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Overcoming the Distance: Perspective Taking With Future Humans Improves Environmental Engagement

Sabine Pahl\textsuperscript{1} and Judith Bauer\textsuperscript{2}

Abstract
The present research tested the effect of perspective taking with a human victim of environmental change on environmental engagement. Participants watched a slideshow portraying a future scenario of a young woman being affected by negative environmental changes. Taking the perspective of this individual increased a set of three behavior indicators (intentions, time spent engaging with information materials, and number of brochures collected) compared with two control groups. The present research provides evidence that perspective taking with other humans can be a powerful trigger of engagement with environmental issues. Thus, perspective taking could be used to engage people with psychologically distant issues such as climate change, for which the full consequences will only become visible at a much later point in time.

Keywords
perspective taking, proenvironmental behavior, unobtrusive behavior measures, psychological distance, scenarios

\textsuperscript{1}University of Plymouth, Plymouth, UK
\textsuperscript{2}University of Erlangen, Erlangen, Germany

Corresponding Author:
Sabine Pahl, School of Psychology, University of Plymouth, Drake Circus, Plymouth PL4 8AA, UK
Email: sabine.pahl@plymouth.ac.uk
Decisions and behavior acts by individuals make powerful contributions to a society’s environmental record. For example, Dietz, Gardner, Gilligan, Stern, and Vandenbergh (2009) argued that behavior change is capable of reducing U.S. carbon emissions by 20% in the next 10 years. This is very attractive given that many new carbon-reduction technologies can only be developed and implemented in the longer term, and we need to reduce carbon emissions more immediately. However, it is a challenge to realize such behavior change. The present article argues that perspective taking in the context of future scenarios is a powerful approach to triggering action because it has the potential to overcome the psychological distance felt in the face of climate change and other environmental issues.

Dilling and Moser (2007) summarized several characteristics that hinder people’s understanding of and responses to climate change. Some of these characteristics are broad and encompass entire political and cultural systems, for example, “imperfect markets” that do not account sufficiently for externalities such as long-term environmental damage, or current media practices that may give undue voice to climate skeptics and alarmist reporting. However, other characteristics, specifically, lack of immediacy, remoteness of impacts, time lags, and uncertain science (Dilling & Moser, 2007), seem to resonate with the concept of psychological distance used in the social cognition literature (e.g., Liberman & Trope, 2008). Liberman and Trope (2008) observed that people routinely rely on direct experiences in the here and now but need to engage in mental construal to transcend the distance to more remote events and possibilities. They define four dimensions of psychological distance—temporal (later rather than now), spatial (elsewhere rather than here), hypothetical (possible rather than certain), and social (others rather than me/my family)—which are all highly relevant for climate change. Identifying psychological distance as a general problem underlying disengagement is potentially a valuable conceptual framework that can highlight successful avenues for communication and engagement.

If climate change and other long-term environmental changes are perceived as distant and of little relevance to people’s everyday lives, the challenge is to make these issues more compelling and meaningful to motivate sustainable behavior change. Methods and tools are needed to overcome the psychological distance. With many consequences only becoming visible in the future, one such tool is the use of future scenarios, which are typically narratives that portray life in 50 years or so, based on the best contemporary assumptions about possible changes. Future scenarios are also used by climate scientists to make predictions (e.g., Intergovernmental Panel on Climate Change [IPCC], 2007).
Sheppard and colleagues have recently used future scenarios to engage local communities in addressing future environmental change. Environmental change was made more compelling and meaningful by developing specific localized scenarios, based on rigorous climate science modelling (e.g., Shaw et al., 2009; Sheppard, Shaw, Flanders, & Burch, 2008). These local scenarios were presented in the context of participatory planning sessions in local communities. Initial evidence suggests that being exposed to the scenarios was associated with increased knowledge and willingness to support local adaptation measures (e.g., Tatebe, Shaw, & Sheppard, 2010). Although encouraging, we still know little about the extent to which this approach can overcome the psychological distance felt in the face of environmental change.

