will the behavior take place? *I want to go to the organic food store every Wednesday after work at 6 p.m.*
- **Where** will the behavior take place? *In the organic food store at 14, Celesta Drive.*
- **How** do I get there? *By bike.*
- **How** do I carry my groceries? *With cloth bags that I pack in my backpack in the morning.*
- **Who** is involved? *I will go shopping by myself.*
- **What happens if** a colleague from work invites me to have dinner with her? *Then I'm going to have dinner with her in the organic restaurant right next to the organic food store. This way, I still have time until 8 p.m. to do the shopping.*
- **What happens if** I have an appointment in another city district? *Then I will eat dinner at the district of the organic food store and go shopping afterwards.*
- **What happens if** I forget my cloth bags? *Then I will only buy light and small food on Wednesday. On Friday, I will be at the physiotherapist nearby, then I can buy drinks and heavy fruits and vegetables.*

- **What do I do if** my money this month doesn't suffice to pay 10 dollars for a kilo of organic peppers? *Then I have a look if other regional vegetables are on sale.*

We want to transform intentions into actual behavior. Research shows that it is most effective to formulate implementation intentions in order to do so.[74] They help us to automate behaviors to a certain degree and integrate them into our daily life even before they are first implemented. As a result, we won't be distracted, or confronted with spontaneous conflicts in the situation of action and thus avoid backslides.[18]

Over and above, through if-then-questions I become aware of the situations in which my goal is **altogether relevant**.[18] For example, many situations could exacerbate my goal to have a vegetarian diet. What if my mother complains about my malnutrition? What do I do if I'm going to travel to a country next year in which rice is the only vegetarian meal? I can anticipate all these situations while forming implementation intentions. As a positive side-effect, they can also strengthen our *self-efficacy* beliefs.[52]

Implementation intentions proved to be effective in many studies, e. g. on speed limitation[23], reduction of car use[24], usage of public transport, and sustainable consumption behavior[3].

Bottom line: Implementation intentions help us with the right questions and if-then-sentences to specify our environmental goal to a degree that makes real implementation more likely.

Prompts

Prompts sare small facilitators for remembering to enact a certain behavior, e. g. a sticker at the light switch or computer that reminds me of turning it off in order to save energy. They point out a certain behavior but usually don't contain any basic information.[57] A good example for the application of prompts is the initiative »These Come from Trees«[+] in which stickers with this message are attached to paper towel dispensers, printers, or mailboxes. This little indicating label can be enough to activate my intention to save paper. In a meta-analysis by Osbaldiston and Schott, prompts were the most effective means to promote pro-environmental behavior.[57]

Under which conditions are prompts most effective?

- If a prompt is close in time and space to the behavior in focus.[16]
- If the behavior is easy to implement.[47]
- If a prompt is defined unambiguously.[47]
- If the message uses polite wording.[12]
- If the prompt refers to the correct behavior, e. g. »Please switch off the lights« instead of »Please don't leave the lights on«.[30]

Bottom line: Prompts help us to carry out a pro-environmental intention by reminding us in the right moment of the desired behavior. They should be close in time and space, polite, unambiguous, easy to implement and focused on the desired outcome.

+ ↗ *www.thesecomefromtrees.blogspot.de*

5

Pro-Environmental Behavior & its Consequences

Heading towards Routine

What comes after environmental behavior?

All components of the psychological model for explaining sustainable actions that have been illustrated so far have an influence on our behavior. As a result, we can (in simplified terms) act either environmentally-friendly or environmentally damaging, e. g. recycle or not recycle. To keep it simple, we will use the clear categories pro-environmental or anti-environmental; however, in reality, the line is often blurred.

If an individual behaved anti-environmentally, even though his or her *personal ecological norm* favors pro-environmental behavior, an unpleasant state of tension arises. Psychologists call this state *cognitive dissonance* (see Chapter 1.2: *perceived responsibility*). Typically, I try to resolve the awkward dissent of my values and my conduct. ❦ Next time, I either change my behavior and e. g. search for a travel destination that I can reach without an airplane. Or I change my opinion and adjust it to my conduct, e. g. by reducing my perceived responsibility because I now think that »my contribution to CO_2-emissions is insignificantly small.« The second strategy redefines the situation in order to avoid feelings of guilt (more on this point in excursus 7.3: *coping-strategies*). Psychologists speak of a redefinition loop that is launched by cognitive dissonance.[51]

If an individual acted pro-environmentally, something can occur that psychological research calls the spillover-effect.[31] Small engagement so to say spills over and leads to bigger commitment step by step. ❦ For instance, I could attach a »Nuclear Power? No, thanks!«-sticker to my bicycle. If I attribute my behavior to my personal convictions, this first »commitment« can make a dedication to bigger environmental actions more probable.[16] Maybe I will go to a demonstration against nuclear power next. That way, commitment can spill over from low-threshold behaviors to more effective actions.[31] Up to now, positive spillovers were mostly found within environmental domains.[31] A positive effect on other domains hardly ever appeared.[36] To give an example, my switching-off lights when leaving a room could lead to the adoption of energy-saving light bulbs or a switch to green energy suppliers; however, it won't lead to a reduction in clothes consumption. At the end of the day, this means that small pro-environmental measures shouldn't be underestimated since they can open doors to bigger engagement in the same domain.[31]

Nevertheless, it often makes sense to concentrate on behaviors with large environmental impact. The counterpart of the spillover effect can easily reverse

the result of small environmental measures: the *rebound effect* (or negative spillover). By saving energy, I might save money, too, that I in turn invest in a new refrigerator (see »Why is Environmental Psychology important?« in the introduction). A study by the German Federal Environmental Agency revealed that direct and indirect rebound effects appear in many behavioral domains.[59] Therefore, it is of great importance to put an emphasis on behaviors with a bigger environmental impact.[46] Those are e. g. insulation of buildings, non-motorized mobility, and a low-meat diet. Bilharz proposes further criteria determining if a behavior is more or less relevant for environmental communication: stability of outcomes and observability of behaviors.[10] In the best case, an action should be seen by others, have a potential to lead to a trend, create scale effects+, influence infrastructures as well as political structures, and finally have positive effects on sustainable companies and organizations.

Bottom line: Small measures are sometimes under-appreciated. Nevertheless, it is often sensible to target high-impact environmental behaviors.

+ *Scale effects describe if a behavior is facilitated when many people implement it (Bilharz, 2009). For example, if organic food supply increases because of a stronger demand, this leads to a decrease in costs of organic products and an increased variety. Hence, a bigger population can be targeted.*

How can we sustain pro-environmental behavior permanently?

⊜ Self-rewarding

Photo: Zöllner2, Weimar

Illustration 5. How delicious self-rewarding can be during a seasonal vegan brunch!

If we implemented a pro-environmental action as intended, we can reward ourselves for doing so – because behavior that's rewarded is more likely to be repeated.[16] If I have successfully lived one month without eating meat, I could reward myself with a visit to a fancy vegetarian restaurant. Also, positive *feedback* (Chapter 3.3) can be a sort of reward.[16] Further hints for rewarding and thus self-rewarding can be found in Chapter 3 on *(behavioral) costs and benefits*.

Bottom line: If we successfully acted environmentally-friendly, we can pat ourselves on the back and reward ourselves.

Strengthen self-regulation

After the first steps are done and after implementing pro-environmental behavior successfully, I might need strong *self-regulation* in order to control myself and uphold my behavior.[62] Not uncommonly, my desires for comfort and low financial impact, i. e. my *(behavioral) costs and benefits*, make sustainable behavior difficult. For example, after forming an intention to buy more secondhand clothes, I still have to walk through shopping centers that present fashionable and cheap clothes. Only with a certain amount of self-regulation can I resist a »relapse«. Therefore, I have to consider which circumstances might help my *intention* in the long run. A secondhand shopping trip with my best friend could be helpful. Nice moments while being together facilitate a continuous implementation of my sustainable *intention*. One of the most important non-monetary rewards is social approval.[16] Social approval and support can make it easy to retain control over our own actions. Researchers assume that self-regulation can be trained on a long-term basis. In short-term, relaxation supports a strong self-regulation.

