

# Polar facts and polarization

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Surveys since 2006 explore public perceptions of polar regions

### Findings:

1. High salience
2. Limited knowledge
3. Two kinds of facts

### Takeaway:

***Science communication matters, but in the US it is not the main problem***

## Public Knowledge About Polar Regions Increases While Concerns Remain Unchanged

LAWRENCE C. HAMILTON, MATTHEW J. CUTLER, AND ANDREW SCHAEFER

### Introduction

How much do people know, and how much do they care, about environmental changes sweeping the north and south polar regions? Is there a connection between knowing and caring? These were some of the issues researchers had in mind as they prepared new questions to be part of the General Social Survey in 2006 and 2010. The polar questions covered topics such as climate change, melting ice and rising sea levels, and species extinction.<sup>1</sup> They formed a bookend to the International Polar Year in 2007-2008, which focused on scientific research along with outreach and education efforts to raise awareness of polar science.<sup>2</sup> The surveys were designed so that some individuals would be interviewed both years, and others only in 2006 or 2010. Although the Carsey Institute did not participate in the survey design or interviews, we are conducting the first comparative analysis of the polar questions.

### The General Social Survey

The National Opinion Research Center (NORC) at the University of Chicago has conducted the General Social Survey (GSS) annually from 1972 to 1993 and biennially from 1994 to 2010.<sup>3</sup> From 1972 to 2004, the GSS drew nationally representative samples of the English-speaking population aged 18 years or older, living in noninstitutional settings across the

### Key Findings

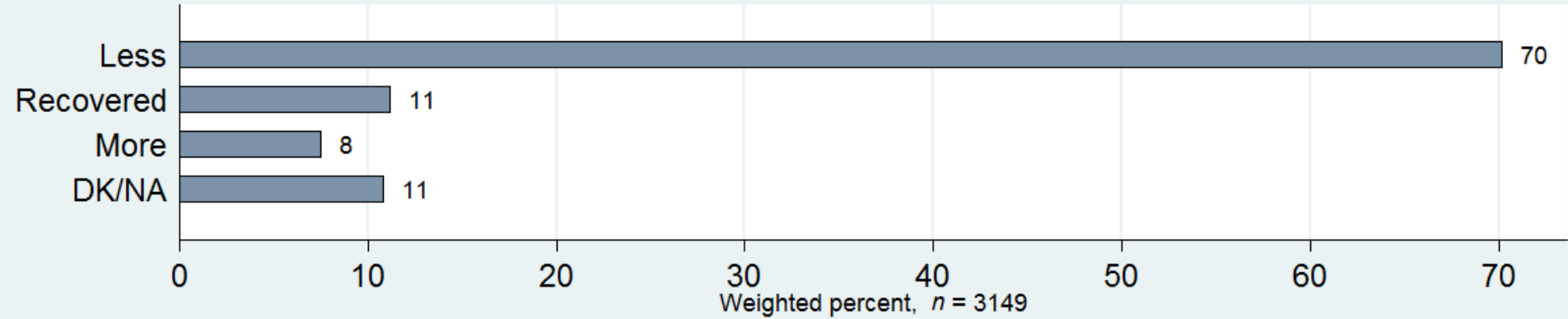
- The public's knowledge about the north and south polar regions, assessed by the General Social Survey, significantly improved between 2006 and 2010—before and after the International Polar Year.
- Although men tend to score higher on polar knowledge, this gender gap narrowed because much of the 2006–2010 improvement occurred among women.
- Unlike knowledge, there was no overall change in concern about polar aspects of climate change or support for reserving the Antarctic for science.
- Respondents who know more about science in general, and polar facts specifically, tend to be more concerned about polar changes such as endangered species, melting ice, and rising sea levels.
- More knowledgeable respondents also tend to favor reserving the Antarctic for science, rather than opening it for commercial development.
- Political outlook affects both levels of concern about polar environmental change and views on reserving the Antarctic.