For example, although these scenarios were local (i.e., they reduced spatial distance from climate change as a global phenomenon to locally felt effects), they did not present a personal view of future changes; they were simply applied to the community as a whole. Future scenarios might be even more powerful if told in narratives by individuals, to provide a personal viewpoint, especially if those individuals are similar to the audience. Moreover, an audience might differ in their psychological approach to such scenarios, and this may lead to different outcomes. A key difference in approach relates to objective focus versus perspective taking (Batson, 1991). An objective view during these kinds of narratives focuses on information and on the facts presented, as opposed to a perspective-taking view. Perspective taking can trigger a range of feelings in the observer, ranging from empathy for what the target is experiencing and feeling to personal distress in the observer (Stocks, Lishner, & Decker, 2009).

Objective and perspective-taking approaches have been contrasted in previous perspective-taking research, which has focused on facilitating helping behavior. Batson (1991) showed that asking people to take the perspective of a person in need increased helping behavior, compared with asking people to remain objective. Batson typically had student participants listen to the plight of a young woman who had been injured in a car accident and fallen behind in her studies. Participants could help her by sharing notes and assisting with revision because they were on the same degree course. Importantly, participants in these studies were presented with the same information about the woman, only the instructions varied (“take the perspective” vs. “remain objective”). Simply approaching the same information under different instructions caused these different effects in helping.

Several reasons have been discussed as to why perspective taking increases helping behavior. Batson (1991) himself advocated an empathy–altruism link whereby people help because they feel for the person in need in an unselfish
way. This explanation has been debated by Cialdini et al. (1987) who showed that perspective taking also increases felt distress, and helping behavior could be interpreted as a way of alleviating this distress, thus benefiting the self. Batson, Early, and Salvarini (1997) have pointed out that different instructions may be linked to different motivations. Specifically, asking participants to imagine how the other is feeling (“imagine-other”) is said to trigger altruistic motivation, whereas asking participants how they would feel in the other’s situation (“imagine-self”) is said to trigger a mix of altruistic and egoistic motivations (see also Lamm, Porges, Cacioppo, & Decety, 2008; Stocks, Lishner, Waits, & Downum, 2011, for recent advances). Finally, research by Cialdini, Brown, Lewis, Luce, and Neuberg (1997) and Davis, Conklin, Smith, and Luce (1996) has shown that perspective taking leads to self–other merging, which makes it difficult to distinguish between altruistic and egoistic motives. The latter finding is in line with the suggestion that psychological distance may stand in the way of socially adaptive action, that is, helping someone in need. If a method was found that brought self and vulnerable others closer, the psychological distance would be reduced, and this should lead to increased helping behavior.

Three studies have recently used perspective taking with animals and plants to increase environmental concern. Schultz (2000) tested the effects of perspective-taking instructions on environmental concern for three types of targets. He presented participants with pictures either of people engaging in recreational activities in nature or of animals in their natural environment or of animals being harmed by environmental degradation (e.g., an otter in an oil spill). For all three targets, participants were either asked to remain objective or to take the perspective of the subjects in the pictures. Specifically, they were asked to imagine how the subjects felt. Perspective taking only had a significant effect when participants were presented with animals being harmed. In this case, people who took the perspective of a harmed animal subsequently had higher biospheric and altruistic concerns than did people who looked at these pictures objectively. Schultz (2000) suggested that this may be due to increased interconnectedness between the participants and the animals in distress, which is in line with reduced distance between the observer and the issue.

Sevillano, Aragones, and Schultz (2007) also tested perspective-taking effects on environmental concern. They focused only on the animal pictures in Schultz’ (2000) study and omitted the pictures of humans enjoying nature. In addition, they investigated the role of dispositional empathy. Again, participants were either instructed to remain objective or to think about how the subjects in the pictures were feeling. An additional control condition received
no viewing instructions. Replicating Schultz’ (2000) original findings, taking the perspective of an animal in distress was associated with higher biospheric concerns. This perspective-taking effect was not qualified by dispositional empathy.