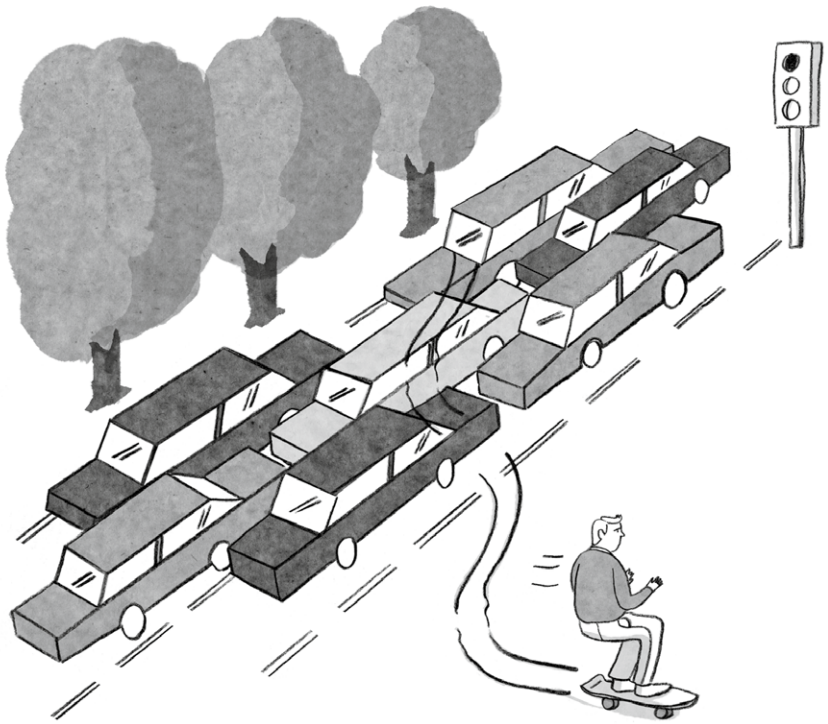
From a psychological point of view, we should budget with our demanded self-regulation. We can imagine it as a battery that is sometimes empty and has to be recharged by taking a break. That is why we should pick goals that aren't too high, e. g. by slowly increasing the amount of secondhand clothes in our wardrobe. Self-regulation is not a state in which we want to linger for long.[35] Therefore, it makes sense to integrate our passions and talents that require hardly any self-regulation in a transition towards more sustainable lifestyles (Chapter 3: *(behavioral) costs and benefits)*.

Bottom line: For pro-environmental behavior to be permanent, it should demand our self-regulation as little as possible. If it still does, recovery periods are necessary.

⊜ Draw on many aspects

We can use all of the measures for encouraging pro-environmental behavior described so far to also sustain it permanently. To keep our sustainable behaviors up, we have to feel responsible for them (Chapter 1.2: s*elf-commitment*) and remember them in the context of action (Chapter 4: *prompts*). Moreover, we should identify possible barriers and find solutions for them (Chapter 4: *implementation intentions*). *Feedback* (Chapter 1.3) and *social norms* (Chapter 2) supporting sustainability can also help maintain our behavior. All these methods can enable new sustainable habits. We now dedicate a whole chapter to the relevant topic of *habits*.

Bottom line: If many components of the psychological model for explaining sustainable behavior favor environmental protection, it becomes more likely.



6

Habits
Bursting Old Patterns

What are habits?

In a psychological study, 35 to 53 percent of our behaviors proved to be habits – no wonder that they are very relevant for environmental protection.[80] Psychologists define *habits* as behavioral scripts that are associated with certain situational cues.[75] In many places of our psychological model for explaining sustainable action, habits can influence our behavior, directly or indirectly. For example, habits can activate environmentally relevant norms in a school context and thus facilitate or impede certain behaviors.[51] This is so because we tend to absorb information more easily if it accords with our already existing decisions.[74] Deviating information is oftentimes ignored. Habits influence our *behavioral costs* as well, because habitual actions are typically the more comfortable choice and any change in habits uses up energy.[51]

In previous chapters, the underlying assumption was that people make rational choices. But do we really weigh all *costs* and *benefits*, *personal ecological* and *social norms* for each behavior? No, we don't. Habits are an exception because they can be implemented without a large cognitive effort and are often unconscious.[74] They are characterized by being frequent, stable, automatic, and typically successful in reaching a certain aim.[75] Commonly, getting rid of old habits is related to high personal *behavioral costs*, e. g. mental effort. However, many strategies facilitate a change. We have already illustrated two methods for breaking old habits and establishing new ones: *implementation intentions* and *prompts* (see Chapter 4.2). Another one shall be described in the next paragraph.

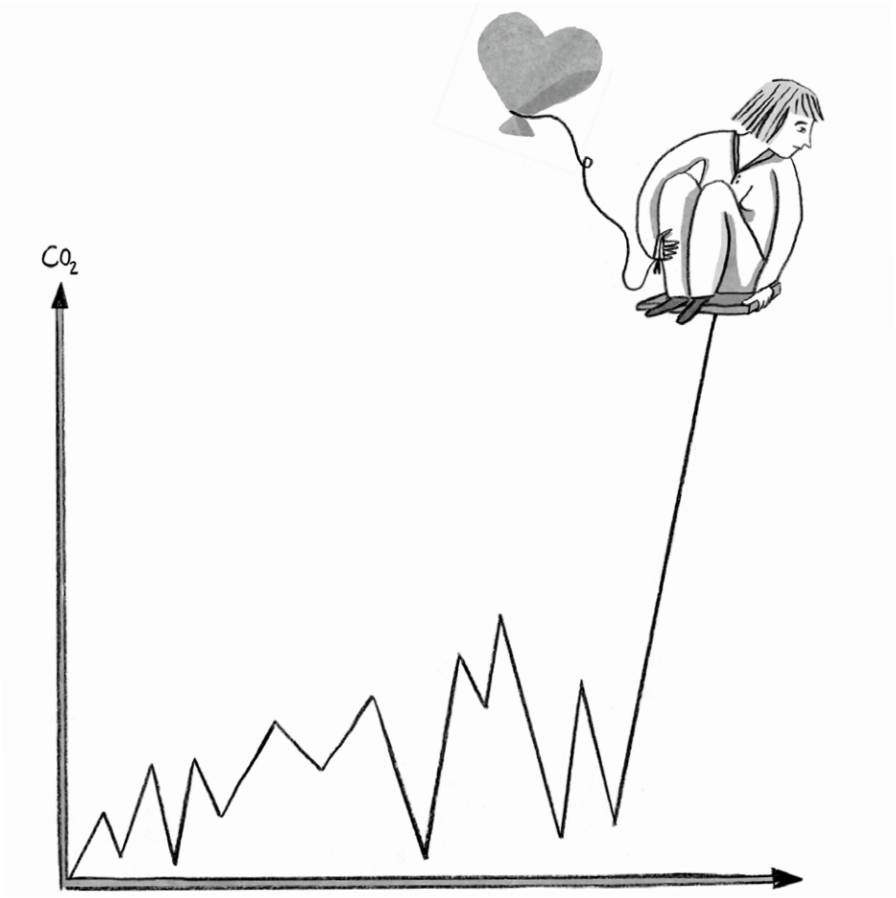
How to break old habits?

⊖ Temporal and strong change of the behavioral context

We can break habits by changing the context of action for a short period of time. If car drivers have to use public transport for a couple of days because construction works block a main road, it is more likely that they will use public transport later on and reduce their driving hours.[27] A similar effect can be induced by free tickets for public transportation. With free travel cards, we can try out a new behavior and break an old habitual pattern.[51] This action is especially useful if the conditions on buses, trains, and tram lines, as well as the duration of travel, are better than car drivers had expected beforehand. New habits are encouraged if we have positive experiences that exceed our expectations.

Furthermore, we can change habits during life-stage transitions when *critical life-events* take place. In these stages, we inevitably break a large amount of old habitual patterns and this creates space for new ones. Critical life events can be the start of university or employment, a new job, relocating, or the birth of your first child.[51] For instance, college students in their first term are a promising target group to encourage a transfer to a sustainable financial institute. Or a community campaign could distribute free tickets for public transport to its new inhabitants.

Bottom line: If habits are broken for a short period of time, e. g. due to critical life events, the time is right for introducing new and environmentally-friendly action alternatives. In a best-case scenario, new behaviors are associated with positive experiences that exceed previous expectations.



7

Emotions
Focusing on our Feelings

Positive emotions like joy, hope, interest, and love as well as negative emotions like grief, anger, and fear can bring along advantages as well as disadvantages for pro-environmental behavior. Relevance for environmental protection results from emotions that emerge during an action or afterwards. However, anticipated emotions are also of importance since they arise prior to the behavioral implementation and thus affect decisions about if, and how, I want to act. It makes a crucial difference if I assume that positive or negative feelings follow a certain action.

7.1 Positive Emotions
Joy, Hope, Interest, and Love

Which advantages do positive emotions have?

Positive emotions promote openness, creativity, and encourage us to look out for opportunities and take them.[35] A study on negotiation skills showed that people in a good mood negotiate more efficiently and effectively and use less confrontational tactics than people in a neutral state.[13]

How can we evoke positive emotions?

⊜ Support and appreciation in groups

Social groups generate many opportunities for their members to receive feelings of appreciation and support. Being a member of an environmental group can build a significant bridge between my individual actions and societal consequences.[16] A Norwegian study found that belonging to an environmental group has major advantages for environmental protection.[56] And advantages exceed positive effects on environmental attitudes. For instance, we often become aware of our habitual actions while discussing associated environmental topics in a group. Furthermore, groups provide their members with social and practical support.[16] Especially, appreciation of single pro-environmental actions, and of engaging in nature protection in general are important – they should be cultivated in every group.

Nevertheless, actual implementation of social support and appreciation is easier said than done, particularly concerning new group members. Do we support ideas of new members as much as those of older ones? Do we accept their decision about how much they want to contribute? Are we on friendly terms? Are there a lot of inside jokes that new members don't understand?[35] From all these vantage points, we can observe our group interactions to make sure that group and working atmosphere are as positive as possible.

