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A social trap for the climate? Collective action, trust and climate change risk perception in 35 countries

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ABSTRACT

Climate change presents a global problem that requires a collective, coordinated response to reduce the rate of greenhouse gases currently emitted. But, even in the face of these serious growing dangers, behavioral and policy responses have been rather muted. A growing literature has documented cross-national differences in climate change attitudes and related scholarship has analyzed general environmental concern across nations. Yet there are several holes in our knowledge. In this manuscript, we consider the role of trust, risk perceptions and investigate the possibility of a "social trap" (Rothstein, 2005) whereby a lack of trust blunts the effect of risk perceptions on public willingness to engage in behaviors or support policies to address climate change. Using between- and within- random effects models coupled with survey data from 35 countries, we find that, at the individual level, trust and risk perceptions are generally positively associated with ameliorative behavior and policy support. Results for a contextual effect of trust and risk perceptions are more mixed, and we find only slim support for an interactive relationship between trust and risk perceptions.

1. Introduction

Climate change will require a comprehensive, global response to reduce the rate at which greenhouse gases are currently released into the atmosphere and adapt to a disrupted climate system. Yet, despite the serious dangers posed by climate change, the behavioral and policy, response has been rather muted. Why haven't the publics of the world mobilized en masse to stop or adapt to climate change? One possible explanation for the limited global response to climate change relates to public perceptions—perhaps climate change is not seen as dangerous enough in a sufficient amount of countries to create a truly global public response. Further, in some countries social and institutional conditions—such as a lack of trust and problems of corruption—may also serve as a barrier to climate change action (Adger and Kelly, 1999; Eakin et al., 2014; O'Riordan and Jordan, 1999).

A growing literature has documented cross-national differences in climate change attitudes (Kim and Wolinsky-Nahmias, 2014; Lo and Chow, 2015; Sandvik, 2008) and related scholarship has analyzed general environmental concern across nations (Brechin, 1999; Dunlap and York et al., 2008; Franzen and Vogl, 2013a). Yet our knowledge of the social dimensions of climate change is far from complete. Extensive literature engages with the role of risk perception and varied forms of trust for environmental behaviors, attitudes and policy support (Lubell et al., 2006; Mayer et al., 2017; O'Connor et al., 1999). But few studies consider both risk and trust to understand patterns of collective action towards climate change cross-nationally. Further, the potentially interrelated nature of trust and risk perceptions is not well understood.

In this manuscript, we initially consider the influence of two forms of trust—social and institutional —as well as role of risk perception in encouraging or inhibiting ameliorative action or policy support to address climate change. Further, we introduce Rothstein's (2005) novel formulation of a "social trap"—a unique type of collective action problem that implies a potentially interactive relationship between trust and risk perceptions, whereby a lack of trust erodes the effect of risk perceptions on climate policy support or climate behaviors.

Behavioral or policy response to climate change can be understood as a type of complex collective action problem in which public concern about climate change is unlikely to elicit a response if trust is low. As such, this paper can be seen as a direct response to Fairbrother's (2017, 2016) argument that social scientists should give greater focus to problems of trust when attempting to understand cross-national differences in willingness to pay for environmental protection, support for climate policy, and collective behavior.

In the following section, we review the literature on global environmental concern and cross-national studies of climate change attitudes. Next, we integrate a diverse range of literature regarding risk and

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trust and to explain patterns influencing the likelihood to engage in collective action to address complex environmental problems. Lastly, we explain how Rothstein's social trap theory can be utilized to frame the interactive relationship between risk and trust for collective action (Rothstein, 2005).

2. Theoretical background

2.1. Global environmental concern and climate change attitudes

Cross-national comparative research on environmental concern abounds across multiple disciplines. Here, environmental concern is typically conceptualized as a multi-faceted construct (Dunlap and Jones et al., 2002; Fransson and Gärling et al., 1999; Xiao and Dunlap, 2007) and, in general, scholars prefer to use additive scales meant to capture underlying constructs such as "willingness to pay" or "concern" as opposed to indicators for highly specific environmental issues (e.g. climate change, air pollution). In this literature, much of the debate has hinged on the role of economic development in fomenting environmental concern. Several studies find that wealthy nations exhibit higher environmental concern than poor nations (Diekmann and Franzen, 1999; Franzen, 2003; Franzen and Vogl, 2013a, 2013b; Freymeyer and Johnson, 2010; Gelissen, 2007; Kemmelmeier et al., 2002) while others have found the opposite (Brechin and Kempton 1994, Brechin 1999, Dunlap and York et al., 2008, Givens and Jorgenson 2011, Knight and Messer 2012, Kvaløy et al. 2012, Marquart-Pyatt, 2012, Mostafa 2012, Fairbrother 2013, Givens and Jorgenson 2013, Mostafa 2013, Jorgenson and Givens 2014). Notably, Summers and Van Heuvelen (2017) find significant variation in the association between economic development and environmental concern across nations.