Finally, Berenguer (2007) compared objective with perspective-taking instructions for either a dead bird or cut-down trees. Rather than environmental concern, his outcome measure was behavioral, relating to decisions about funding allocations. He introduced participants to a representative from a student action committee who was looking for input on budget allocations to five community programs, one of which engaged in environmental protection. Participants who took the perspective of an oil-covered bird or a chopped-down tree made higher resource allocations to the environmental program than participants who were instructed to take an objective perspective.

The perspective-taking studies reviewed above have extended Batson’s (1991) original helping studies to the environmental domain; they have also added visual images instead of merely playing an audiotape. However, these studies focused on animals and plants as victims. No research has to date applied perspective taking with human victims of negative environmental change. Humans are already suffering from environmental damage and will continue to be affected in the future. Moreover, it should be easier to take the perspective of something similar to the self (e.g., another person) rather than of something very dissimilar (e.g., a tree). Therefore, prior research may have missed the most powerful method of increasing attitudes and behavior: using perspective taking with humans to increase environmental engagement.

The present research used perspective taking in the context of future scenarios. The novel contribution is threefold. First, we asked people to take the perspective of human victims of adverse environmental conditions rather than of animals or plants. We used an “imagine-self” instruction because, according to Batson et al. (1997), “[i]f one wishes to maximize motivation to help, then inducing an imagine-self perspective may be more effective than inducing an imagine-other perspective” (p. 757). Second, we used future scenarios to communicate environmental change (compare Shaw et al., 2009). In addition, we made the scenario personal by using a standardized description of one specific hypothetical person from the future and her everyday life. Third, we focused on behavior indicators including the time spent engaging with sustainability-related information materials and the number of brochures collected. Only Berenguer (2007) have so far provided some behavioral evidence for perspective-taking effects in the environmental context. We also made some methodological improvements. To counter the additional issue of social desirability and self-presentation concerns, we included two direct behavior
measures that were unobtrusive, meaning that we observed what people did after we had told them the study was over. Finally, we also included a control group that was not exposed to the description at all. This allowed us to assess the general impact of being exposed to a personalized description. Our prediction was that perspective taking would enhance environmental engagement compared with the objective and control conditions.

Method

Participants and Design

A total of 83 social science students from a German university (34 males and 49 females; $M_{\text{age}} = 24.8$ years) were recruited for a study on the perception of environmental problems and received either course credit or a sweet after they had finished. They were also given the opportunity to take part in a prize draw for cinema tickets. Participants were randomly assigned to one of three conditions, by drawing lots from a hat. Two experimental groups were asked to listen to the experiences of a young woman living in the year 2105, who explained the negative effects environmental change has had on her life. Her narrative was accompanied by a slideshow. One of the experimental groups was instructed to take the perspective of the young woman (perspective), and the other group was instructed to remain objective and focus on the facts (objective). The third group was not exposed to the narrative or slideshow (control).

Materials

Information sheets. For use as an introduction to the study, we put together a one-page information sheet with recent newspaper clippings about the state of the environment and potential future developments (e.g., “World water resources will decrease by a quarter within the next 10 years”).

Instructions and slideshow. The instructions were as follows: “Try to imagine how you would cope if you were in this situation. How would these changes affect your life? How would you feel?” (perspective); “Try to analyze as objectively as possible what happened to this person and how these changes affected her life. Only pay attention to the objective facts!” (objective). The slideshow was introduced as a likely scenario “in case humans continue to act as they do currently.” Participants were asked to imagine the speaker was a woman living in the year 2105 who was talking about her negative experiences of environmental change. The slideshow consisted of eight photographic
images to illustrate her experiences. For example, she talked about going outside without sunscreen or other protective measures and how she burnt her uncovered hands as a consequence, illustrated with an image of a blistered hand. Another example was bathing in the sea, which led to a serious skin rash. This was illustrated with an image of the sea covered in foam (see Figure 1).