Bottom line: Social support and appreciation are the foundation of every well-functioning environmental group. Membership in an environmental group can facilitate pro-environmental behavior and evoke positive emotions. We should put an emphasis on integrating new members.

Food and humor

When organizing a meeting or an event, it is important to give participants a feeling of being welcome and to create a relaxing and pleasant atmosphere.[35] According to Harré, a certain amount of humor helps to establish a positive mood and give wings to our creativity. If you like, you can e.g. include a funny cartoon in your presentation. Delicious food and drinks are another simple method to create a positive basic mood. Moreover, researchers showed that subjects tend to support speeches, if they ate while listening to them.[41]

Bottom line: Comedian talent, a joke now and then, and good food never caused any harm – this is also true in the domain of environmental protection.

Storytelling

The so-called *Tales of Joy* typically portray a person that has to deal with situations similar to those we encounter. At first, a protagonist has to fight against most difficult circumstances, however, in the end he or she reaches their goal – this may be in a movie, a book, or even in real life.[35] Further classical forms of storytelling usually relate to overcoming a separation or a

difference between two people, or describe a genius' invention.[41] Those stories capture us emotionally because they have a personal note and strengthen our motivation to make a change.

Listening to or observing stories often arouses feelings of empathy. Since it is easier for us to feel empathy for an individual rather than a bigger amount of people, there should be one main character in the stories we tell (e. g. a human being, an animal, or a tree). Moreover, empathy is more likely to arise if the person portrayed is similar to me.[35] If I as a college student go to a movie on energy transition shown in our lecture hall, the most appropriate topic is a college student that lives with flat mates like me and has similar problems of arranging exams with environmental engagement.

Bottom line: Positive stories of environmental protection can create joy and motivation. Most empathy arises if the story has one main character that's similar to ourselves.

Which disadvantages do positive emotions have?

As useful as they are, positive emotions have downsides, too. For example, if positive emotions are elicited by other contents than environmental protection – like the weekend coming up – we are more easily distracted from our current task. That's especially true for boring and unpleasant tasks for environmental protection.[35]

Furthermore, studies showed that subjects in a positive mood are more prone to drawing on social stereotypes when judging guilt in a crime.[35] This way, it could be that in good mood we blame managers of big companies and their desire for profit for environmental damages. Without considering other protagonists or basing assumptions on facts.

How can we avoid disadvantages of positive emotions?

⊜ Highlight relevance of judgment

If people are aware of being responsible or accountable for their judgement, careless use of stereotypes due to positive emotions is diminished.[35] When we are held accountable, our evaluations in a good mood are as precautious and thorough as in other moods. Hence, I could ask members of an environmental organization: Which protagonists are most responsible for environmental problems? Additionally, I request them to reflect and justify their answers.

Having positive emotions, we are more easily distracted. To counteract this state, we need to be convinced that dealing with a topic carefully is important.[35] For instance, I might participate in an event on industrial property rights in the food sector that isn't interactive, and even boring in some parts. The beautiful weather outside put me in a positive mood and I'm inclined to look outside and start dreaming about my next vacation. If I am aware of the topic's relevance and if I have the task to give a report on it in our next environmental group meeting, I will – despite of my positive mood and a demotivating atmosphere – concentrate on the lecture.

Bottom line: We can circumvent negative consequences of positive emotions by encouraging people to give a reasonable statement and implement a task carefully.

7.2 Negative Emotions
Grief, Anger, and Fear

Which are the advantages of negative emotions?

We often encounter negative emotions in the sustainability movement because it is all about improving a negative present state.[35] Raising awareness for a negative situation is hard to implement without provoking negative emotions. However, negative emotions can also have positive effects on our action motivation. While positive emotions evoke openness, and cause us to be easily distracted, negative emotions can narrow our attention and let us focus on the problem at hand.[35] For example, the emotion of anger often plays an important role in the lives of many political activists. If people feel anger – e. g. about other people's reckless behavior towards the environment – their stand for nature protection and biodiversity preservation can be strengthened.[63]

There is one condition where negative and frightening messages are helpful.[35] If someone hasn't been exposed much to a certain environmental problem yet, negative information can raise awareness for the severity of the current situation in the first place. In such a case, negative emotions are useful. If people already worry about climate change, frightening information only confronts them with a feeling of helplessness. As described in Chapter 1.3 about *self-efficacy*, we should always consider our target groups' previous knowledge.

Which disadvantages do negative emotions have?

It is tempting to think that issues as important as climate change, animal rights, resource depletion, or social justice entitle us to let people go home with a feeling of horror. But do they really? Fear, concern, and rage are all types of human pain. Isn't it exactly this pain, together with environmental damage, that we want to prevent?[35]

Whereas positive emotions widen our view and encourage us to take action, negative emotions typically prevent us from imagining possible problem-solutions.[35] Strategies that aim at evoking fear have proven especially

ineffective in many domains like drinking, driving, or criminal conduct.[16] It should be noted that positive as well as negative emotions are contagious. If we let our audience leave an event with negative emotions, they will eventually carry them on to their social environment.[35]

If we feel negative emotions due to frightening messages, we often make use of *coping strategies* in order to deal with them. The following excursus is dedicated to this topic.

7.3 Excursus: Coping Strategies Dealing with Fear and Guilt

Negative emotions should – if at all – only be used with great consideration. One reason is that we like to block negative emotions. We use various coping strategies if a situation or a state arises that we perceive as burdensome and not directly controllable. Coping strategies can be divided into *problem-focused* and *emotion-focused coping strategies*. A basis for this perspective was introduced by Lazarus' »transactional stress model«.[39]

Problem-focused coping strategies deal with the current problematic situation and aim at changing it. In the context of environmental protection, problem-focused coping strategies are, for instance, an active implementation of a sustainable behavior (e. g. taking a bus instead of a car), search for information about a sustainable behavior (e. g. ecological clothing shops), or avoidance of contact with non- or less sustainable options (e. g. don't pass by certain stores). Thus, the problem is faced and solved actively.

Emotion-focused coping strategies help us to deal with our negative emotions. In doing this, it is not our goal to actively get rid of the problem. Examples are reframing of a situation and distraction. Since these strategies typically counteract pro-environmental behavior, knowledge about coping is especially important for environmentalists. Oftentimes, emotion-focused coping strategies of people with anti-environmental behavior simply appear like excuses to us. However, it is important to become aware of the underlying negative emotions and interact sensitively with people. This means taking their feelings seriously. In many cases, we aren't necessarily aware of

our own coping strategies. Generally, people have personal preferences for certain coping strategies – probably because of successful implementation of these strategies in past situations.[77]

An example: I want to behave sustainably, but my friends often meet at McDonald's for lunch. Now I'm caught in a conflict between my *personal ecological norm*, giving me a feeling of guilt, and *social norms*. If I use problem-focused coping strategies, I could try to convince my friends of an alternative eco-vegetarian restaurant nearby. If I make use of emotion-focused coping strategies, I might reassure myself that my friends made the choice so that I'm not responsible for, or guilty of it. Coping strategies can thus be adopted to decrease *cognitive dissonance*, as discussed in Chapter 1.2.

We have already introduced a small amount of problem-focused coping strategies in the previous paragraph. Psychologists especially focus on manifold emotion-focused coping strategies. In the following paragraphs, you will get to know some of them in the context of environmental protection. This way, you will be able to detect them in certain moments and reflect about how to deal with them.

Which emotion-focused coping strategies exist?

Apathy

As a reaction to frightening or accusing information, people might act apathetically: »Well, I don't care.« This way, we circumvent a possible conflict that seems hopeless to us and avoid psychological stress and pain.[48]

Reframing of a problematic situation

If a situation causes feelings of fear or guilt, we tend to...

- **Deny, relativize, or look for counterarguments.**[39] »There is no human-made climate change.« »Ecological problems are not as big as typically described. Or at least not as big as challenges that human kind successfully accomplished in the past.« »Technological progress will solve all environmental problems«.

- **Distort reality.**[77] »I know about production conditions of coffee. But I wouldn't call it luxury, rather a necessity.« »Vegetarians are eating my food's food«.

- **Deny guilt.**[55] »I'm not the one to blame for environmental problems – who am I to change anything?«

- **Make social comparisons.**[55] »It's other people's fault.« »In other European countries, environmental standards are far worse«.

STUDY »Who's to blame?«

In a Norwegian study, researcher Kari Marie Norgaard found through qualitative interviews that subjects rated Norway's contribution to climate change as insignificant – referring to national greenhouse gas emissions as well as international political influence (denial of guilt).[55] Moreover, the USA were identified as the real source of environmental problems (social comparison). An exemplary answer in an interview was:

Interviewer: »But which role, do you think, Norway should play internationally?«

Subject: »Hmm, we are of course a very small country with almost no significance. Thinking economically, we are of completely no interest.«

Selective attention

Some emotion-focused coping strategies operate in a way that people's attention is turned away from frightening or guilt-arousing information. According to Crompton and Kasser, as well as Homburg and colleagues, we tend to...

