

# Climate Change Risk Perception Among Adolescents

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## Introduction

Among adults, climate change risk perception is more related to worldviews than scientific understanding. Research suggests scientific literacy makes hierarchical-individualists less concerned about climate change and makes egalitarian-communitarians more concerned about climate change. Research is needed to determine if K-12 climate literacy efforts will work across different worldviews among adolescents or simply polarize risk perception as seen among adults.

## Purpose

The purpose of this study is to evaluate how climate change knowledge and worldviews influence acceptance of anthropogenic global warming (AGW) and climate change risk perception among adolescents. Research questions included:

1. What is the role of worldview in forming climate change risk perceptions among adolescents?
2. What is the role of climate change knowledge?
3. Do worldview and knowledge interact in polarizing ways among adolescents as they do among adults?

## Methods

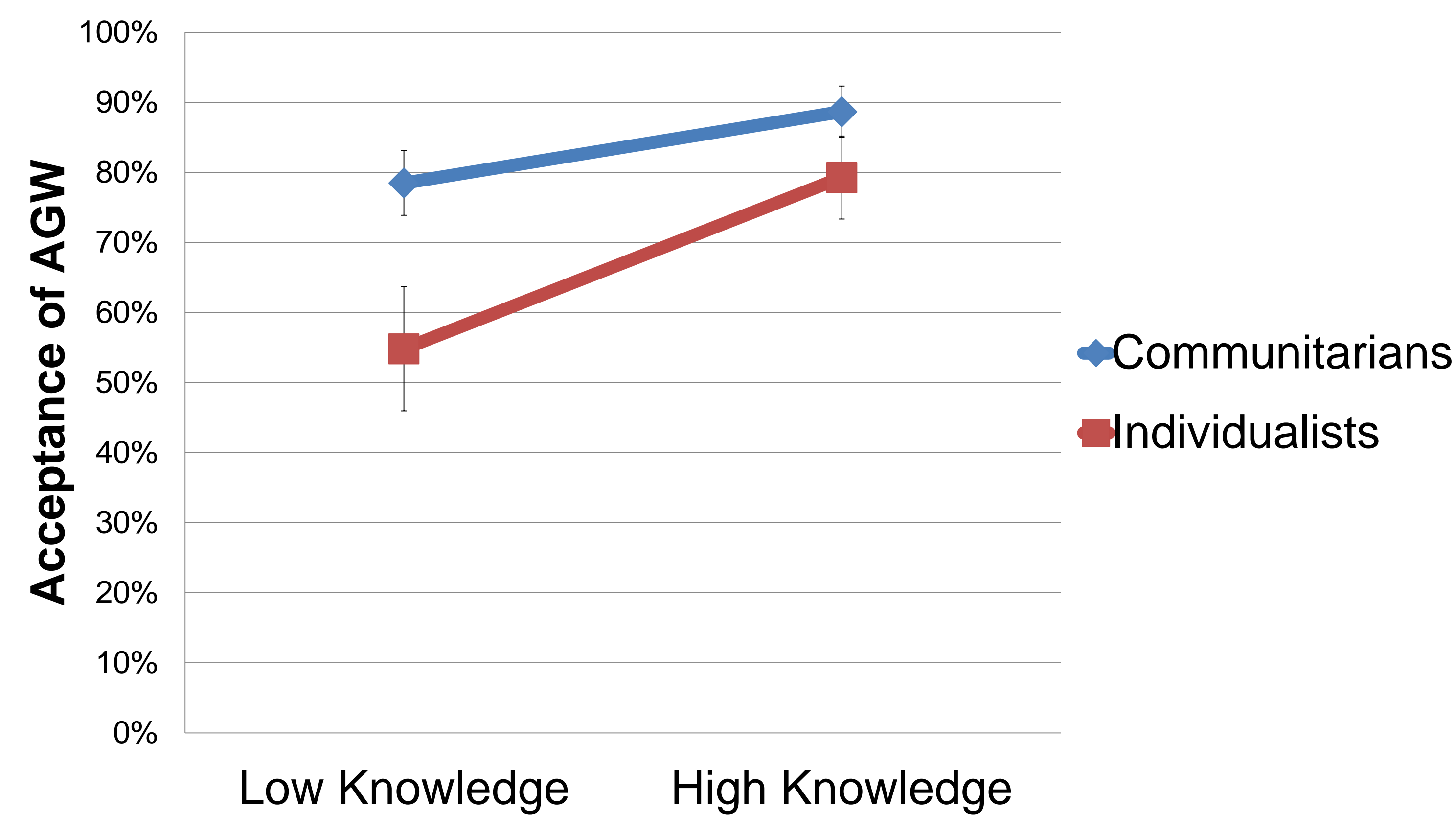
We randomly selected 24 middle school science teachers from coastal North Carolina for this study (24% response rate). The resulting sample included 378 students. We weighted the sample to ensure it reflected the population of all NC middle school students.

