PhD Dissertation
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ABSTRACT

Anthropogenic climate change is currently one of the biggest threats facing the human population across the globe. A vast majority of scientists agree that climate change is real, human caused, and action needs to be taken; and they have the scientific studies to support their stance on the issue. However, a majority of Americans are disconnected from the issue and do not have a strong or clear understanding of climate change regardless of whether they are alarmed or dismissive of the issue. This dissertation explores the practicality, usefulness, and effectiveness of metaphors in climate change discourse. An overview of metaphor as a construct through a literature review explains how metaphors work in research and in practice as well as an operational analysis of how the effectiveness of metaphors is examined. Three sequential studies were designed to develop, test, and refine a set of explanatory essays for four climate change concepts.

The first study involved in-depth interviews with experts to provide validation of the science and metaphors of each of the essays. Overall, experts are intrigued by the use of metaphors and view them as a promising way to explain and connect to lay audiences, pending the science is accurate and the metaphors are appropriate. The expert reviews were applied to the essays, and the second study interviewed non-experts, discussing in-depth the revised explanatory essays. The second set of interviews helped to gain an understanding of how non-scientists construct knowledge about climate change and gauge how helpful and clear the essays were to a lay audience. The non-expert participants expressed the usefulness of the metaphors by identifying them in the essays and articulating positive reactions to the explanatory device. In explaining the concepts though, they did not repeat the metaphor in their improved, more detailed and confident explanations after reading the essays. Finally, the third study was a message testing experiment involving 1523 participants which examined understanding and belief certainty of climate change before and after exposure to a science, metaphor, or combination explanatory essay for one of four topics. Despite the predominant trending, but non-significant differences between explanation types, there is evidence of increasing understanding and greater acceptance of climate change when a climate change concept is explained using a combination of metaphor and science. The collective results of this dissertation further support the usefulness of metaphors in explaining climate change concepts to lay audiences. Additional theoretical and practical implications for the three studies are also discussed.