- **Minimize exposure to negative emotions.** A good example for this is a dinner situation in which a guest directs a conversation to climate change. A short lapse in the conversation occurs, until one guest comments on how delicious the food is. Everyone agrees and the critical topic is avoided.[50]

- **Stay in the present moment with our thoughts.** »Sometimes I think to myself that we are going to face many problems in the years to follow. And then again, I think: 'Whatever', and stop thinking about our future.«

- **Direct our attention to small positive things.** »Sometimes I think that I should eat less meat. But then I become aware that I've already refrained from meat once this week. That's something.«

- **Seek pleasure.** Unpleasant information often leads to a search for more pleasant things. For instance, someone is informed about disastrous consequences of climate change at a public relations stand on the street. He or she might subsequently go shopping for a new shirt in order to direct attention on something pleasant. Homburg and colleagues showed that pleasure seeking strategies are the most common emotion-focused coping strategy.[39]

Regaining control

Source: www.schnews.co.uk

Illustration 6. Example for creative activism that might miss its target by referring to death.

When confronted with danger, we experience a loss of control.[26] Environmental communication often unintentionally causes this mechanism. For example, if it is mentioned that all of our lives are at stake; this short thought of my own death gives me a feeling of lost control that can have negative consequences for pro-environmental action. Studies show that people ascribe higher relevance to money and status when being aware of their own mortality.[32] Moreover, high-status objects are more attractive for us in this state.[49] However, gathering large amounts of goods counteracts environmental protection in many ways.

If we're confronted with our own mortality, there is another possibility to regain control: By putting our own group before another group. This way, I might think better of myself than of external groups like ethnic groups, animals, or our natural environment, and evaluate them more negatively.[76]

Hence, including the topic of death in our environmental communication is tricky. The organization 10:10 also made this experience. In their campaigns, 10:10 usually applies positive examples to communicate the op-

portunities of pro-environmental behavior. The video »No Pressure«[+] focuses on the topic of death, however. In this video, climate skeptics are blown up at the push of a button. The audience could thereby have a feeling of losing control over the situation. Probably, this video prevents people from behaving environmentally-friendly. Due to tons of negative feedback, the video was removed from the internet on the day of publication.

Justification

In order to reduce negative emotions, we can justify our anti-environmental choice.[77] A possibility is to name the actual motivational conflict. For instance, the statement »I would consume less energy at home, but I don't know where to start« is a sign that I don't have sufficient *self-efficacy* and therefore need *action-knowledge* (Chapter 1.3). Identifying this conflict can be very interesting for environmental activists, because it indicates at what point we can start with our measures. But careful! Sometimes we might use a fake conflict as an excuse. For instance, »I would like to buy ecological cleaning agent but I can't afford it« doesn't always imply that I really can't afford it. Maybe I don't want to change because I'm used to another one. This motivational conflict is illustrated as a conflict of *personal ecological norm* and *monetary costs*, however, actually *personal ecological norm* or *social norms* clash with *behavioral costs*.

It is not clear if it helps to uncover coping strategies. In fact, they fulfill the meaningful function of stress reduction. If we thoughtlessly make someone aware of his or her coping strategies, this could have negative consequences on the person's wellbeing. More favorable is an empathic approach that will be described in one of the next paragraphs on dealing with negative emotions.

Bottom line: Emotion-focused coping strategies reduce negative emotions. However, most of them increase the likelihood to show environmentally damaging behavior and block our way to environmental protection. For these reasons, environmentalists should be careful in dealing with negative emotions and always consider positive alternatives.

+ ↗ *www.youtube.com/watch?v=WjVW6roRs-w*

How can we deal with negative consequences of emotion-focused coping strategies?

⊜ Self-efficacy

We pay more attention to environmental problems if we believe we measure up to them and are indeed capable of doing something against them.[35] If I'm confronted with a video on factory farming, I will either use problem-focused coping strategies (e. g. distributing flyers with information on the topic) or choose emotion-focused coping strategies (e. g. telling myself that animals don't feel like humans), in order to deal with the situation. If I assume that I as an individual have no, or little influence on changing the situation, a low self-efficacy so to say, I'm determined to choose the second option. Therefore, believing that we can change our problems' sources is an essential factor for strengthening the use of problem-focused coping strategies.[35] You will find strategies for fostering self-efficacy in Chapter 1.3. In line with this, every lecture and every workshop should end with advice on how to actively cause a change as an individual, or a group. Preferably, this information is accompanied by examples of other people's achievements.

Bottom line: If we have strong self-efficacy beliefs, we tend to use problem-focused coping strategies.

⊜ Small dose

Under certain circumstances (like a lack of knowledge about the extent of a problem) and in small doses, negative emotions are very valuable.[35] If we provide information little by little, the probability of emotion-focused coping strategies decreases. With small amounts of negative emotions, we can avoid reframing of a situation or selective attentional biases, for instance. We will be more ready to expose ourselves to actual problems, i. e. use problem-focused coping strategies.

Bottom line: Given piece by piece, negative emotions are manageable.

Credible and significant sources

If people are afraid of (individual) consequences of environmental disasters, they will search for counterarguments discrediting the problems. To avoid a relativization of environmental problems, we have to provide information that is credible and significant (Chapter 1: *Hints for conveying information*). Often, information highlights negative consequences of our actions.[16] To illustrate the severity of a situation, people need additional information that frightening consequences could occur before they can prepare themselves – however, we should check that our sources are secure and trustworthy.[28] As mentioned above, we need to be sparing with fear-eliciting information and reflect on their application critically.

Bottom line: To face counterarguments, we need credible and meaningful sources.

Actively dealing with negative emotions

Deep ecology has an approach to consciously allow negative emotions like fear, anger, and helplessness about environmental problems and to practice dealing with them, too. A strong ability to deal with negative emotions makes it easier for us to take a closer look at environmental problems and withstand associated feelings – eventually even turning them into motivation. In accordance with psychotherapeutic approaches, Crompton and Kasser suggest three phases to cope with negative emotions.[18]

The first phase helps us to become aware of coping strategies. A group conversation uncovers them. Targeted questions about basic experiences start the conversation, e. g. »In my own life, how do I experience the worldwide ecological crisis that's becoming apparent?« Of course, we should ask these questions in a sensitive way with the aim of unveiling underlying emotions. In a second phase, unpleasant thoughts, feelings, and fears are processed that we are usually protected from by emotion-focused coping strategies. In this phase, we undergo experiences of grief, anger, or fear. Mindfulness (Chapter 4.1: Weighing Process) is one possible way of dealing with emotions. Most importantly, the group has to take up a role of non-judgmental and understanding support. Statements like »We understand that global warming

worries you and that you would rather not think about it...« can be helpful. In a third phase, we're jointly looking for new ways to deal with environmental problems and negative emotions. In a manner of speaking, we are trying to initiate problem-focused coping strategies.

Dealing with negative emotions in association with environmental damage plays a crucial role in environmental organizations. Allowing unpleasant emotions like fear or sadness often fosters pro-environmental behavior.[18] Confronting negative emotions, therefore, seems to equip environmentalists with energy that eases stress caused by environmental engagement.

Bottom line: If we deal with our negative emotions and emotion-focused coping strategies in an empathetic manner, we can gain strength to look out for problem-focused coping strategies.

⊖ Search for positive alternatives

Before spreading negative messages and causing people to be paralyzed from shock, environmentalists should consider positive alternatives. Maybe I could find a movie on the topic of meat consumption that is more gentle than »Earthlings«? More and above, it has great advantages to view ourselves as developers of new lifestyles instead of problem-solvers.

Our aim is to create a better world for nature, animals, and humans. We should always look out for the positive character of our engagement and encourage others to do the same.

Bottom line: We should prefer positive messages over negative ones.

8

The Model Taken all Together

Previous chapters introduced all components of the psychological model for explaining sustainable actions. On the following pages, all model components are taken together with measures to promote pro-environmental behavior that has been illustrated in this book.

Marginal notes concerning the model

No stage-model. We should note that the psychological model for explaining sustainable behavior does not pose a stage model in which one stage has to be completed or one component "fulfilled" in order to initialize a next stage. Rather it is a model that describes actual environmental actions as an interplay of many factors. Thereby, a strong manifestation of one factor can already be enough to evoke pro-environmental behavior. For instance, if my group of friends typically buys second-hand clothes (*social norm*), I might just join without even knowing about awful production conditions of new clothes. If you're interested in a stage model explaining pro-environmental behavior with several sequenced stages and components, we recommend the *stage model of self-regulated behavior* by Bamberg.[4]

No silver bullet. Some of the illustrated psychological measures have strong effects on behavior change: *cognitive dissonance*, *goal-setting*, *social modeling*, or *prompts*.[57] However, there is no psychological all-purpose remedy that works for all types of environmental behavior.[57] One method seems to be more useful in explaining recycling behavior, another one predicts changes in mobility choice, and not all measures have so far been examined for all topics and environmental aspects. Schultz presents a rough classification.[66] According to him, measures like *information*, *feedback*, *prompts*, *cognitive dissonance*, *self-commitment*, and *making-it-easy* are more suited for a target group that's already motivated. Thus, they are especially effective if a target group already has a strong *personal ecological norm*. If they are less motivated, we should make use of *OUGHT-* and *IS-norms*, *social modeling*, and *financial incentives*, or *sanctions*.