70% know or guess Arctic sea ice declined

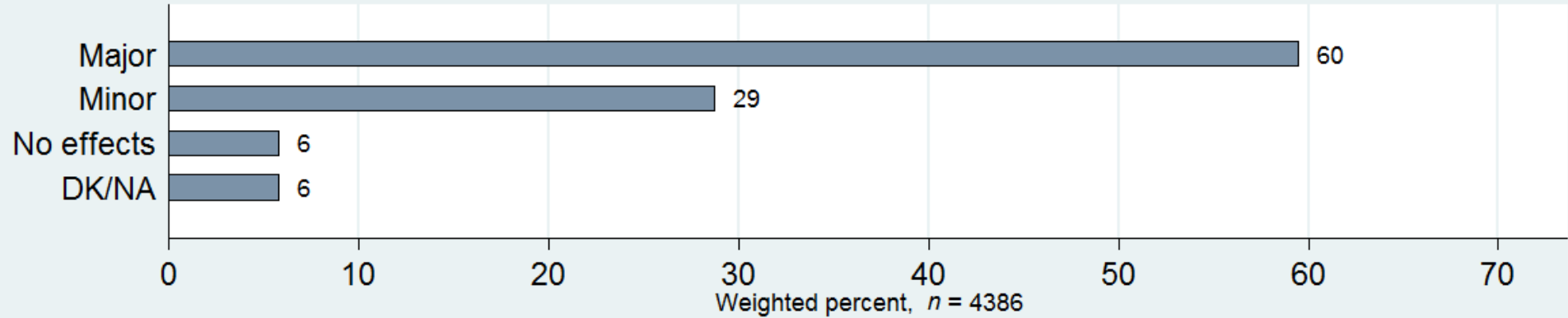
60% think Arctic warming will affect their weather

30% know Gr/Ant ice sheets most affect sea level

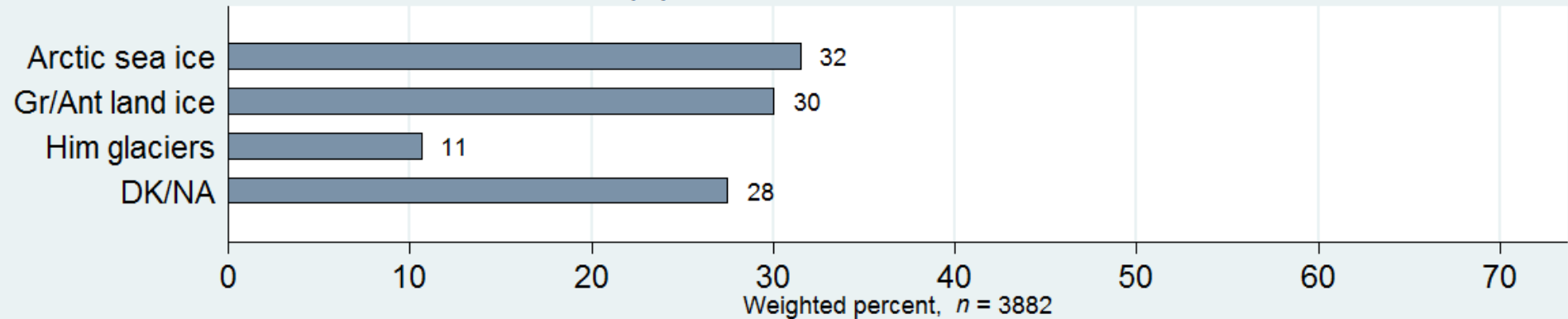
(A) Arctic summer sea ice area 30 years?



(B) If Arctic warms, effects on weather?