We administered the questionnaire in person between March and May 2013. The survey instrument drew from several scales measuring:

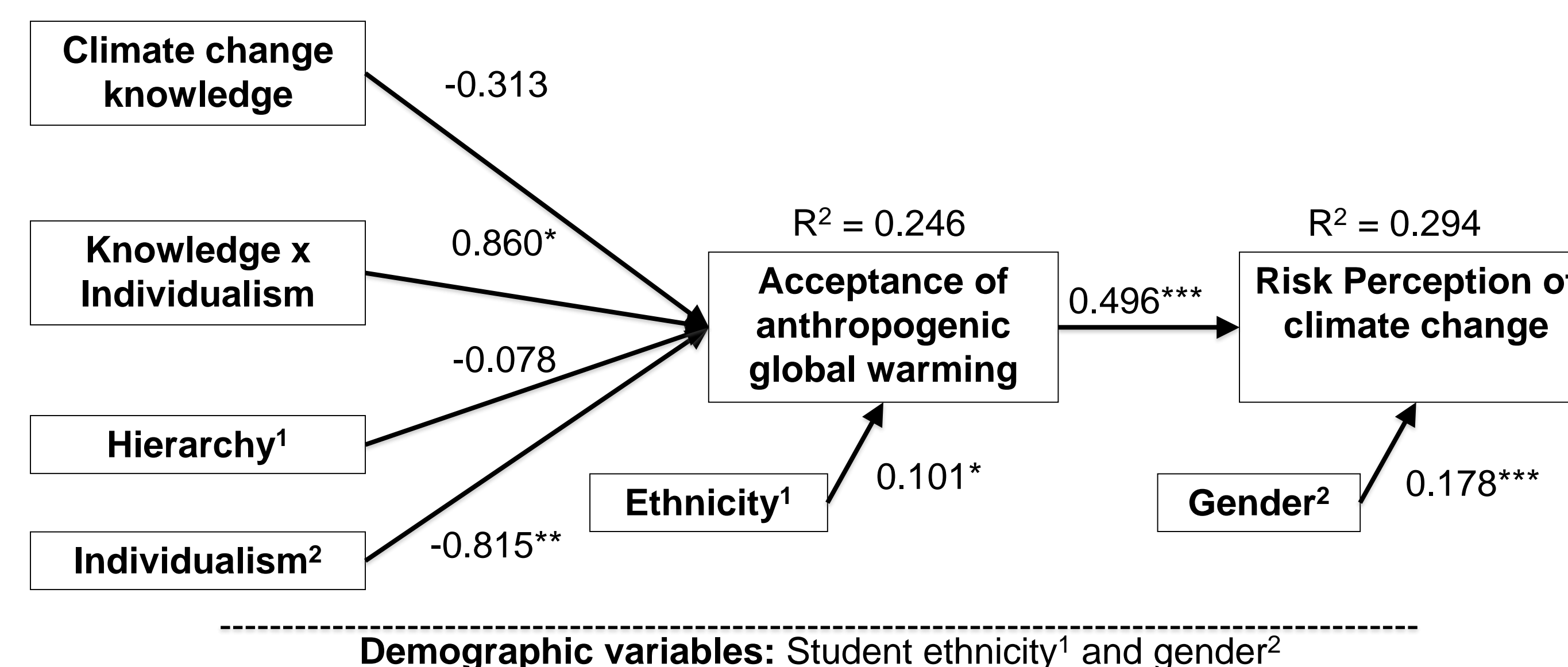
1. **Worldview:** individualism-communitarianism (Kahan, 2012) and hierarchy-egalitarianism (Pratto et al., 2004).
2. **Climate Change Knowledge** (Tobler et al., 2012)
3. **Climate Change Risk Perception** (Leiserowitz, 2012)

Pretesting revealed the scales were more reliable with our sample than with the samples with which they were developed