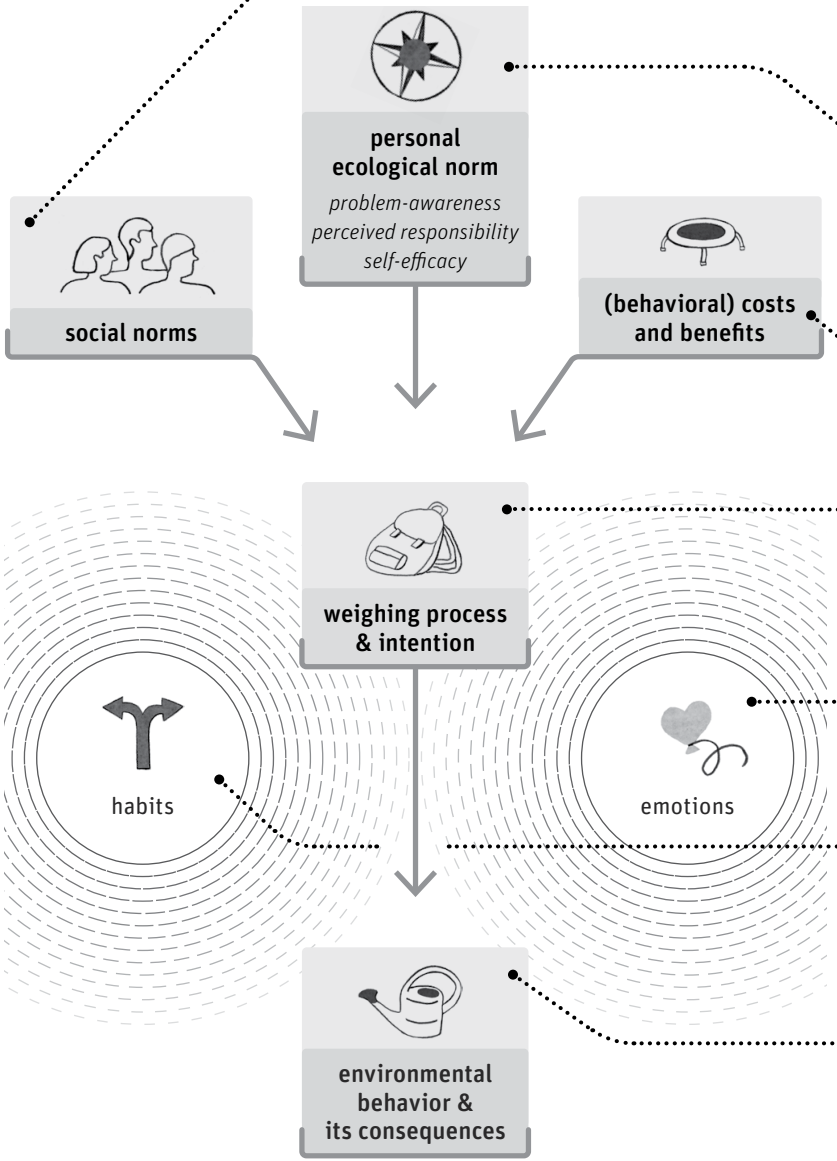
Combination. We have to note that it is often not enough to only foster one behavioral factor. Information strategies do activate a *personal ecological norm*, however, if the balance of *(behavioral) costs and benefits* doesn't favor

the behavior, it could be that our measure has no effect on actual behavior.[51] A great advantage lies in the combination of several measures. For example, Matthies found in a study on car use that a combination of two measures was more effective than one measure alone.[51] She combined "free tickets for public transport" and "self-commitment to reduce car use".

Avoid reactance. A reaction that we should avoid in all measures is a construct psychologists call *reactance*. Reactance is a defiance reaction that emerges if we demand too much of someone and try to control him or her.[16] As environmentalists, we should respect that people have a freedom of choice and, in accordance with this, communicate appreciatively. If not, we can – justifiably – expect defiant people. For instance, others might vandalize our newly attached sticker-*prompts* for reducing paper waste of printers when they consider them an attack against their independence.

Actual behavior makes a difference. To sum up, we should always keep in mind that neither *perceived responsibility*, nor *social norms* or intentions do solve environmental problems.[31] Only through actual pro-environmental behavior, we can create a more environmentally-friendly world.

→ Now it is time to reread your questions for environmental psychology on page 18 and try to answer them with your gained knowledge.



Chapter 2

- Focus OUGHT- and IS-norms skillfully and in combination
- Serving as a model
- Making use of minority influences

Chapter 1

- Communication of problem-knowledge
- Self-awareness and cognitive dissonance
- Self-commitment

- Communication of action-knowledge
- Demonstrate behavioral options and their impact
- Skill training

- Feedback
- Create opportunities
- Facilitate action with situational changes

Chapter 3

- Reward and sanction
- Making it easy
- Making use of your passions

Chapter 4

- Mindfulness
- Reflect consciously
- Goal-setting
- Implementation intentions
- Prompts

Chapter 7

- Support and appreciation in groups
- Food and humor
- Storytelling
- Highlight relevance of judgment
- Significant sources
- Small doses of negative emotions
- Searching for positive alternatives

Chapter 6

- Temporal and strong change of the behavioral context

Chapter 5

- Self-rewarding
- Strengthen self-regulation
- Draw on many aspects

Figure 3. Psychological model for explaining sustainable actions – complemented with possible measures to foster pro-environmental behavior.

9

Guiding Questions for Environmental Actions

The following guiding questions are based on an article by Steg and Vlek and augmented by further advice.[74] In addition, they reference the psychological model for explaining sustainable actions (page 20), and its components (Chapters 1 to 7). Since it is a catalogue of questions, you can go through all of them before giving a lecture or workshop, or starting a campaign. This way, you will implement your action in a psychologically valuable manner and create a lot of potential for pro-environmental behavior change. In Chapter 10, you will find a so-called canvas in which you can record all considerations concerning your environmental action.

1. Which behavior do I want to change?

Many times, our motivation to implement a certain environmental action awakens if we learn about an environmentally damaging behavior that we want to impede or an environmentally-friendly behavior we want to foster. Therefore, this question might be answered quickly. Nevertheless, it makes sense to take a second look and consciously choose a behavior with a significant environmental influence.[28] For example, recycling behavior saves resources. But before deciding to foster usage of recycling paper, I can consider its alternatives – real paper reuse or a reduction in paper usage might have even bigger environmental effects. Next, I can pointedly make a choice for a measure that best promotes my environmental aim. It can be helpful to ask ourselves the following questions:

- ○ What is my personal environmental goal?
- ○ How can I as an individual and we as a group most effectively reach this goal?
- ○ What environmental impact does the chosen behavior have?
- ○ Is a long-term change likely?

- ○ How well can other people observe the target behavior?
- ○ Can the target behavior potentially set a trend?
- ○ Is the target behavior facilitated if many people implement it? (scale effects)
- ○ Does the behavior lead to a structural change? Does it send a political signal?
- ○ Does the target behavior support a sustainable company or environmental organization?

2. What characteristics does the behavior show?

Before every kind of action, I can ask myself questions about specific characteristics of my target behavior in order to adjust the action accordingly.

- ○ Is it a one-time or repeated behavior?
- ○ Is the target behavior individual or collective? (e. g. recycling vs. demonstration)
- ○ What comfort needs might prevent the target behavior? What costs are associated with it? What reasons favor the action? (Chapter 3: *(behavioral) costs and benefits*)
- ○ Is the target behavior aware or unaware, intentional or habitual? (Chapter 6: *habits*)
- ○ What emotions are associated with it? (Chapter 7: *emotions*)

3. Which target group do I choose?

As a next step, I could think about a target group that I want to reach with my action. Doing so, I make assumptions about characteristics specific to my target group – because they tell me which measures are more or less sensible. If I have time for it, a small pre-survey could help me answer these questions.

- ◯ How big is my target group?
- ◯ What geographical and socio-demographical characteristics does my target group have (e.g. age, or sex)?
- ◯ Is it rather heterogeneous or homogenous?
- ◯ Which social groups do participants of my action belong to?
- ◯ Is it possible that my target group participates in the action planning process?
- ◯ Was there already another measure implemented? If so, did it succeed?
- ◯ Do members of my target group already have sufficient knowledge about environmental problems? Which knowledge do they have so far? (Chapter 1.1: *problem-awareness*)
- ◯ Do they feel responsible for environmental problems that my action targets? (Chapter 1.2: *perceived responsibility*)
- ◯ Do they believe that they can make a difference? (Chapter 1.3: *self-efficacy*)
- ◯ Does my target group know which behavioral options they have in actual everyday situations? (Chapter 1.3: *action-knowledge*)

- ○ What does their social environment look like? Is the behavior implemented by a majority or minority of people surrounding my target group? Can it be considered a social norm? (Chapter 2: *social norms*)
- ○ Are there key protagonists in the target group? (Chapter 2: *social norms*)
- ○ Which talents and passions do they have that I can draw on? (Chapter 3: *(behavioral) costs and benefits)*)
- ○ Is my target group still in a weighing process of several behavioral options? (Chapter 4.1: *weighing process*)
- ○ Do they have an intention to change their behavior? (Chapter 4.2: *intention*)
- ○ Is my target group in a transitional stage in life? (Chapter 6: *habits*)

4. Which model components do I want to include?

The psychological model for explaining sustainable actions gives us many starting points for promoting the target behavior of questions 1 and 2. Now, we have to decide which model components we want to include.

