NATIONAL SOCIO-ENVIRONMENTAL SYNTHESIS CENTER



In cities like Copenhagen, many are choosing sustainable options for transportation, like bicycles, rather than personal vehicles. Photo Credit: Wikimedia Commons, 2.0.

Lesson – What Influences Pro-Environmental Behavior? Learning from Psychological Research

By Margaret A. Palmer, SESYNC | July 25, 2023

Overview:

Today, there is wide acknowledgment that human activities and decisions are responsible for global warming; the scientific evidence is irrefutable (Lynas et al. 2021). Emissions of carbon dioxide and other greenhouse gasses have increased greatly since pre-industrial times. These gasses trap heat energy, which results in a warmer planet—in the atmosphere, on land, and in fresh waters and the oceans. Scientists now widely recognize the consequences of these emissions to humans as people experience increases in the frequency and severity of fires, floods, and droughts (e.g., Ebi et al. 2021). While physical and environmental scientists have spent considerable time tracking emissions and global changes, other scholars have been pursuing research to understand how to promote behaviors and decisions that reduce emissions and, more generally, promote any pro-environmental behavior. This short lesson draws from psychological research by scholar Linda Steg of the University of Groningen. It challenges learners to consider how individual and collective values influence pro-environmental behavior, as well as when and why people act upon those values. The lesson asks learners to read Steg's 2023 review article "Psychology of Climate Change" and then work in groups to complete an activity based on it.

Assumed Prior Knowledge:

Suitable for undergraduate and graduate learners or those new to the topic.

Learning Objectives:

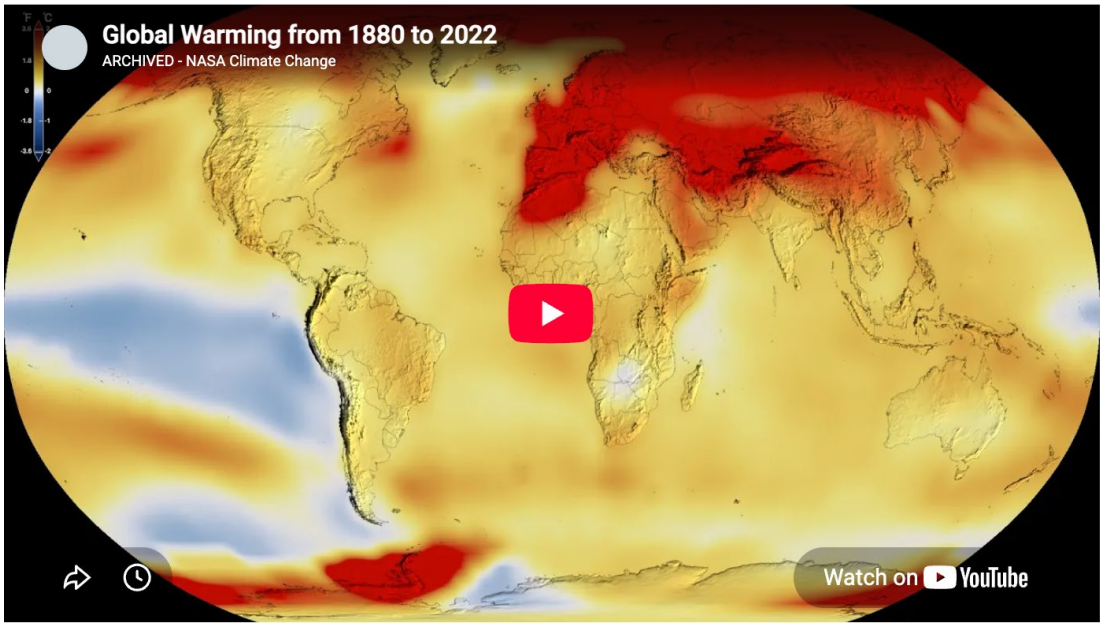
- Understand general factors that motivate environmental behaviors and decisions.
- Consider actions that may promote pro-environment decisions, especially in the context of climate change.
- Practice designing policies or intervention plans to promote pro-environmental behaviors.

