I Will Survive: Perceptions of Personal and Global Climate Change Risks

Danielle Chipman¹, Kelli Larson¹,², Dave White³, Amber Wutich⁴

¹School of Sustainability, Arizona State University, ²School of Geographical Sciences and Urban Planning, Arizona State University, ³School of Community Resources and Development, Arizona State University, ⁴School of Human Evolution and Social Change, Arizona State University

The Hyperopia Effect
Several studies have shown that people tend to view broad, global risks as more concerning than more local risks, a phenomenon known as the hyperopia effect. This study examines both global and personal climate change risk perceptions to determine whether the hyperopia effect exists across diverse geographic contexts. We further compare responses across countries, considering the relationships between perceptions and development status as well as greenhouse gas emissions and energy use.

Cross-National Data Collection
Data was collected through the Global Ethno-hydrology Study, a multi-year and multi-site study lead by Drs. Amber Wutich and Alex Brewis.

- This study utilizes data from the 2012 study, which focused on climate perceptions.
- 565 respondents from 8 countries participated in face-to-face interviews.
- Survey items included questions about global vs. personal climate change risks, such as water shortages, spread of disease, and standard of living.

Overall Trends: Low to High Risks

How do perceptions of climate change risks differ by development status and scale of impacts?

### Site Characteristics and Classification

<table>
<thead>
<tr>
<th>Country</th>
<th>Site</th>
<th>n</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Brisbane</td>
<td>68</td>
<td>Developed</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Wellington</td>
<td>70</td>
<td>Developed</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Lausanne</td>
<td>50</td>
<td>Developed</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>London</td>
<td>136</td>
<td>Developed</td>
</tr>
<tr>
<td>United States</td>
<td>Phoenix</td>
<td>63</td>
<td>Developed</td>
</tr>
<tr>
<td>China</td>
<td>Shanghai</td>
<td>49</td>
<td>Developing</td>
</tr>
<tr>
<td>Fiji</td>
<td>Viti Levu</td>
<td>76</td>
<td>Developing</td>
</tr>
<tr>
<td>Mexico</td>
<td>Teotihuacan</td>
<td>53</td>
<td>Developing</td>
</tr>
</tbody>
</table>

- Population statistics from the World Bank Development Indicators were used to classify the 8 countries as "developed" or "developing".
- Data was gathered from one specific site in each country.

Analysis of Country-Level Findings

#### Spearman Correlation Coefficient
- All bivariate correlations show a moderate (0.40–.59) to strong (0.60–.79) relationship among individual variables.
- Perceptions of personal risks are most strongly correlated.

#### ANOVA and Scheffe Post-Hoc Tests
- Perceptions varied across countries for every question (p <0.001).
- Scheffe homogeneous subsets largely grouped countries by development status, as also classified in the table (above).

### Perceptions based on Development Status

Risk Perceptions (1=low, 4=high)

#### Country-Level Attributes & Perceptions

- Residents in countries with higher CO₂ emissions and energy use tend to show less concern for climate change effects, thereby demonstrating a disparity between contributions to climate change and perceived impacts.
- Among the individual countries, Mexico stands out as having residents who perceive climate change impacts as particularly troublesome, despite low emissions.
- Residents in Switzerland and New Zealand exhibit the lowest concern about personal risks compared to others.

Concluding Thoughts

#### Support for hyperopia effect:
- Higher perceived impacts for global risks compared to personal risks regardless of development status.
- People in developing countries perceive greater personal risks compared to developed countries, suggesting that residents of developed countries may feel buffered from impacts due to relatively high socioeconomic status.

#### Future question to examine:
- Why do perceptions vary at individual and country (site) level, considering factors such as experiences with weather-related risks and government instability?

Acknowledgements
This material is based upon work supported by the National Science Foundation under Grant No. SES-0951156, DMUU: Decision Center for a Desert City II: Urban Climate Adaptation: Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation (NSF).