- ○ Which model components prevent pro-environmental behavior of my target group? Which components facilitate it?
- ○ Which components can be changed most easily concerning my target behavior?
- ○ Do I want to change one or more components?
- ○ Does my target group have a strong personal ecological norm, meaning a lot of action motivation? Or is there only little individual motivation? (Chapter 8: *marginal notes concerning the model*)
- ○ Do behavioral options exist? Could I facilitate or impede the target behavior with a change of infrastructure? (Chapter 1.4: *excursus: behavioral context*)
- ○ Which emotions do I want to provoke? (Chapter 7: *emotions*)

5. Which type of measure is suitable?

Now, we make recourse to particular measures illustrated in this handbook that help us to foster pro-environmental behavior of our target group via certain model components. On page 100, you see how all measures are connected to specific model components.

- ○ Which measure suits my target group, me, or the group that wants to carry out the action, best?
- ○ Which measure portrayed in this handbook inspires me?
- ○ Which measure is suggested by studies?
- ○ Which measure is good publicity and therefore spreads more easily?
- ○ What should I consider when implementing a measure? (Chapter 1.1 and 1.3: *hints for communicating information*)
- ○ Which emotions will I most likely cause? What can I do to help participants of my action deal with their negative emotions? (Chapter 7: *emotions*)
- ○ Which coping-strategies might participants use in order to not have to change their behavior? (Excursus 7.3: *coping strategies*)
- ○ How can we foster a long-term behavioral change and avoid a relapse into old patterns? (Chapter 5: *pro-environmental behavior and its consequences*)

6. What are results of my action?

In order to rate effectiveness of my action, it is important that I systematically evaluate it. For example, if I carry out a workshop at the University for promoting a vegetarian diet, I could ask for feedback immediately after the event or distribute questionnaires. I could also observe if more students have lunch at the vegetarian cafeteria in the following month. An evaluation can take place directly after an action or with a temporal delay, depending on my interest for short-term or long-term consequences.

With a pre-post-comparison, I could for example assess the following points to evaluate my action's success:

- ○ Did model components change that were included in my action?
- ○ Is there an actual behavior change?
- ○ Which are resulting improvements, or impairments for the environment?
- ○ Do my participants experience a change in quality of life?
- ○ What is the direct feedback and evaluation of my action's participants?

10

My Environmental Psychology Canvas

From theory to action

While planning environmental actions, intuition and knowledge often become blurred. A process with small steps makes it easy to implement the gained knowledge. For finding a suitable measure for the right target group, the canvas has been tried and tested. This environmental psychology canvas supports you with planning an environmental action. It is an alternative or addition to guiding questions from Chapter 9. Importantly, the canvas is no action guide but an environmental psychology reflection tool for possible influences on behavior. As a creative brainstorming tool, it can be used alone or in a group. At first, we will give an example of how it could look. On the following pages, you will find space to fill your own canvas.

Illustration 7. You can use an environmental psychology canvas to plan your action and implement your knowledge of environmental psychology.

⊜ Planning the action

If you want to work with the canvas, you might take the following steps:

- **In a first step**, you can phrase a goal and specify a behavior and measures that the action should be all about. Questions on the next page will help you with it.

- **In a next step**, you fill the canvas with all your ideas that come to mind when thinking about single model components concerning the status quo or a potential change. Let your creativity run free!

- **In a last step**, you can summarize all results. For instance, you can do this by marking main ideas in color, prioritizing ideas with sticky points, drawing connecting lines, or much more.

This way, the canvas will help you discover new potentials through newly gained psychological knowledge. Later during action planning, you can look back at your ideas and conclusions.

Moreover, you have the possibility of downloading a canvas template on the following website ↗ www.ipu-ev.de/handbuch

Example of specifying behavior and action

My goal: Reduce paper usage

My behavior of choice: Stickers against free ads and newspaper
⇨ attach, single-time, individual

My measure: Throw sticker + message in mailboxes

My target group: My neighborhood, a rather heterogeneous group,... maybe let them participate in the action beforehand?

My context of action: My neighbors will find a sticker with a friendly message in their mailboxes, it is very simple and easy to use.

Illustration 8. Example of specifying behavior and action.

Specifying behavior and action

My goal: .....

.....

.....

My behavior of choice: .....

.....

.....

My measure: .....

.....

.....

My target group: .....

.....

.....

My context of action: .....

.....

.....

Illustration 9. Specifying behavior and action – to fill out.

Elements of the environmental psychology canvas

To make working with the canvas easier, here is a short recap of all of the model components. Additionally, you'll find exemplary questions in italics.

Personal ecological norm contains problem-awareness, perceived responsibility, and self-efficacy.

Problem-awareness is the perception that our natural environment is endangered.
Does my target group understand the problem?

Perceived responsibility is the awareness that my own behavior is relevant for environmental damages as well as the solution of environmental problems.
Does my target group feel personally responsible?

Self-efficacy is the belief that I can master a task with my own abilities.
Do I already foster the feeling that my target group can achieve something?

Social norms are rules and standards that are shared by many people and that guide individual behavior without the use of laws.
Is it apparent in my action that the majority of the target group approve and implement the conduct?

(Behavioral) costs and benefits are monetary or behavior-oriented (dis)advantages of a behavior.
Can I help to increase or highlight benefits of the target behavior? Can I decrease its costs?

Weighing process describes the balancing of pros and cons of an action. **Intention** is the plan to behave in a certain way.
Does the action encourage the development and conscious formulation of precise implementation intentions?

Pro-environmental behavior is the result of an interplay of all those components. It can have various consequences.
How can I help maintain the target behavior?

Habits are actions that have been automated through many repetitions.
Are there moments in which my target group might be especially open to novelties?

Emotions like fear, guilt, or joy can influence environmental behavior.
Do we preferably use positive emotions and do we utilize negative ones economically and thoughtfully?

The environmental psychology canvas

Social norms

OUGHT-norms: are mentioned on a message that comes along with the sticker

IS-norms: are very high in the chosen districts because many neighbors already have anti-ads stickers on their mailboxes

Conclusion: the more neighbors attach a new sticker, the stronger the IS-norms become :-)

Social models? There are none.

Personal ecological norm

Problem-awareness

... is probably high, because consequences of high paper consumption are typically known in Germany.

Topic can be touched in the message

It needs an appealing layout in order to raise attention!

Perceived responsibility

Unknown

Self-efficacy

Unknown

We'll raise it!

In the message we will demonstrate how much can be saved per household on the average.

Further ideas?
No competences are necessary :-)

(Behavioral) costs and benefits

Pro: they don't have to dispose of huge amounts of paper waste, maybe they feel molested by advertisements.

Con: They don't receive any free ads or newspapers anymore, can't look for sales, maybe have less to read, hear less about local events.

By throwing in stickers in the mailboxes, they don't have to buy one or go to the local district center, therefore our behavior is much more comfortable and behavioral costs are minimized.

Habits

Behavior is intentional and not automatic.

Target group members should change their habit.

Weighing process and intention

Most probably, the weighing process is really quick (the moment when they find a sticker in their mailbox), maybe they have to talk about it to a family member or flat mate before attaching it. Some neighbors probably have an intention to attach an anti-ads sticker, however, didn't do it so far because of convenience.

⇨ we could create a list of pros and cons and attach it to the message

Pro-environmental behavior and its consequences

If we highlight environmental protection in the message, it could lead to a spillover effect and maybe my target group will slowly behave more sustainable in the same domain!

Emotions

Probably, the behavior is not connected to many emotions. Eventually, people feel relieved of the huge amounts of paper that typically annoy them.

Anger over paper waste might encourage them to attach an anti-ads sticker.

Illustration 10. Example of the environmental psychology canvas.

The environmental psychology canvas

Social norms 	Personal ecological norm 			(Behavioral) costs and benefits 
	Problem-awareness 	Perceived responsibility 	Self-efficacy 	
Habits 	Weighing process and intention 			Emotions 
	Pro-environmental behavior and its consequences 			

Illustration 11. The environmental psychology canvas – to fill out.

Closing words

If you have questions, want to give feedback, or need psychological support for planning an environmental project, please send us an email at ↗ info@wandel-werk.org. The authors will be on hand with help and advice and, if necessary, forward your question to competent psychologists of the Initiative for Psychology in Environmental Protection. On our website ↗ www.wandel-werk.org the handbook is free to download as of January 2017. We hope that this handbook on environmental psychology will support you substantially in your personal commitment for environmental protection. Together, we can create a society that resonates with our natural environment and contributes to the happiness of all people. Make use of the environmental psychology tools and put them to work :)

Acknowledgements

Realizing this handbook, many people and organizations have given us their support. We are immensely grateful for their help and would like to name some of them.