Key Terms and Concepts:

hedonic values; egoistic values; altruistic values; biospheric values; ecocentric values; climate change beliefs; Theory of Planned Behavior; intentions vs. actions; salience; injunctive vs. descriptive norms

The "Hook" (suggestions for quickly engaging students):

Begin by jotting down the country or regions where you believe climate change has/is leading to the most warming. Then, spend several minutes viewing this short video from the U.S. National Aeronautics and Space Administration (NASA). It shows how the earth's average surface temperature changed from 1880–2022 compared to the average temperature from 1950–1980. Try to determine what the increase was for the region/country/state in which you were born then compare that to a European country where you may have traveled or have friends. If you are from Europe, make your comparison to a U.S. region. Where did you predict the greatest warming would be prior to seeing the video?



The video depicts changes in temperature on a global map with White on the map indicates no change (0); blue, cooling up to - 3.6 degrees F; red, warmer, up to almost +2 degrees F.

Teaching Assignments:

Influencing Pro-Environmental Behavior (One, 50-min. class)
This lesson is suitable for use following a lesson on the causes and consequences of climate change or on various mitigation/adaptation options being proposed around the world.

1. **Prior to Class:** As preparation for the session, have the learners read and take notes on the following article paying particular attention to the highlighted parts.

   Steg_2023_Highlighted.pdf

2. **(3 min.)** When participants have assembled together, ask each to jot down the following (using no resources such as web searches—they may guess if they don't know):

   - A region they believe has experienced the most climate change warming
   - How much of a temperature increase their birth region has experienced since the late 1800s
   - How they would guess that increase compares to the temperature increase in a country across the ocean from them.

3. **(2 min.)** Show the short NASA video ("Global Warming from 1880–2020") referenced in the Hook and let participants know they should look to compare and consider (but not change) the notes they took in response to step 2, i.e., prior to seeing the video. After the video is over, put up the static image from the video that is in Slide 2 in the PPT below.

   Pro-Environmental_Behaviors_Lesson_Slides_Accessible.pptx

4. **(5 min.)** Keeping the slide up, ask the learners to share how they responded and if they were close in their guesses or were surprised by the differences in temperature increase.

5. **(10 min.)** Have learners take out the notes they have from the Steg article. They should add to their own notes as they wish while you use the lesson's PowerPoint presentation to move through the slides as a quick review. You may want to first ask participants to recall when they have been successful (or not) at changing someone's mind/views. Perhaps it was during a time that they were arguing or wanting to argue with a person or perhaps it was in relation to some cause they believe in or were promoting for some reason.

6. **(30 min.)** Divide participants into groups of three or four. Informed by Steg's article describing reasons and mechanisms by which values can influence actions, each group should quickly brainstorm ideas, one each to activate the types of values that different people hold—hedonic, egoistic, altruistic, biospheric. These "ideas" would be suitable for, say, an image or graphic (with or without text) in a magazine, pamphlet or billboard that is meant to encourage people to adopt behaviors to reduce climate change or to perhaps mock those who do not. The ideas could also reflect another way to reach the public—say through a school activity, a play, a form of art, etc. Groups should use their imagination and try to sketch or write a few sentences about their idea to display to the other participants.

7. **Next Class:** Have each group bring their plans (visually depicted) to the next session and explain

them to the other participants.

Background Information for the Instructor:

1. **To select effective interventions for pro-environmental behavior change, we need to consider determinants of behavior**

    - This is an excellent article as it reviews, in a very digestible way, extensive research that leads the authors to propose a classification system linking determinants of behavior to types of interventions to promote behavior change. It is strongly based on science and theory and could help guide programs and plans to enhance pro-environmental behavior. One of the corresponding authors is Linda Steg. Many universities do not subscribe to this journal; however, the author was willing to share the paper with us when emailed.