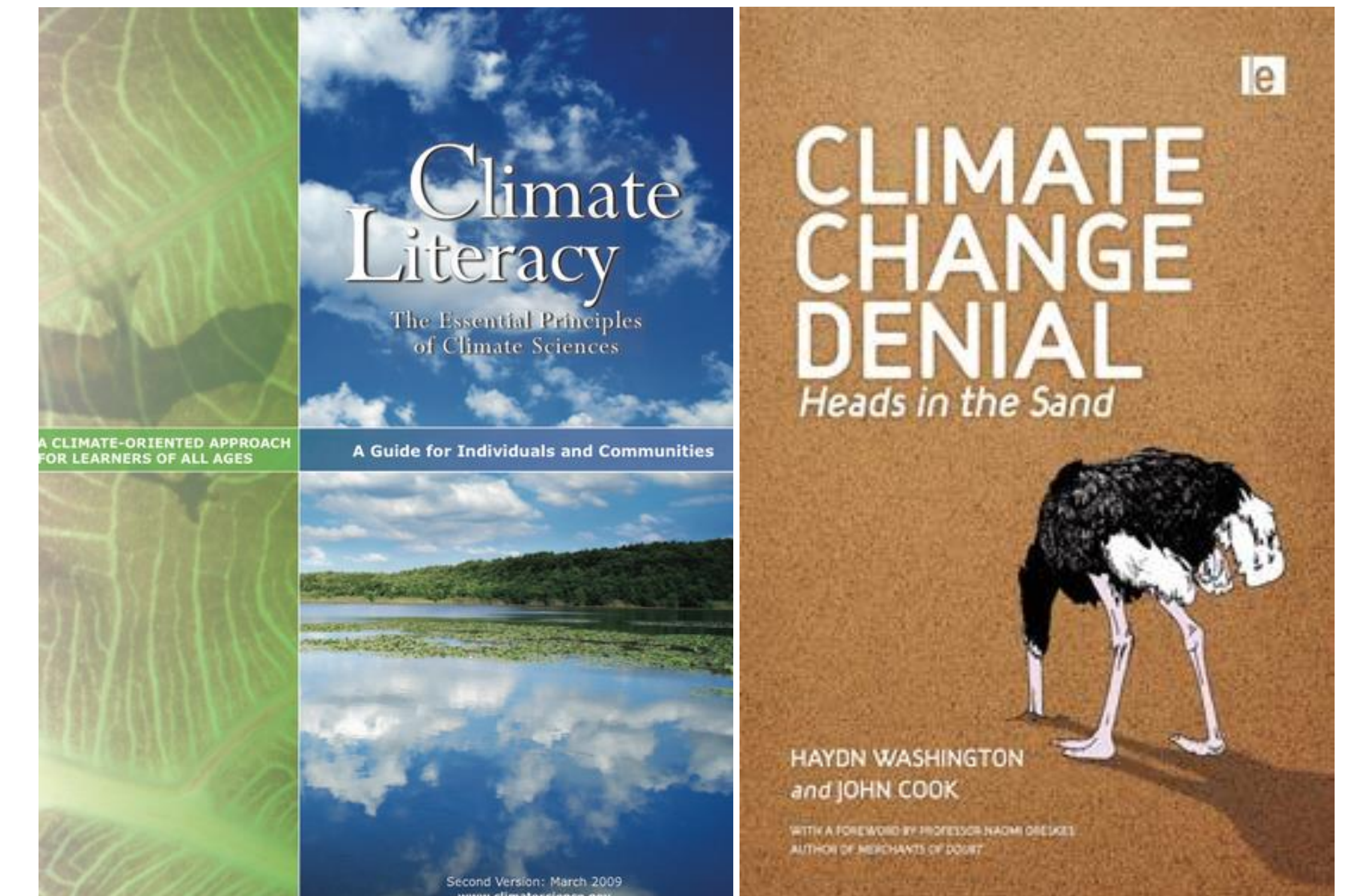
## Results: Knowledge overcomes polarization among adolescents



**Figure 1. Effect of increased climate change knowledge on acceptance of anthropogenic global warming among students with differing worldviews.** Predicted values and 95% confidence intervals (represented by error bars) of acceptance of AGW have been converted to percentages of maximum scale score (max = 13). Communitarians and individualists are represented by individualism scale scores in the 10<sup>th</sup> and 90<sup>th</sup> percentiles, respectively. Similarly, low knowledge is represented by a 10<sup>th</sup> percentile score and high knowledge as a 90<sup>th</sup> percentile score. Error bars represent a 95% confidence interval.



**Figure 2. Path diagram model for climate change risk perceptions among adolescents.** Path coefficients displayed are standardized. Paths from each demographic variable to each endogenous variable were included in the analysis, but only the statistically significant paths are shown. For ethnicity, 0 = white and 1 = non-white. For gender, 0 = male and 1 = female.



## Summary of Findings

1. Students answered 74.7% of the knowledge questions correctly.
2. On average, students were slightly individualistic and egalitarian.
3. Individualists were less likely to accept AGW than communitarians.
4. Increased climate change knowledge was positively associated with acceptance of AGW, and this relationship was stronger among individualists.
5. Non white students were more likely to accept AGW, and girls perceived climate change as a higher risk than boys.

## Conclusions

1. Climate literacy efforts may overcome worldview-associated skepticism among children, versus exacerbating it as among adults.
2. As worldviews and other contextual factors (e.g., gender and ethnicity) do influence perceptions of climate change, efforts should be made to reach diverse adolescent audiences.
3. Scales modified for use with K-12 audiences in this study may be helpful in future research with adolescents.

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