



Can power affect environmental risk attitude toward nuclear energy?



Liuna Geng^{a,*}, Ting Liu^a, Kexin Zhou^b, Genmao Yang^a

^a Department of Psychology, Nanjing University, Nanjing, China

^b Nanjing Institute of Environmental Sciences, Ministry of Environmental Protection, Nanjing, China

ARTICLE INFO

Keywords:

Construal level theory
Environmental risk attitude
Power
Psychological distance theory

ABSTRACT

Nuclear safety has attracted attention from the government and general public. Research has focused on the psychological mechanisms underlying individuals' environmental risk attitude toward nuclear energy. The aim of this study was to examine whether power affects environmental risk attitudes toward nuclear energy from the perspective of construal level theory and psychological distance theory, since these psychological mechanisms could underlie the influence of power on attitudes to risk. Three studies explored the environmental risk attitudes of participants with different levels of power toward environmental governance of nuclear energy. Results revealed that power affects environmental risk attitudes and perception, with low-power being associated with more risk-avoiding and negative attitude toward the development of nuclear energy relative to high-power. The results of the present study are discussed in reference to policy implications for nuclear energy, such as policy agenda, public participation, and risk communication.

1. Introduction

Nuclear energy, a relatively new type of energy, is considered to have a role in alleviating the energy crisis (European Environment Agency, 2009; Diesendorf, 2016; Jung and Roh, 2016; Nishikawa et al., 2016; Sang et al., 2016; Stumpf, 1995). However, nuclear power is perceived as having dreadful and unknown risks (Siegrist et al., 2014; Slovic, 1987). For example, the Fukushima nuclear leak in Japan in 2011 illustrated that nuclear energy not only has potential risks but also may have consequences that are difficult to control. Various studies have shown that after the Fukushima accident, individuals perceived nuclear power plants as riskier and exhibited more negative attitudes toward the development of nuclear power (Huang et al., 2013; Siegrist and Visschers, 2013; Siegrist et al., 2014; Tsujikawa et al., 2016; Visschers and Siegrist, 2013). Even some proponents of nuclear power turned into opponents when they perceived an increase in risk (Siegrist et al., 2014). Thus, it is important to explore public risk attitudes and risk judgments toward nuclear energy.

1.1. Psychological mechanisms of risk attitude

Previous research has examined from different perspectives why individuals change their risk attitudes and why the perception of nuclear risk varies; construal level theory (CLT) has attracted much attention. CLT posits that the mental image created by an event is characterized by its psychological distance along four dimensions: temporal

distance, spatial distance, social distance, and probability. Additionally, a small number of studies have also focused on the impact of power on psychological distance (Lammers et al., 2012; Magee and Smith, 2013).

CLT has provided a convincing explanation of risk attitude in many social cognitive domains, including judgment of moral behavior, persuasion, values-behavior consistency, and ideological consistency (Alison et al., 2010). CLT indicates that individuals' response to social events is determined by their social cognitive perspective, based on their psychological representation of events (Liberman et al., 2002; Nussbaum et al., 2003), and their level of mental construal of events is driven by their psychological distance on four dimensions, namely, time, space, social distance, and probability. It should be noted that construal level has an interactional relationship with psychological distance (Liberman and Förster, 2009). This relationship has been verified for the four dimensions of psychological distance using the implicit association test (IAT) paradigm (Bar-Anan and Liberman, 2006). Research has led to some supplementations and amendments to CLT and psychological distance (Lammers et al., 2012; Magee and Smith, 2013; Maglio et al., 2013; Smith and Trope, 2006). The close relationship between CLT and psychological distance, specifically, that high psychological distance primes high construal level, while low psychological distance primes low construal level, has been explained in terms of the four dimensions of psychological distance (Maglio et al., 2013). There is also evidence that this relationship can be further explained by combining social distance with power, based on the notion that power disparities cause asymmetric social distance (Smith and

* Correspondence to: Department of Psychology, School of Social and Behavioral Sciences, Nanjing University, Nanjing 210023, China.
E-mail address: gengliuna@nju.edu.cn (L. Geng).

Trope, 2006). Furthermore, high-power participants have been shown to perceive greater social distance, while low-power participants perceive smaller social distance (Lammers et al., 2012; Magee and Smith, 2013).

1.2. Power and risk attitude

Researchers have been widely concerned with using psychological distance theory to explain the psychological mechanisms underlying the effects of power on risk attitude. Although there is no empirical evidence directly addressing power as a component of the dimensions of psychological distance, the effect of power on risk perception and perceived risk attitude has been identified by several studies. For instance, Magee et al. (2007) studied the effect of power on competitive negotiation and found that high-power groups adopted a more positive attitude toward potential risks and were more likely to move toward their target. Meanwhile, Zhong et al. (2013) examined the impact of individual power on risk attitude and found that individuals primed with high power or in positions of high power showed reduced loss aversion compared with those primed with low power or in positions of low power. Further support for the hypothesis that power influences perceived risk was provided by Anderson and Galinsky (2006), who investigated the relationship between power and risk-taking, and found that individuals were more positive and optimistic in their risk perception and more inclined to take a risky approach after being primed with a high sense of power. However, the above research has not accounted for the association between power distance and construal level; therefore, further theoretical development is needed to paint a complete picture of the psychological effects of power on risk attitude. We aimed to address this gap by integrating power distance into psychological distance theory.