Manipulation check. This measure consisted of seven items (α = .83), for example, “I imagined what the speaker felt like” and “I adopted a distanced attitude when I watched the slideshow” (reversed). These were answered on 9-point Likert-type scales ranging from 1 (not at all) to 9 (very strongly). A univariate ANOVA showed that participants in the perspective-taking group had higher scores (M = 5.67) than did those in the objective group (M = 5.05), F(1, 52) = 3.00, p < .05 (one-tailed), η² = .06. This measure was not obtained in the control group because the control participants did not hear the narrative or view the slideshow.

Behavior indicators. We used a behavior intentions scale with 31 items (M = 4.28, SD = 0.72, Cronbach’s α = .85), based on Schahn’s (1999) original instrument, for example, “I will take care to take short showers only in order to save energy and water.” Responses were made on 7-point Likert-type scales, ranging from 1 (extremely unlikely) to 7 (extremely likely). Note that all the materials were printed on recycled paper.
Our unobtrusive behavior measures were collected after the study had ostensibly finished and consisted of the time participants spent looking at environmentally relevant information materials (in seconds) and the number of brochures they collected from these. Time was log-transformed because it was skewed. We treated the three measures as indicators of general environmental engagement. Therefore, we also z-standardized all three measures for use in a multivariate analysis.

**Procedure**

All three groups initially received the information sheet about the state of the environment and future developments. Participants in the experimental groups were then seated in a soundproof cubicle in the dark, facing a laptop monitor. Perspective or objective instructions were displayed in large letters on the screen before the slideshow with audio started. The objective- and perspective-taking groups then watched the slideshow about the state of the world in the year 2105. The control group was not exposed to audio or slideshow. After the slide show had finished, participants were led to a table outside the cubicle where they filled in the manipulation check measure and the measure of behavior intentions. Then they indicated their age, gender, and degree course.

After participants had completed these measures, they were told that they had finished the study. They were offered a sweet as a thank you, and they could write down their address to take part in the prize draw. Then the experimenter pointed out that if participants were interested, they were welcome to look at a range of brochures and information materials on environmental topics displayed on a series of tables near the exit. If participants started looking at the information desk, the experimenter turned her back on them and surreptitiously timed the length of their stay. Participants were fully debriefed when they started to leave the room and reached the exit door. When the participant had left, the experimenter counted the number of brochures remaining of each type, thereby inferring how many had been collected. None of the participants mentioned any suspicion about the information materials displayed. In total, the study took between 30 and 45 min.

**Results**

We used a 3 (experimental condition) × 3 (behavior indicator) mixed ANOVA to test the effects of our experimental manipulations on intentions, time spent, and brochures collected (all z-standardized). Experimental condition was the between-participants factor and behavior indicator was the
within-participants factor. The experimental conditions differed significantly, $F(2, 71) = 6.56, p = .002, \eta^2 = .16$, with behavior indicators overall being highest in the perspective group ($M = .42$), followed by the objective group ($M = .01$) and then the control group ($M = -.24$; linear polynomial contrast $p = .001$). This significant linear relationship indicates that environmental engagement increased with the experimental conditions, from control (lowest) to perspective taking (highest), with objective in the middle. The behavior indicators did not differ from each other, $F(2, 142) < 1, p = .85, \eta^2 = .002$, because they were $z$-standardized. More importantly, the Group $\times$Behavior interaction was also not significant, $F(4, 142) < 1, p = .70, \eta^2 = .02$, which indicates that the experimental effect was the same for each of the indicators, and we were justified in analyzing them together. Figure 2 shows these effects graphically for the separate behavior indicators.