    - van Valkengoed, A.M., Abrahamse, W., & Steg, L. (2023). To select effective interventions for pro-environmental behavior change, we need to consider determinants of behavior. *Nature Human Behavior, 6*, 1482-1492. https://doi.org/10.1038/s41562-022-01473-w

2. **Leveraging emotion-behavior pathways to support environmental behavior change**

    - This article expands on how evoking emotions can contribute to behavior change. Specifically, the authors propose what they call a "functional approach" to using emotions to promote behavior change. This article focuses on understanding the important role that context plays, implying that emotions have some function that is context dependent.

    - Williamson, K.A., & Thulin, E. (2021). Leveraging emotion-behavior pathways to support environmental behavior change. *Ecology and Society, 27*(3), 27. https://doi.org/10.5751/ES-13363-270327

3. **A framework for mapping and comparing behavioral theories in models of social-ecological systems**

    - A group of well-known socio-ecological researchers summarize very briefly the dominant theories of behavior change in the context of human-environment interactions. In addition to providing a very short and digestible description of six theories, it helps in comparing them and potentially applying them to models or in other contexts.

    - Schlüter, M., Baeza, A., Dressler, G. et al. (2017). A framework for mapping and comparing behavioral theories in models of social-ecological systems. *Ecological Economics, 131*, 21-35. https://doi.org/10.1016/j.ecolecon.2016.08.008

References:

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- Hwang, J., Chong, N.-S., Zhang, M. et al. (2023). Face-to-face with scorching wildfire: Potential toxicant exposure and the health risks of smoke for wildland firefighters at the wildland-urban interface. *The Lancet Regional Health – Americas, 21*, 100482. https://doi.org/10.1016/j.lana.2023.100482

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April 2022. Yale University and George Mason University. https://climatecommunication.yale.edu/publications/climate-change-in-the-american-mind-april-2022/

- Lynas, M., Houlton, B.Z. & Perry, S. (2021). Greater than 99% consensus on human caused climate change in the peer-reviewed scientific literature. *Environmental Research Letters, 16*(11). https://doi.org/10.1088/1748-9326/ac2966
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- National Aeronautics and Space Administration. *Global Warming from 1880 to 2022* [Video]. YouTube. https://youtu.be/LwRTw_7NNJs?si=DpM-hlSolvnIDJjF
- Steg, L. (2023). Psychology of climate change. *Annual Review of Psychology, 74*, 391-421. https://doi.org/10.1146/annurev-psych-032720-042905

Related SESYNC Content:

- Palmer, M.A. (2023, July 26). *Lesson – Climate Change and Choices: Change Behavior, Mitigate, or Adapt?* SESYNC. https://www.sesync.org/resources/climate-change-and-choices-change-behavior-mitigate-or-adapt
- Scott, H. (2023, August 15). *Explainer – Classical versus Behavioral Economics: Environmental Applications*. SESYNC. https://www.sesync.org/resources/classical-versus-behavioral-economics-environmental-applications
- Scott, H. (2023, September 5. *Lesson – Behavioral Economics and Timescale Mismatches Applications*. SESYNC. https://www.sesync.org/resources/lesson-behavioral-economics-and-timescale-mismatches
- SESYNC. (2022, July 18). *Incorporating Behavior into Socio-Environmental Systems Modeling* [Video]. YouTube. https://youtu.be/rjrjX8dnR9g?si=jAh67GbmqjflufYg
- SESYNC. (2022, April 7). *Socio-Hydrology: Including Human Behavior in Flood Risk Models* [Video]. YouTube. https://youtu.be/yqYoR8J8K48?si=CP5fzJiSJQkW4y3B
- SESYNC. (2022, April 12). *Sustainability through the Lens of Human Behavioral Ecology* [Video]. YouTube. https://youtu.be/o31uYLUnjfw?si=OIYEbccP6TyF3m-h

This work was supported by the National Socio-Environmental Synthesis Center (SESYNC) under funding received from the National Science Foundation DBI-1639145.