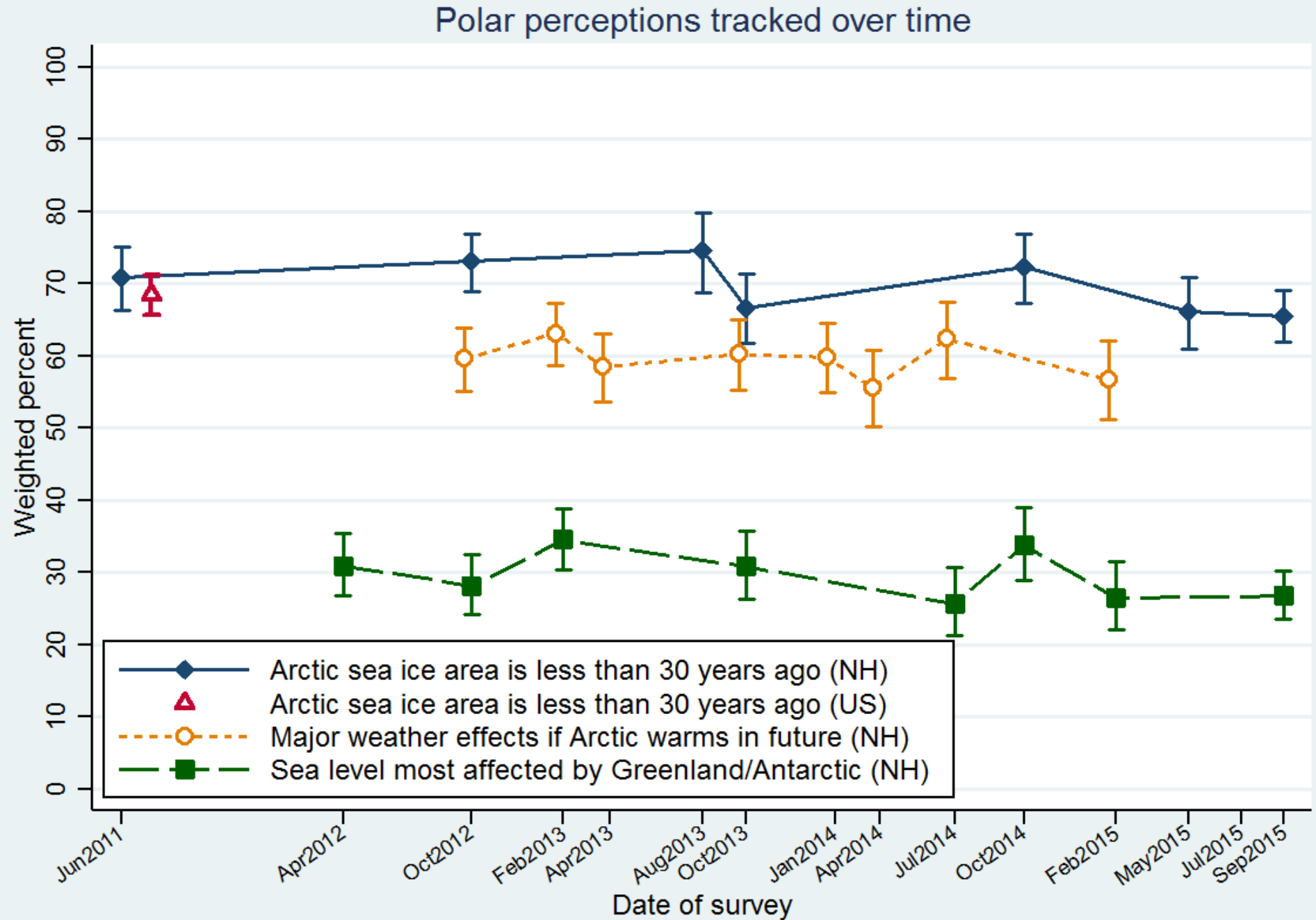


(C) Which would most affect sea level?