To unpack the overall effect further, we ran Least Significant Difference (LSD) post hoc tests. The perspective-taking group showed significantly higher engagement compared with the control group, $p = .001$, and compared with the objective group, $p = .031$. Control and objective groups did not differ significantly, $p = .16$ (see $M$ previously). Table 1 reports the unstandardized scores to facilitate interpretation and the results of additional LSD tests separately for each behavior indicator. For example, participants took approximately twice as many brochures after perspective taking compared with objective and control.

**General Discussion**

There is considerable agreement in the scientific community that we must urgently address climate change. However, “more extensive adaptation than is currently occurring is required to reduce vulnerability to climate change” (IPCC, 2007, p. 14). The present article tested perspective taking with victims of environmental change as a method of increasing environmental engagement. Contrary to previous research that has applied this paradigm in the environmental context, we asked participants to take the perspective of another human rather than animals or plants suffering from environmental change, and we used a future scenario. We showed that perspective taking led to more environmental engagement (operationalized as proenvironmental intentions, collecting environmental brochures, and spending time looking through relevant information materials) compared with an objective condition and a control condition.

These results tie in with research on perspective taking as a method of increasing prosocial behavior (for example, Batson, 1991). However, the
Table 1. Unstandardized Scores (SD in Parenthesis) for Each Behavior Indicator by Condition

<table>
<thead>
<tr>
<th></th>
<th>Perspective</th>
<th>Objective</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intentions</td>
<td>4.42 (0.99)</td>
<td>4.36 (0.49)</td>
<td>4.08 (0.58)</td>
</tr>
<tr>
<td>Log time</td>
<td>5.36 (0.87)</td>
<td>4.86 (1.00)</td>
<td>4.72 (1.45)</td>
</tr>
<tr>
<td>Brochures</td>
<td>3.56 (4.00)</td>
<td>2.07 (2.48)</td>
<td>1.45 (1.40)</td>
</tr>
</tbody>
</table>

Note: Superscripts indicate differences between experimental groups according to LSD post hoc tests on the standardized scores, ps < .06.

Figure 2. Behavior indicators (standardized z scores) according to experimental condition
Note: Unstandardized scores are reported in Table 1.
enough to overcome the helplessness and associated low self-efficacy thought to be typical in the context of climate change.

Our findings on behavior extend prior research in the environmental domain that has shown perspective taking with animal and plants increased environmental concern (Schultz, 2000; Sevillano et al., 2007) and proenvironmental resource allocations (Berenguer, 2007). Our research is the first to include two measures of direct behavior acts that were taken unobtrusively when participants thought the study had finished. This is a strength because it circumvents issues of social desirability and good (or bad) participant bias. Addressing behavior change directly remains a challenge for researchers, but one that seems worthwhile addressing.

A number of limitations remain. First, our future scenario was developed ad hoc without validation by climate scientists, which was mainly due to resource constraints and lack of interdisciplinary collaborations at the time of conducting the research. In future research, efforts should be made to base scenarios on the most recent climate science findings (See. Sheppard et al., 2008). This would boost the applicability and relevance of the research and more likely capture the interest of policy makers. This would also rule out the possibility of mere curiosity influencing the effects because participants may have never heard of some of the climate effects we described. Second, our research does not claim to investigate a representative sample, and we do not know whether our results would generalize. Instead, we focused on a psychological mechanism that might help enhance responses to climate change, using an experimental design. Third, we portrayed a negative future, which has been discussed as another barrier to engagement if too alarmist (Dilling & Moser, 2007). It is possible that showing a happy healthy person in a sustainable future scenario might also motivate people to engage in sustainable behaviors (see Ojala, 2008, on the link between positive emotions and proenvironmental behavior but Pahl, Harris, Todd, & Rutter, 2005, on unrealistic optimism in this domain). Finally, we did not systematically examine the underlying processes. For example, we did not include measures of potential moderators, and we did not attempt to differentiate between egoistic and altruistic motivations. Future research would be well advised to consider this in more depth.