Power has been traditionally conceptualized as a signal that acts everywhere and circulates through networks of discourse, practices, and relationships (Foucault and Gordon, 1980; Habermas, 1984). In psychology, power has been defined as a sense of control over resources that can be transferred from those who have it to those who do not (Keltner et al., 2003; Magee and Galinsky, 2008). Differences in the level of control over valued resources lead to differences in decision-making (Keltner et al., 2003; Kipnis, 1976). In this study, we adopted the definition of power most widely used in social psychology and most compatible with definitions used in neighboring disciplines, i.e., asymmetric control over valued resources (Dépret and Fiske, 1993; Emerson, 1962; Fiske, 2010; Keltner et al., 2003; Magee and Galinsky, 2008; Magee and Smith, 2013; Thibaut and Kelley, 1959). Thus, different levels of sense of control over resources and others can be described as different levels of power. Broadly speaking, decision-making governmental authorities are in high-power positions, while citizens are in low-power positions (Arnstein, 1969). Hence, the power levels of different decision-makers play an important and varying role in risk attitude in environmental governance (Chilvers and Burgess, 2008; Guinote, 2007). Environmental governance often plays an important part in identifying, assessing, and mitigating risks (Markmann et al., 2013). However, previous research has not completely accounted for how individuals' different levels of power influence their risk attitude, which indicates that additional experimental and theoretical developments are needed.

1.3. Aims of the present research

By means of three studies, the present research aimed to verify whether different decision-making bodies have different risk preferences, and explore whether power is the cause of variation in environmental risk attitude. One goal of the current research was to expand the theory of psychological distance in depth and make the model more detailed. Study 1 used a completely randomized design to study the influence of decision-making role (i.e., government decision-maker

or member of the public) on environmental risk attitude. Study 2 used an IAT to verify the validity of power as one of the dimensions of psychological distance and attempted to incorporate power into the psychological distance theory model. Building on the foundation of the operationalization of power in Studies 1 and 2, Study 3 tested the effect of power on environmental risk attitude by priming participants' sense of power. In doing so, our study revealed the effect of power on environmental risk attitude toward nuclear energy.

2. Study 1

According to power and psychological distance theory, high power corresponds to high distance, while low power corresponds to low distance. As the government and the public are two important bodies in environmental governance, in Study 1, the government represented high power, while the public represented low power. We examined whether the level of power leads to variation in environmental risk perception and evaluation, and which group of participants was more inclined to avoid environmental risks. We adopted decision-making as the independent variable, with two levels: government officials and general public. Drawing on tools from Magee et al. (2007), environmental risk attitude (dependent variable) had two components: behavioral intention and attitude. We hypothesized that powerful government figures would have a greater tendency toward risk-seeking and would take a positive attitude toward the development of nuclear energy, while the public would tend to avoid risk and take an opposing attitude.

2.1. Method

2.1.1. Procedure and sample

A total of 81 volunteers, of whom 39 were men, were recruited from Nanjing University through an advertisement. The average age was 21.63 years ($SD = 2.411$). All participants received a small gift worth 8 RMB after completing the experiment. This study was approved by the Institutional Review Board of Nanjing University (subsequent Studies 2 and 3 were also approved by the same board).

A single-factor group design was used to study the effect of a decision-making role. Participants were randomly divided into two groups, the "general public" group and the "government officials" group. In accordance with the CLT paradigm, behavioral intention was operationalized as the production of positive and negative opinion statements, and attitude was measured on a scale.

2.1.2. Materials

2.1.2.1. Free association task. First, participants were asked to complete a free association task, in which they spent 5 min thinking about nuclear energy in accordance with the provided guidance and materials about current nuclear construction in China and latent risks to humans. The general public group were asked to imagine themselves as an ordinary citizen of Nanjing, and the government officials group as a government official in charge of the construction of a nuclear power plant. Subsequently, they were asked to spend 3 min thinking about the advantages and disadvantages of building nuclear power plants in the surrounding area of Nanjing, and write down three positive or negative opinion statements (participants could write all three positive opinions, all three negative opinions, or any other combination) and their decision-making role was emphasized in the process. Finally, participants were asked to make two simple evaluations: a) difficulty of producing the three opinions, and b) difficulty of generating further positive or negative opinions. Both assessments were made on a 5-point Likert scale ranging from 1 (extremely difficult) to 5 (extremely easy).

2.1.2.2. Attitude evaluation. Participants were required to complete an attitude evaluation scale adapted from the study by Eyal et al. (2004), which consisted of five items to be evaluated on a 7-point Likert scale:

Download English Version:

<https://daneshyari.com/en/article/7398001>

Download Persian Version:

<https://daneshyari.com/article/7398001>

[Daneshyari.com](https://daneshyari.com)