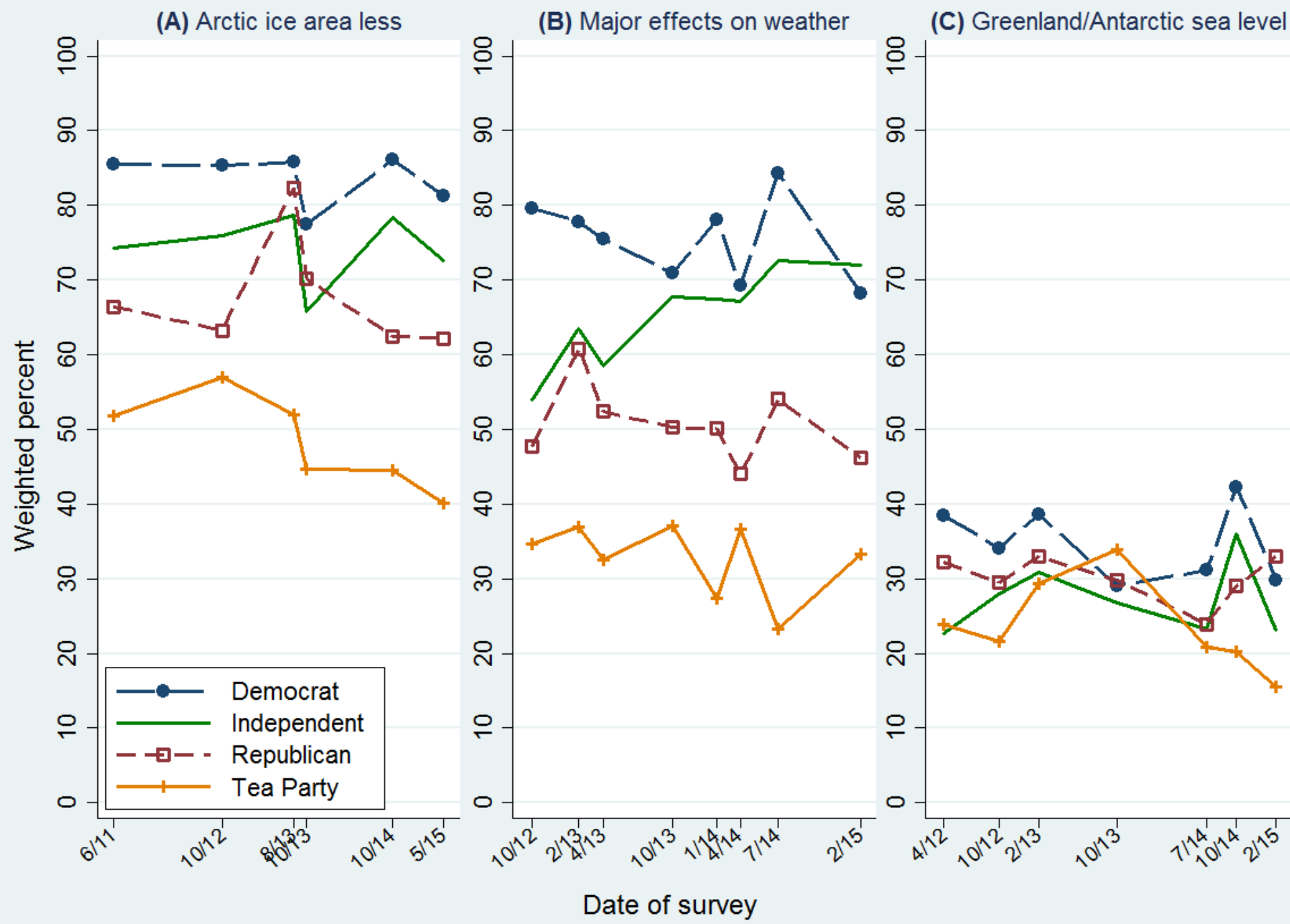
Responses stable over 2011–2015

New Hampshire results close to US

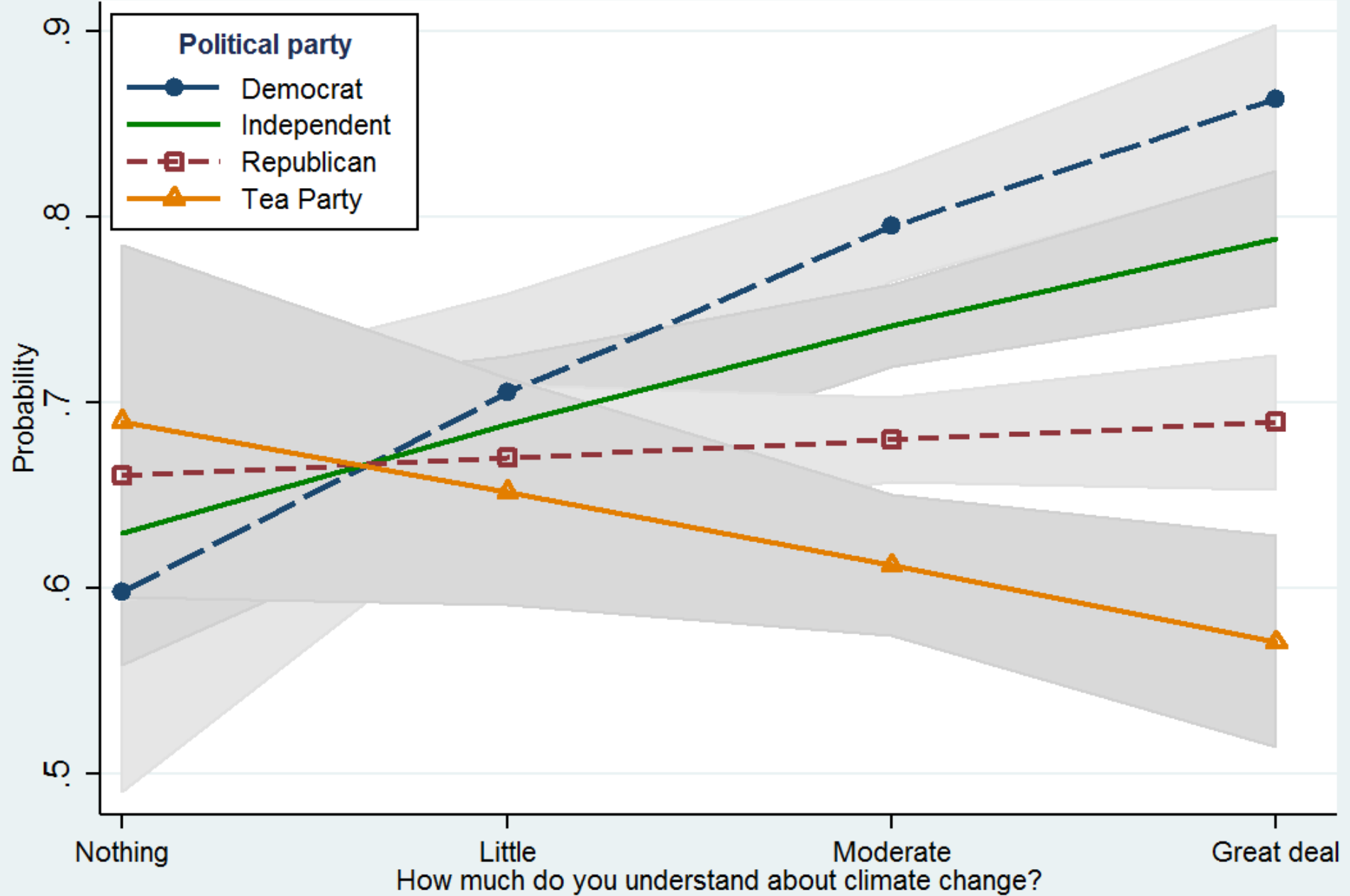