Special thanks go to Verena Clamor, Jan Eickhoff, Prof. Andreas Ernst, Abbey Fox, Friedrich Herrmann, Eva Junge, Charlotte Löwer, Ivette Löwer, Christiane Ludwig, Thorsten Müller, Sebastian Neubert, Benjamin Ryba, Olaf Schenk, Benedikt Seger, Mandy Singer-Brodowski, Julia Steinhorst, Luzia Walsch, Karsten Valerius, and Luise Willborn.

We also give thanks to our partners that support this handbook financially: the *Ernst-Abbe-Stiftung*, the *Stiftung Forum für Verantwortung*, and the StuRa's Umweltreferat at the Friedrich-Schiller-University in Jena.

List of supporters

Finally, a successful crowdfunding campaign made it possible to publish this handbook. We give thanks to 234 supporters that gave from five up to five hundred Euros. In total, 6,460 Euros were collected! The following supporters helped us with at least 50 Euros:

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The **Initiative Psychologie im Umweltschutz** (IPU) **e.V.** (Initiative of Psychology in Environmental Protection) is an approved nonprofit association that is organized as a network and has 300 members spread all over Germany, Austria, and Switzerland. Its members are active in areas of psychology and sustainability. The goal of IPU e.V. is to foster environmental protection and sustainable development with the means of psychology. Since its foundation in 1993 in Konstanz, many local and work groups were founded in various cities. The IPU e.V. is based on an egalitarian and democratic basic understanding. Its members combine creativity, commitment, and scientific expertise. You'll find information on the following website: ↗ www.ipu-ev.de

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Appendix

Literature tips

In this handbook, the most relevant practical knowledge of environmental psychology research has been presented to you in a nutshell. You will find the authors' favorite books on environmental psychology in the following list:

- *Conservation psychology: Understanding and promoting human care for nature* by Clayton and Myers (2009)

- *Meeting environmental challenges: The role of human identity* by Crompton and Kasser (2009). Publicly available on the website: ↗ http://valuesandframes.org/downloads

- Special recommendation: *Psychology for a better world* by Harré (2011). Publicly available on the website: ↗ http://psych.auckland.ac.nz/psychologyforabetterworld

- *The psychology of environmental problems: Psychology for sustainability* by Koger and Winter (2010)

- *Environmental psychology: An introduction* by Steg, Van den Berg and De Groot (2012)

The choice of psychological knowledge illustrated in this handbook is, of course, not comprehensive. For this reason, we give you some additional literature tips on further topics like identity, risk perception, and values. The following books present these relevant factors in the framework of environmental psychology:

- **Values:** *Common cause for nature. A practical guide to values and frames in conservation* by Blackmore, Underhill, McQuilkin, Leach and Holmes (2013). Publicly available on the website: ↗ http://valuesandframes.org/initiative/nature

- **Risk perception:** *Environmental problems and human behavior* by Gardner and Stern (2002)

- **Identity:** *Psychology for a better world* by Harré (2011). Publicly available on the website: ↗ http://psych.auckland.ac.nz/psychologyforabetterworld

In the course of researching for this handbook, we found some documents in English that present similar summaries as our handbook and are publicly available online:

- *Promoting sustainable behavior. A guide to successful communication* by James (2010). ↗ http://sustainability.berkeley.edu/sites/default/files/Promoting_Sustain_Behavior_Primer.pdf

- *The psychology of sustainable behavior: Tips for empowering people to take environmentally positive action* by Manning (2009). ↗ http://www.pca.state.mn.us/index.php/view-document.html?gid=12949

- *Fostering sustainable behavior: Community-based social marketing* by McKenzie-Mohr (2012). ↗ www.cbsm.com/pages/guide/preface

References

1 Abrahamse, W., Steg, L., Vlek, C. & Rothengatter, J. A. (2005). A review of intervention studies aimed at household energy conservation. *Journal of Environmental Psychology, 25*, 273–291.

2 Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179–211.

3 Bamberg, S. (2002). Effects of implementation intentions on the actual performance of new environmentally friendly behaviours – results of two field experiments. *Journal of Environmental Psychology, 22*, 399–411.

4 Bamberg, S. (2013). Changing environmentally harmful behaviors: A stage model of self-regulated behavioral change. *Journal of Environmental Psychology, 34*, 151–159.

5 Bamberg, S. & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of determinants of pro-environmental behaviour. *Journal of Environmental Psychology, 27*, 14–25.

6 Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes, 50*, 248–287.

7 Barth, M., Jugert, P. & Fritsche, I. (2016). Still underdetected – social norms and collective efficacy predict the acceptance of electric vehicles in Germany. *Transportation Research Part F, 37*, 64–77.

8 Bator, R. J. & Cialdini, R. B. (2000). The application of persuasion theory to the development of effective pro-environmental public service announcements. *Journal of Social Issues, 56*, 527–541.

9 Becker, L. J. (1978). Joint effect of feedback and goal setting on performance: A field study of residential energy conservation. *Journal of Applied Psychology, 63*, 428–433.

10 Bilharz, M. (2009). *Key Points nachhaltigen Konsums. Ein strukturpolitisch fundierter Strategieansatz für die Nachhaltigkeitskommunikation im Kontext aktivierender Verbraucherpolitik.* Marburg: Metropolis.

11 Blackmore, E., Underhill, R., McQuilkin, J., Leach, R. & Holmes, T. (2013). *Common Cause for Nature. A Practical Guide to Values and Frames in Conservation.* Retrieved on 14.03.2016 from http://valuesandframes.org/initiative/nature

12 Brehm, J. (1972). *Responses to Loss of Freedom: A Theory of Psychological Reactance.* New York: General Learning Press.

13 Carnevale, P. J. D. & Isen, A. M. (1986). The influence of positive affect and visual access on the discovery of integrative solutions in bilateral negotiation. *Organizational Behavior and Human Decision Processes, 37*, 1–13.

14 Cialdini, R. B. (2003). Crafting normative messages to protect the environment. *Current Directions in Psychological Science, 12*, 105–109.

15 Cialdini, R. B., Reno, R. R. & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology, 58*, 1015–1026.

16 Clayton, S. & Myers, G. (2009). *Conservation Psychology: Understanding and promoting human care for nature.* West Sussex, UK: Wiley-Blackwell.

17 Cook, J. & Lewandowsky, S. (2011). *The Debunking Handbook.* St. Lucia, Australia University of Queensland. Retrieved on 14.03.2016 from www.skepticalscience.com/docs/Debunking_Handbook_German.pdf

18 Crompton, T. & Kasser, T. (2009). *Meeting environmental challenges: The role of human identity.* Retrieved on 14.03.2016 from http://valuesandframes.org/downloads

19 Daamen, D. D. L, Staats, H., Wilke, H. A. M. & Engelen, M. (2001). Improving environmental behavior in companies. The effectiveness of tailored versus nontailored interventions. *Environment and Behavior, 33*, 229–248.

20 De Young, R. (1996). Some psychological aspects of reduced consumption behavior: The role of intrinsic satisfaction and competence motivation. *Environment and Behavior, 28*, 358–409.

21 Dwyer, W. O., Leeming, F. C., Cobern, M. K., Porter, B. E. & Jackson, J. M. (1993). Critical review of behavioral interventions to preserve the environment: Research since 1980. *Environment and Behavior, 25*, 275–321.

22 Edelmann, W. & Wittmann, S. (2012). *Lernpsychologie* (7. Aufl.). Weinheim: Beltz PVU.

23 Elliott, M. A. & Armitage, C. J. (2006). Effects of implementation intentions on the self-reported frequency of drivers' compliance with speed limits. *Journal of Experimental Psychology: Applied, 12*, 108–117.

24 Eriksson, L., Garvill, J. & Nordlund, A. M. (2008). Interrupting habitual car use: The importance of car habit strength and moral motivation for personal car use reduction. *Transportation Research Part F: Traffic Psychology and Behaviour, 11*, 10–23.

25 Festinger, L. (1957). *A theory of cognitive disonance.* Evanston, IL: Row, Peterson.

26 Fritsche, I., Jonas, E. & Frankhänel, T. (2008). The role of control motivation in mortality salience effects on ingroup support and defense. *Journal of Personality and Social Psychology, 95*, 524–541.

27 Fujii, S. & Gärling, T. (2003). Development of script-based travel mode choice after forced change. *Transportation Research, 6*, 117–124.

28 Gardner, G. T. & Stern, P. C. (2002). *Environmental problems and human behavior.* Boston, MA: Pearson Custom Pub.

29 Geller, E. S. (1995). Actively caring for the environment: An integration of behaviorism and humanism. *Environment and Behavior, 27*, 184–195.

30 Geller, E. S., Winett, R. A. & Everett, P. B. (1982). *Preserving the Environment: New Strategies for Behavior Change.* Elmsford, NY: Pergamon.

31 Gifford, R. D. (2014). Environmental psychology matters. *Annual Review of Psychology, 65*, 541–579.

32 Greenberg, J., Koole, S. & Pyszczynski, T. (2004). *Handbook of Experimental Existential Psychology.* New York: Guilford Press.

33 Hamann, K. R. S., Reese, G., Seewald, D. & Loeschinger, D. C. (2015). Affixing the theory of normative conduct (to your mailbox): Injunctive and descriptive norms as predictors of anti-ads sticker use. *Journal of Environmental Psychology, 44*, 1–9.

