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# Framing, partisan predispositions, and public opinion on climate change<sup>☆</sup>



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#### ABSTRACT

We investigate how different framing of climate change impacts affects public opinion on the issue. Using an experimental design, we examine the influence of frames presenting *local* versus *global* climate impacts and frames discussing projected *losses* versus those also discussing possible *benefits* of climate change, on individual perceptions of the severity of climate change, behavioral intentions to address climate change, and attitudes toward climate change policies. The results indicate that our impact frames influence public opinion, although the effects sometimes differ based on individuals' partisan predispositions. Specifically, our study shows that local frames increase perceptions of the severity of the problem and support for local (sub-national) policy action for all subjects, as well as behavioral intentions for subjects who are Independents or Republicans. Presenting subjects with information on the potential benefits and losses of climate change weakens perceptions of problem severity for all subjects at the local and national level, decreases support for local policy action among Democrats, and has no effect on behavioral intentions. Overall, these results are consistent with policy research suggesting that perceptions of local vulnerability are an important factor in the adoption of sub-national climate change policies. The findings also imply that the effectiveness of particular climate change impact frames will vary from one state to another depending on a state's partisan leanings.

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#### 1. Introduction

Contrary to most expectations, states and sub-national governments have taken the lead on climate change mitigation policy in many parts of the world, including the United States (Betsill, 2001; Labatt and White, 2007; Rabe, 2004, 2008; Stavins, 2008). These initiatives are surprising given that state emissions reductions offer little or no direct benefit for state residents, unlike other state or local environmental rules that can directly improve air or water quality for those residents. In trying to explain this pattern of sub-national policy development, researchers have identified public perceptions of local vulnerability to climate

change as an important explanation (Rabe, 2004; Selin and VanDeveer, 2009). The details of the link between individual perceptions of vulnerability and attitudes toward climate policy, however, remain unclear. For example, some U.S. states facing serious threats from climate change have taken virtually no action on the issue, even as others have moved aggressively to reduce their emissions (Rabe, 2004). Explaining variations in public support for sub-national climate change policies, therefore, remains a challenge.

In this paper, we investigate how framing projected climate impacts might help explain variations in public support for climate policies, especially sub-national policies. We follow Gamson and Modigliani (1987, p. 143) in defining a "frame" as "a central organizing idea or story line that provides meaning to an unfolding strip of events, weaving a connection among them. The frame suggests what the controversy is about, the essence of the issue." In political discourse, for instance, elites select specific language to create frames that evoke particular values, beliefs, or ideas (Lakoff, 2004). Frames shape public attitudes on many policy issues (Chong and Druckman, 2007), including climate change and alternative energy policies (Wiener and Koontz, 2010; Fletcher, 2009; Jones and Song, 2014), and influence individual behavioral intentions (Benford and Snow, 2000; Clawson and Waltenburg, 2009).

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Frames, however, do not necessarily have the same effect on all people. For example, individuals' partisan predispositions can influence how frames are processed, especially on issues that are highly partisan (Slothuus and de Vreese, 2010).

Prominent framing strategies for climate change include emphasizing local impacts of climate change (e.g., Scannell and Gifford, 2013; Spence et al., 2011; Pidgeon, 2012), and describing potential benefits of avoided climate change impacts (e.g., Spence and Pidgeon, 2010). Results on the effect of these "local" or "benefit" frames on public opinion remain preliminary, however, and none of this work has explored frames used by so-called climate skeptics citing the potential benefits of climate change itself, rather than the benefits of avoided climate change. Moreover, little public opinion research on the influence of local frames has been conducted in the United States, especially in terms of conceptualizing "local" impacts as occurring at the state-level. This is an important gap given the recent expansion of state-level climate policies in the U.S. Finally, little of this research has considered the possible interaction of various climate frames with partisan identity, despite widespread evidence that climate change has become an intensely partisan issue in the United States (McCright and Dunlap, 2000, 2011; Pidgeon, 2012). In sum, our study makes important contributions by examining the influence of benefit frames on public opinion toward climate change, expanding the analysis of local frames to the U.S. context, and considering the role of party predispositions.