Partisan divisions are dramatic on change-related questions

Non-change questions find lack of basic knowledge



# Arctic sea ice area is less than 30 years ago



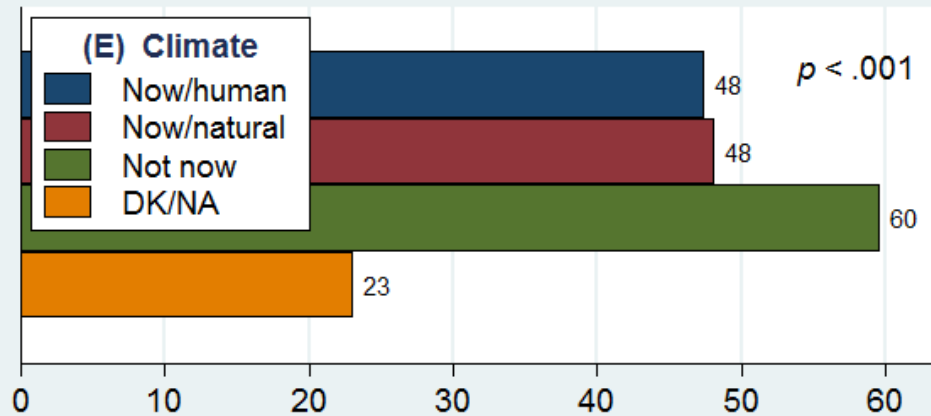
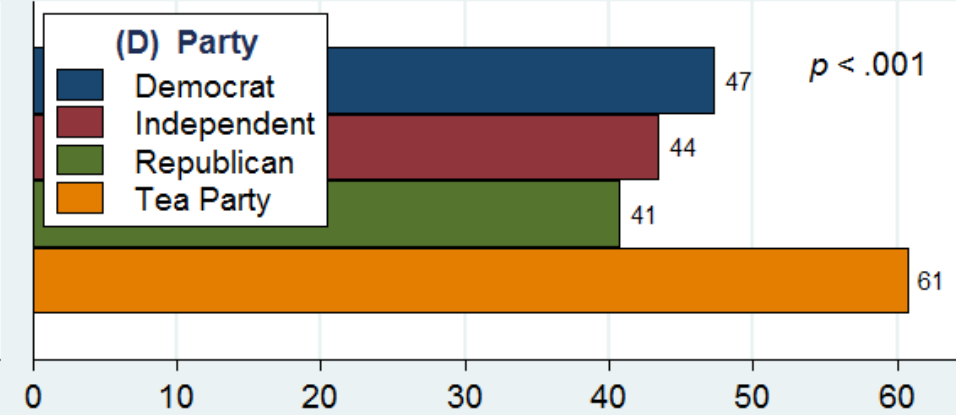