34 Harland, P., Staats, H. & Wilke, H. (1999). Explaining proenvironmental intention and behavior by personal norms and the theory of planned behavior. *Journal of Applied Social Psychology, 29*, 2505–2528.

35 Harré, N. (2011). *Psychology for a Better World.* Auckland Department of Psychology, University of Auckland. Retrieved on 14.03.2016 from https://www.psych.auckland.ac.nz/psychologyforabetterworld

36 Herring, H. & Sorrell, S. (2008). *Energy Efficiency and Sustainable Consumption: Dealing with the Rebound Effect.* Basingstoke, UK: Palgrave Macmillan.

37 Hines, J. M., Hungerford, H. R. & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *Journal of Environmental Education, 18*, 1–8.

38 Homburg, A. & Stolberg, A. (2006). Explaining pro-environmental behavior with a cognitive theory of stress. *Journal of Environmental Psychology, 26*, 1–14.

39 Homburg, A., Stolberg, A. & Wagner, W. (2007). Coping with global environmental problems: Development and first validation of scales. *Environment and Behavior, 39*, 754–778.

40 Hunecke, M. (2013). *Psychische Ressourcen zur Förderung nachhaltiger Lebensstile.* Denkwerk Zukunft. Retrieved on 14.03.2016 from www.denkwerkzukunft.de/downloads/MemoPsycho.pdf

41 James, R. (2010). *Promoting Sustainable Behavior. A Guide to Successful Communication.* Office of Sustainability, University of California, Berkeley. Retrieved on 14.03.2016 from http://sustainability.berkeley.edu/sites/default/files/Promoting_Sustain_Behavior_Primer.pdf

42 Jonas, K., Stroebe, W. & Hewstone, M. (2007). *Sozialpsychologie: Eine Einführung* (5. Aufl.). Heidelberg: Springer.

43 Kasser, T. (2005). Frugality, generosity, and materialism in children and adolescents. In K. A. Moore & L. H. Lippman (Eds.). *What do Children Need to Flourish? Conceptualizing and Measuring Indicators of Positive Development* (pp. 357–373). New York: Springer Science.

44 Kazdin, A. (2009). Psychological science's contributions to a sustainable environment. Extending our reach to a grand challenge of society. *American Psychologist, 64*, 339–356.

45 Khoury, B., Sharma, M., Rush, S. E. & Fournier, C. (2015). Mindfulness-based stress reduction for healthy individuals: A meta-analysis. *Journal of Psychosomatic Research, 78*, 519–528.

46 Kleinhückelkotten, S., Moser, S. & Neitzke, H.-P. (2016). *Repräsentative Erhebung von Pro-Kopf-Verbräuchen natürlicher Ressourcen in Deutschland (nach Bevölkerungsgruppen).* Dessau-Roßlau: Umweltbundesamt.

47 Lehman, P. K. & Geller, E. S. (2004). Behavioral analysis and environmental protection accomplishments and potential for more. *Behavior and Social Issues, 13*, 13–32.

48 Lertzman, R. (2008). The myth of apathy. *Ecologist, 19*, 16–17.

49 Mandel, N. & Heine, S. J. (1999). Terror management and marketing: He who dies with the most toys wins. *Advances in Consumer Research, 26*, 527–532.

50 Marshall, G. (2007). *Carbon Detox: Your Step-by-Step Guide to Getting Real About Climate Change.* London: Gaia.

51 Matthies, E. (2005). Wie können PsychologInnen ihr Wissen besser an die PraktikerIn bringen? Vorschlag eines neuen integrativen Einflussschemas umweltbewussten Alltagshandelns. *Umweltpsychologie, 9*, 62–81.

52 Michie, S., Johnston, M., Francis, J., Hardeman, W. & Eccles, M. (2008). From theory to intervention: Mapping theoretically derived behavioural determinants to behaviour change techniques. *Applied Psychology, 57*, 660–680.

53 Midden, C., Kaiser, F. & McCalley, T. (2007). Technology's four roles in understanding individuals' conservation of natural resources. *Journal of Social Issues, 63*, 155–174.

54 Mosler, H.-J. (2012). A systematic approach to behavior change interventions for the water and sanitation sector in developing countries: a conceptual model, a review, and a guideline. *International Journal of Environmental Health Research, 22*, 431-449.

55 Norgaard, K. M. (2006). People want to protect themselves a little bit: Emotions, denial and social movement nonparticipation. *Sociological Inquiry, 76*, 372–396.

56 Olli, E., Grendstad, G. & Wollebaek, D. (2001). Correlates of environmental behaviors: Bringing back social context. *Environment and Behavior, 33*, 181–208.

57 Osbaldiston, R. & Schott, J. (2012). Environmental sustainability and behavioral science: Meta-analysis of pro-environmental behavior experiments. *Environment and Behavior, 44*, 257–299.

58 Pallak, M. S., Cook, D. A. & Sullivan, J. J. (1980). Commitment and energy conservation. *Applied Social Psychology Annual, 1*, 235–53.

59 Peters, A., Marth, H., Semmling, E., Kahlenborn, W. & de Haan, P. (2015). *Rebound-Effekte: Ihre Bedeutung für die Umweltpolitik.* adelphi consult. Dessau-Roßlau: Umweltbundesamt.

60 Pichert, D. & Katsikopoulos, K. V. (2008). Green defaults: Information presentation and pro-environmental behaviour. *Journal of Environmental Psychology, 28*, 63–73.

61 Potreck-Rose, F. & Jacob, G. (2003). *Selbstzuwendung, Selbstakzeptanz, Selbstvertrauen. Psychotherapeutische Interventionen zum Aufbau von Selbstwertgefühl* (2. Aufl.). Stuttgart: Klett-Cotta.

62 Prochaska, J. O. & DiClemente, C. C. (1983). Stages and processes of self-change of smoking: toward an integrative model of change. *Journal of Consulting and Clinical Psychology, 51*, 390–395.

63 Reese, G. & Jacob, L. (2015). Principles of environmental justice and pro-environmental action: A two-step process model of moral anger and responsibility to act. *Environmental Science and Policy, 51*, 88–94.

64 Rockström, J., Steffen, W., Noone, K., Persson, A., Chapin, F. S., Lambin, E. F. & Foley, J. A. (2009). A safe operating space for humanity. *Nature, 461*, 472–475.

65 Salas, E., Tannenbaum, S. I., Kraiger, K. & Smith-Jentsch, K. A. (2012). The science of training and development in organizations. What matters in practice. *Psychological Science in the Public Interest, 13*, 74–101.

66 Schultz, P. W. (2014). Strategies for promoting proenvironmental behavior: Lots of tools but few instructions. *European Psychologist, 19*, 107–117.

67 Schultz, P. W., Nolan, J., Cialdini, R., Goldstein, N. & Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms. *Psychological Science, 18*, 429–434.

68 Schwartz, S. H. (1977). Normative influences on altruism. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 10, pp. 222–280). New York: Academic Press.

69 Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1–65). Orlando, FL: Academic Press.

70 Schwartz, S. H. & Howard, J. A. (1981). A normative decision-making model of altruism. In J. P. Rushton & R. M. Sorrentino (Eds.), *Altruism and Helping Behavior* (pp. 189–211). Hillsdale: Erlbaum.

71 Sheeran, P. (2002). Intention–behavior relations: A conceptual and empirical review. *European R eview of Social Psychology, 12*, 1–36.

72 Sia, A. P., Hungerford, H. R. & Tomera, A. N. (1985). Selected predictors of responsible environmental behavior: An analysis. *Journal of Environmental Education, 17*, 31–40.

73 Spence, A., Pidgeon, N. F. & Uzzell, D. (2009). Climate change – psychology's contribution. *The Psychologist, 22*, 108–111.

74 Steg, L. & Vlek, C. (2009). Encouraging pro-environmental behavior: An integrative research agenda. *Journal of Environmental Psychology, 29*, 309–317.

75 Steg, L., Van den Berg, A. E. & De Groot, J. I. M. (2012). *Environmental psychology: An introduction.* Oxford, UK: John Wiley & Sons.

76 Stephan, W. G. & Stephan, C. W. (2000). An integrated threat theory of prejudice. In S. Oskamp (Ed.) *Reducing Prejudice and Discrimination* (pp. 23–45). Mahwah, NJ: Erlbaum.

77 Stich, A. & Wagner, T. (2012). Fooling yourself: The role of internal defense mechanisms in unsustainable consumption behavior. *Advances in Consumer Research, 40*, 408–416.

78 The City of Copenhagen (2015). *Copenhagen City of cyclists. The bicycle account 2014.* Retrieved on 19.03.2016 from http://www.cycling-embassy.org.uk/sites/cycling-embassy.org.uk/files/documents/Copenhagens-Biycle-Account-2014.pdf

79 Van Houwelingen, J. T. & van Raaij W. F. (1989). The effect of goal setting and daily electronic feedback on in-home energy use. *Journal of Consumer Research, 16*, 98–105.

80 Wood, W., Quinn, J. M. & Kashy, D. A. (2002). Habits in everyday life: Thought, emotion, and action. *Journal of Personality and Social Psychology, 83*, 1281–1297.

Catchword index

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