Perspective taking could be applied in a number of ways. In terms of potential interventions, it may depend on the specific goal of an intervention which target to use (animals, plants, or humans). It seems reasonable to assume that increasing donations to animal charities would be affected by perspective taking with animals, whereas other conservation efforts might profit from
focusing on plants. However, we think there is a strong argument for focusing more on humans when tackling the complex issue of environmental change. Humans are agents as well as victims of climate change, so illustrating the effects our current behavior has on “innocent” others seems very powerful (see Zlatev, Pahl, & White, 2010, for similar reasoning in the health domain).

Future research could test perspective taking as a method to overcome not just temporal distance as in the present research but also to overcome the social and spatial distance between agents of climate change (often in affluent developed countries) and victims (often in poorer developing countries). For example, if perspective taking is powerful enough to trigger empathy with a family in Bangladesh whose home has been flooded again, people might be more willing to reduce their carbon emissions. In addition, similarity could be maximized with more distant targets, for example, by making people choose the person most similar to themselves (young, old, with 2 children, going to school, etc.). This should encourage spontaneous perspective taking, along with a personal narrative, and might be particularly useful outside the basic research context.

We also made an effort to illustrate the issue with a personal narrative and images throughout. Visualizations may have effects in themselves even without a personal narrative (see, for example, Shaw et al., 2009; Sheppard et al., 2008), but we think any method that helps increase engagement and interest will be useful in applied contexts. However, the use of visualization needs to be thought through carefully. Taylor and Thompson (1982) reviewed vividness effects in the literature and highlighted that whatever is vivid needs to be closely tied to the message, as otherwise it may act as a distracter. Future research is needed to understand these psychological processes in more depth. For example, an experimental study could show either scenes of devastation following a climate change–induced storm or scenes of devastation with a person telling the viewer how the storm had destroyed his or her house or just present the personal narrative without images.

We would like to close this article by elaborating on the core finding. We found that people who had taken the perspective of someone negatively affected by climate change took away more brochures and spent somewhat more time engaging with environmental materials than participants who had been instructed to look at the same information objectively, compared with a no-information control. Some observers may see this increase in engagement as an unimportant or even trivial finding, and clearly, we have no evidence at this point on how this initial engagement may or may not trigger actual carbon-reducing behaviors. However, this small insight might help psychologists encourage more substantial behavior because attention and salience are
powerful mechanisms that are engaged before any behavioral decisions are taken. If interventions were to focus on increasing positive attention and engagement with the topic of environmental change and make these considerations part of people’s everyday decisions, they might stand a better chance at enhancing sustainable behaviors. Rather than focus on the end product (saving more energy or reducing car use), it might be more fruitful to investigate these initial attention processes that are tied to engagement (or disengagement) with the issue. Although speculative at this point, willingness to consider an issue might well be a good predictor of engagement and lifestyle change later on, as opposed to avoiding exposure to information about climate change. Future research should investigate under which conditions increasing the time spent engaging with these issues translates to enhancing deeper environmental engagement.

Authors’ Note
This research was conducted while both authors were at the University of Erlangen-Nuremberg, Germany. Parts of this research were presented at the International Congress for Psychology in Berlin, July 2008, and at the 8th Biennial Conference in Environmental Psychology in Zurich, September 2009.

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References


**Bios**

**Sabine Pahl** is a lecturer in the School of Psychology at the University of Plymouth. Her current research examines the impact of human activities in natural marine environments on human and habitat well-being, the use of thermographic images as prompts for energy saving behavior, and the role of optimistic/pessimistic future outlooks in motivating environmental action. She is part of the Changing Risky Behaviors group in Plymouth and affiliated with the Peninsula Medical School’s European Centre for Environment and Human Health.

**Judith Bauer** is currently undertaking PhD research in the Geographical Institute at the Humboldt-University, Berlin, on the topic of participatory media interventions with young people. Her particular project is aimed at developing self-identity to support sustainable consumption in the context of the BINK-project (Bildungseinrichtungen und nachhaltiger Konsum; www.konsumkultur.de)