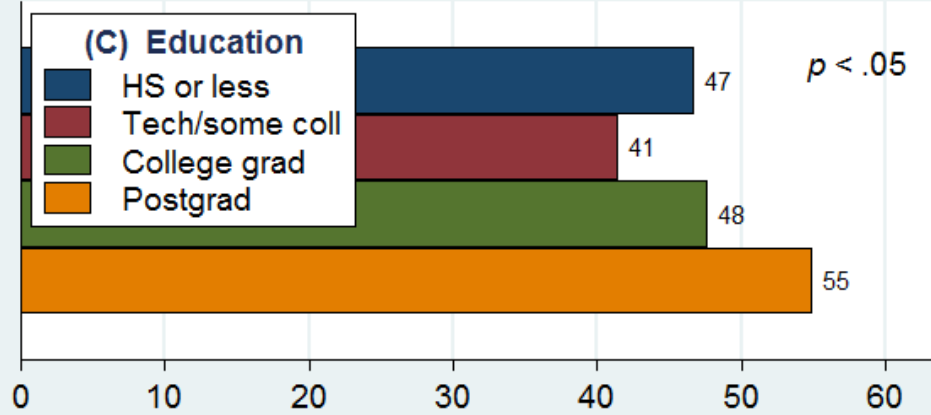
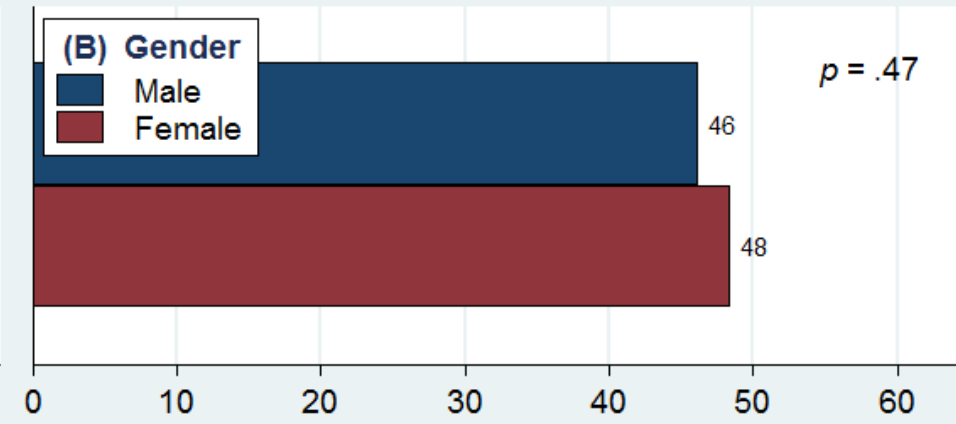
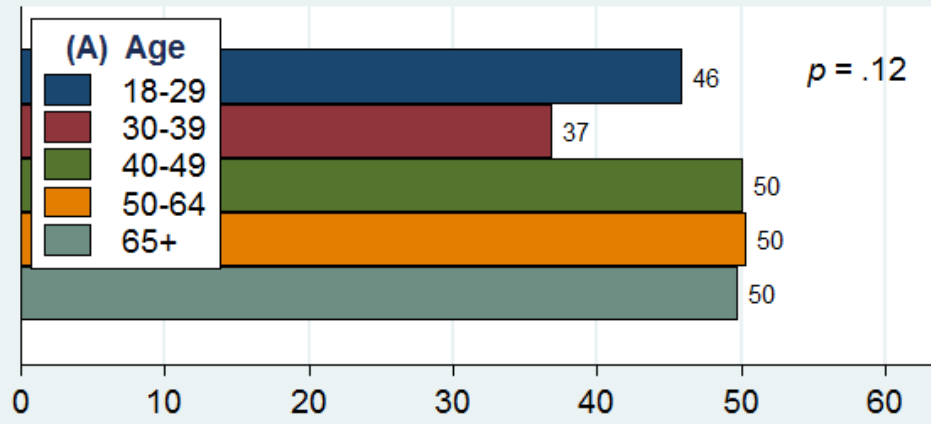
Political divisions on polar facts