Thus, this paper asks two primary research questions related to the influence of framing on opinions toward climate policy:

- (1) What effect does *local* versus *global* framing of climate impacts have on individuals across partisan identities, in terms of their perceptions concerning the severity of climate change as a problem, behavioral intentions to address climate change, and attitudes toward policy action at different levels of government?
- (2) What effect does loss only versus loss and benefits framing of climate impacts have on individuals across partisan identities, in terms of their perceptions concerning the severity of climate change as a problem, behavioral intentions to address climate change, and attitudes toward policy action at different levels of government?

We explain our hypotheses for these general questions in the context of prior work on these issues in the sections that follow.

#### 1.1. Local versus global framing

Climate change is typically referred to as a global issue, giving most people the perception that it is a distant challenge both geographically and temporally, thereby generating relatively low perceptions of problem severity (Pidgeon, 2012; Nisbet, 2009; Lorenzoni and Pidgeon, 2006). The resulting "psychological distance" of climate change impacts is therefore thought also to reduce individuals' willingness to act personally or to support policy action to address the issue (Spence et al., 2012). In response, some have argued that framing climate change impacts as local rather than global should make the issue more salient for the public, increasing behavioral intentions to address the issue as well as support for policy action, especially at a local level (e.g., Leiserowitz, 2005; Lorenzoni and Pidgeon, 2006). Scannell and Gifford (2013) provide evidence for this proposition, demonstrating that individuals exposed to a message about local climate change impacts become more engaged with the issue. This evidence that local impact frames are influential is consistent with policy research citing concern about local climate impacts as important motivations for adopting many sub-national climate policies (Rabe, 2004, 2008; Selin and VanDeveer, 2009).

Furthermore, multiple studies support a positive relationship between direct exposure to impacts often associated with climate change, such as flooding or extreme weather, and heightened perceptions of the threat of climate change, stronger behavioral intentions to prevent climate change, and stronger support for climate change policies (as reviewed in Spence et al., 2012; Pidgeon, 2012). For example, data from a national survey in the United Kingdom suggests that individuals having personal experience with flooding express greater "concern" about climate change, and willingness to take personal action to reduce its effects (Spence et al., 2011). Other work argues that citizens and public officials are less concerned about climate change risks than climate scientists, whose research gives them more immediate exposure to climate change consequences (Weber, 2006). More generally, surveys have suggested that personal experience with expected climate change impacts such as drought, floods, or hurricanes increases support for action to address climate change (Zahran et al., 2006; Owen et al., 2012; Pidgeon, 2012, p. S88). None of this work has evaluated the idea of local impacts framing in terms of estimated effects on a U.S. state, however, which as noted above is an increasingly important political unit for climate policy.

Not all research is consistent with the expectation that local frames will increase concern about climate change or support for policy action. One experiment found that projections of five or ten meter sea level rise in a distant city generated stronger perceptions of the severity of climate change problems than a similar projection for a local city (Spence and Pidgeon, 2010). Other work has failed to find a statistically significant relationship between personal experiences with extreme weather among U.S. citizens and perceptions of a greater threat from climate change, despite the fact that more intense heat waves and stronger storms are commonly associated outcomes with climate change across much of the U.S. (Brulle et al., 2012). In addition, some suggest that a socalled "governance trap," in which individuals fail to take personal action based on a belief that governments should address climate change first, may seriously impede behavioral intentions to address the issue even when the risks are more salient (Pidgeon, 2012).

Based on policy research citing perceptions of local vulnerability as a cause of sub-national climate mitigation policies, however, and well-established principles from prospect theory that individuals tend to be more averse to risks they have previously experienced (Tversky and Kahneman, 1981), we hypothesize that local frames focused on state-level impacts will increase perceptions of the severity of climate change and support for both individual and political action:

**H1a.** Subjects viewing a presentation on potential local climate change impacts will **express that climate change is a more serious problem** than those viewing a presentation on potential global impacts.

**H2a.** Subjects viewing a presentation on potential local climate change impacts will **express stronger behavioral intentions to address climate change** than those viewing a presentation on potential global impacts.

**H3a.** Subjects viewing a presentation on potential local climate change impacts will **express greater support for policy action to address climate change** than those viewing a presentation on potential global impacts.

#### 1.2. Loss versus benefit framing

Scientists and the media typically express climate change impacts in terms of potential losses, such as damage to property,

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