Another body of literature chronicles cross-national differences in climate change attitudes, again often centering on contextual-level predictors like economic development. Many studies demonstrate that economic development is negatively related to concern for climate change and willingness to sacrifice to address climate change (Kim and Wolinsky-Nahmias, 2014; Kvaløy et al., 2012; Mostafa, 2016; Sandvik, 2008) and climate change risk perceptions (Lee et al., 2015; Tjernström and Tietenberg, 2008). On the other hand, Lo and Chow (2015) differentiate between concern and risk perception and find that economic development increases climate change concern but reduces risk perceptions.

A handful of studies have shown that post-communist countries are different in terms of environmental attitudes (Chaisty and Whitefield, 2015; Hadler and Wohlkönig, 2012; Haller and Hadler, 2008; Marquart-Pyatt, 2012), noting the varied effects of contextual determinates unique to these "transition" states. Lastly, Mayer and Smith (2017) note the importance of identifying non-economic factors in the patterning of cross-national climate change attitudes. Taken together these studies imply that economic determinants are inconsistent predictors of cross-national divergence in environmental attitudes, indicating a need to shift focus to alternative explanations. In the next section, we explain how trust in institutions and society, as well as perceived risk, may be uniquely important variables in identify patterns of support for collective actions aimed at ameliorating climate change-.

2.2. Trust and collective actions

Trust is necessary for our modernized world in which actors are interdependent across large stretches of time and space and faced with a vast number of choices for action (Giddens, 1990; Luhmann, 1979; Renn and Levine, 1991; Sztompka, 1999; Uslander, 2002). Further, trust is a pre-requisite for effective governance (De Cremer, 1999; Kluegel and Mason, 2004; Sztompka, 1999), and is a crucial factor in the development of institutions and implementation of public policy implementation (Gilson, 2003; Lange and Gouldson, 2010; Ruscio, 1996; Sullivan and Transue, 1999). Trust is especially relevant when accurate information about the severity of a potential risks is unknown or perhaps unknowable—environmental problems such as climate change are a prime example of this type of risk (Paton, 2008; Siegrist and Cvetkovich, 2000).

Succinctly defining trust has proven somewhat elusive. Rosseau et al. (1998) argues that trust is a "psychological state" regarding the "willingness to accept vulnerability" and assume that others will act with good intentions. Gambetta (1988) suggests that trust is a 'subjective probability' that a person assigns to the actions of another before such action takes place. Fukuyama (1995) similarly defines trust as a type of expectation that other people will act in a positive manner based upon shared norms. Although there are many and varied definitions of trust, they tend to coalesce around that notion that trust involves assuming that other people, or institutions, are acting in a mutually beneficial manner informed by broadly shared social norms.

Though the terms vary, our review of the literature indicates that trust has at least three distinct dimensions (Khodyakov, 2007). The first, what we call social trust, refers to trust in others within a society, linking individuals with people that are different than ourselves, and is sometimes referred to simply as generalized trust (Delhey and Newton, 2005; Herreros and Criado, 2008; Rothstein and Uslaner, 2005). As such, social trust is reflective of collective social bonds, shared across broad groups within a society. Second, social trust is often placed in contrast with 'particular trust', which identifies trust between members of an individual's in-group. Lastly, trust in significant institutions, such as the government, the legal system, labor unions, business or organized religion forms a third dimension (Hudson, 2006; Peters et al., 2007; Raiser et al., 2008; Rus and Iglič, 2005). Further, although some researchers approach trust as a largely stand-alone construct, other scholars situate trust within the broader concept of social capital. Ferlander (2007) provides a useful organizing framework for social capital wherein social capital has two key dimensions—structural and cognitive. Social capital has also been identified as key community-level variable in climate change adaptation (Adger, 2003; Pelling and High, 2005; Wolf et al., 2010).

Environmental problems, such as climate change, represent a classic "social dilemma" wherein people have little individual incentive to act but, for societies or social groups as a whole, it is "rational", on in their collective interest, to act (Olson, 1965; Ostrom, 2010). Lubbell et al. (2006) suggest that environmental behavior can be understood as type of collective action in that individuals who engage in these behaviors likely overestimate their individual contribution to mitigating an environmental problem. Further, individuals worried about climate change may not act to reduce their personal contribution to climate change because of free-rider fears (Bohr, 2014). Therefore, personal behavioral adaptation to climate change involves trusting in others to do the same. Trust leads people to assume that others are trust-worthy (Uslander, 2002) and is a strong predictor of behavior in collective action dilemmas (DeCremer and Stouten, 2003; Parks and Hulbert, 1995). Trust, whether in the individuals or in institutions of a society, is likely a key variable in collective action problems as it is predictive of both individual propensity to act and policy support.

Limited empirical research has directly examined the relationship between trust and support for environmental policy or environmental behavior. Trust in government or government agencies is positively associated with environmental policy support (Fairbrother, 2016; Konisky et al., 2008; Zannakis et al., 2015) willingness to sacrifice for the environment or support environmentally friendly policies (Harring, 2013; Jones et al., 2015; Koerth et al., 2013) and climate-friendly action (Vainio and Paloniemi, 2013). Social trust is positively associated with pro-environmental behaviors and the belief that environmental problems impose social costs (Jones, 2010). Corruption and lack of trust also cause people to believe that environmental policy is less effective (Harring, 2014) and high quality governance institutions encourage collective environmental action (Duit, 2011). Perhaps the most thorough investigations of trust and environmental policy implementation