are greatest among those who claim "high understanding"

Overconfidence:  
low knowledge +  
high  
“understanding”

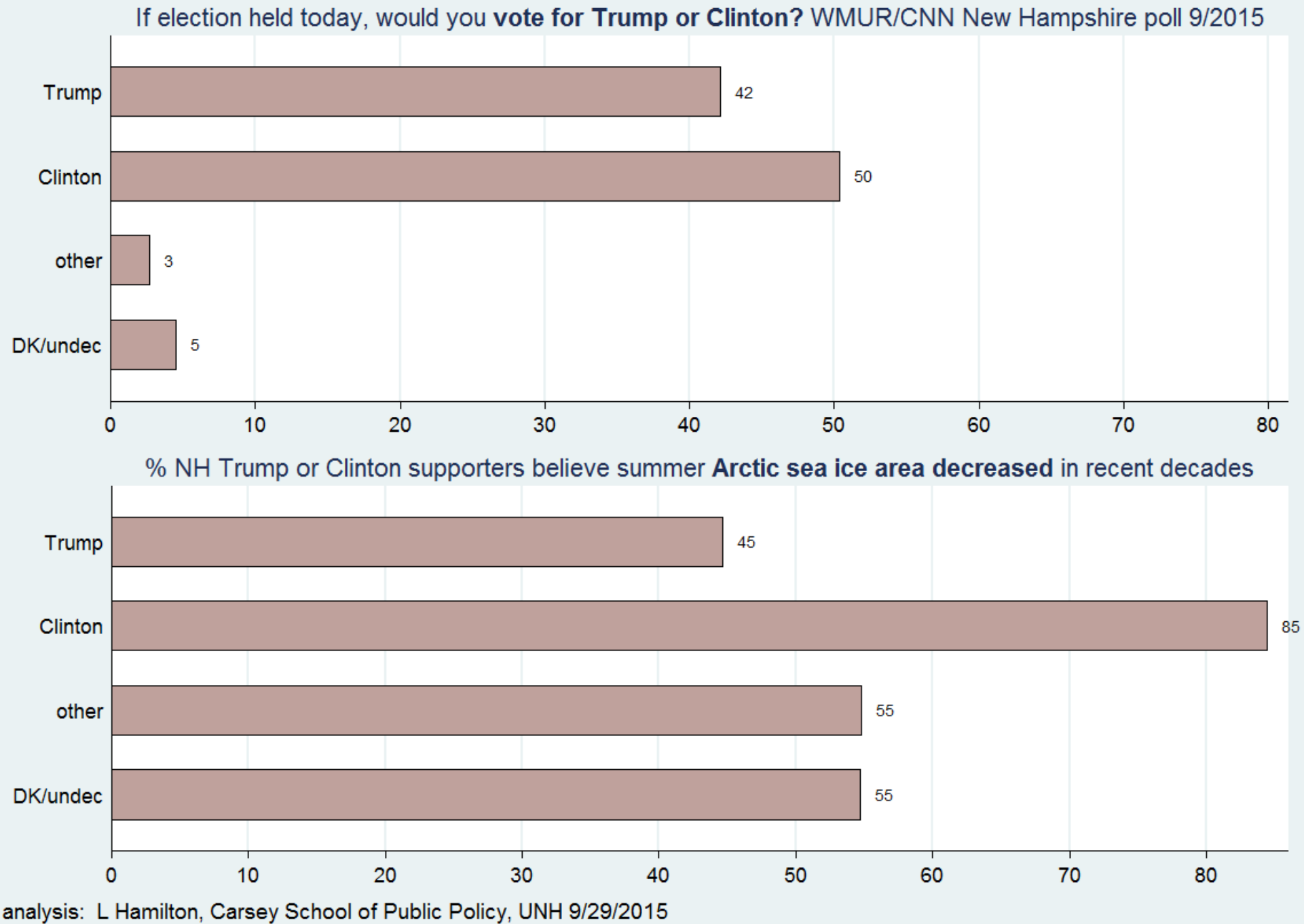
Greater among  
Tea Party  
supporters &  
climate-change  
deniers.

Overconfidence: Percent with high 'understanding' but low knowledge



September  
2015 poll

Arctic sea ice  
beliefs of Trump  
and Clinton  
supporters





# References

- Hamilton, L.C. 2015. "Polar facts in the age of polarization." *Polar Geography* 38(2):89–106.
- Hamilton, L. 2015. "What people know." *Environmental Studies and Sciences* 5:54–57.
- Hamilton, L.C. and M. Lemcke-Stampone. 2014. "Arctic warming and your weather: Public belief in the connection." *International Journal of Climatology* 34:1723–1728.
- Hamilton, L.C. 2012. "Did the Arctic ice recover? Demographics of true and false climate facts." *Weather, Climate, and Society* 4(4):236–249.
- Hamilton, L.C., M.J. Cutler and A. Schaefer. 2012. "Public knowledge and concern about polar-region warming." *Polar Geography* 35(2):155–168.
- Hamilton, L.C. 2008. "Who cares about polar regions? Results from a survey of U.S. public opinion." *Arctic, Antarctic, and Alpine Research* 40(4):671–678.

