



## Predicting the intention to support the return of wolves: A quantitative study with teenagers



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### ABSTRACT

This study investigated the intentions of young people to support wolves as a reemerging, but still rare, species in Germany. In an exploratory model, we assumed that wildlife value orientations (WVO), individual threats, and coping appraisals were factors that affected young people supporting the return of wolves. Our study of secondary school pupils ( $n = 1243$ ) showed that WVO and threat perception were useful predictors of an intention to support the return of wolves. In addition to these factors, emotions, such as ethical emotions about a possible failure of the return of the wolves, and a fear of wolves affected the intention to support the return of wolves. Further analyses revealed that the socio-demographic parameters and lifestyle habits differed between individuals with a high favorable intention toward wolves and those with a lower intention to protect wolves. We conclude that educational measures should focus on the importance of ethical emotions, particularly the coexistence of wildlife and humans. We suggest that content knowledge, such as wildlife management, endangerment, and wildlife risks, may help students to consider multiple factors in their coping strategies so they can deal successfully with wildlife decision-making processes.

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### 1. Introduction

At present, wolves are living wild in Germany after having been locally extinct for centuries, although they are still a threatened species (Haupt et al., 2009, p.135; Reinhardt & Kluth, 2007). However, even if wolves were once a native wild species, their return is controversial in the regions affected (Gross, 2008). The predation of domestic animals by wolves is expected to have a negative impact on livestock farmers, whereas their return is regarded as a conservation success by other groups. These discussions have been investigated in other countries, which showed that higher educated and younger people are generally more likely to have a positive response toward wolves (Bjerke, Reitan, & Kellert, 1998; Kleiven, Bjerke, & Kaltenborn, 2004; Williams, Ericsson, & Heberlein, 2002), whereas rural residents and the people living in the vicinity of wolf populations tend to have a more negative response (Ericsson & Heberlein, 2003; Hunziker, Hoffmann, & Wild-Eck, 2001; Karlsson & Sjöström, 2007). The latter might be because people who live in the vicinity of a wolf population are more likely to experience the negative impacts of returning wolves (such as livestock damage). To ensure the successful conservation of wolves in Germany, it is useful to study the public's perception of their

return, which can facilitate target-group-specific education campaigns (e.g., Wallner & Hunziker, 2001).

In a recent study of the German public, the majority supported the return of wolves (Kaczensky, 2006). In a related study of German school pupils, Kaczensky (2007) showed that factual knowledge of wolves did not have a decisive role in predicting the opinions of pupils, which was more positive toward wolves than that of adults. Despite these promising results, young people also expressed a greater fear potential, which was also negatively related to the support of wolves (Kaczensky, 2007). Given these ambiguous results, it would be useful to determine how young people develop their intention to protect wolves. This question is of particular importance because educational programs are seen as a main method of supporting the protection of wildlife (CBD, 1992). Thus, from an educational perspective, knowledge of young people's attitudes and emotions would provide valuable insights into the reasoning behind young people's intentions to protect wolves. The positive factors could then be the focus of educational interventions. The overall aim of our study was to investigate young people's emotions, wildlife values, and their intention to protect wolves as a reemerging, but still threatened, species in Germany.

Psychological theory helps to understand pro-environmental behavior, including the commitment to protect wild-living species (e.g., Batson, 1991; Berenguer, 2007; Schwartz, 1977; Shelton & Rogers, 1981; Stern, 2000; Stern, Dietz, & Guagnano, 1995). Many

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studies have shown that environmentally significant behavior depends on a number of major factors, such as helping behavior in general, e.g., by inducing empathy (e.g., Berenguer, 2007; Schultz, 2000; Shelton & Rogers, 1981). These theories all assume that a valued object must be perceived as threatened to elicit helping intentions.

In 1981, Shelton and Rogers (1981) showed that the Protection Motivation Theory (PMT) could be extended by the emotional response of empathy to explain helping behaviors toward others, such as threatened species. The authors found that the process of self-protection was similar to the process of protecting others through empathy-arousing appeals. PMT was first developed to explain the intention to protect oneself from health risk (Rogers, 1983; Rogers & Prentice-Dunn, 1997) but it was later extended successfully to explain intention to protect the environment (e.g., Gardner & Stern, 1996; Homburg & Wagner, 2007; Martens & Rost, 1998; Menzel, 2004). However, if there is no perceived threat, a person will not feel an obligation to act, and protective behavior is not triggered. At the same time, individuals must feel that they can control actions that oppose the threat toward the valued object. Otherwise, a situation with a strong threat will be avoided rather than addressed (Gardner & Stern, 1996; Rogers & Prentice-Dunn, 1997). In an earlier qualitative study of young learners, PMT was shown to be a valid framework for explaining young people's wildlife-related threat perceptions (Hermann & Menzel, 2012). The same study showed that additional factors were important in the context of young people (Hermann & Menzel, 2012). For example, emotions such as sadness or anger about the local extinction of wolves. Furthermore, young people mentioned various moral arguments related to the return of wolves, such as animal rights. The latter aspect of animal rights is also reflected in the theoretical framework of wildlife value orientations (WVO), which led us to the decision to include such values in our study. Therefore, we used PMT to explain school pupils' intentions to support the return of wolves and we extended our model using WVO as an additional theoretical basis (Fulton, Manfredi, & Lipscomb, 1996; Manfredi, Teel, & Henry, 2009; Teel, Manfredi, & Stinchfield, 2007). Thus, we connected two prominent theoretical strands in the context of returning wildlife based on the findings of our previous, qualitative study (Hermann & Menzel, 2012).

### 1.1. PMT variables

PMT (Rogers, 1983; Rogers & Prentice-Dunn, 1997) explains protective behaviors that are aimed at reducing a perceived threat to a valued object (e.g., the self or a wild animal in the case of this study) based on five perceptions related to: (i) the severity of the threat; (ii) the perceived probability of the threat (vulnerability); (iii) one's individual perceived ability to deal with a threatening event (self-efficacy); and (iv) the response efficacy, which relates to the evaluation of the efficiency of coping with a perceived threat. Factors that oppose a protective behavior to overcome the threatening event are summarized as (v) response barriers. In addition, the protection motivation is affected indirectly by fear, which affects the vulnerability and perceived severity of a threat. However, other studies have argued that fear is a necessary outcome of the appraisal of the threat severity and vulnerability, which has a mediating role in predicting the protection motivation (Arthur & Quester, 2004). Together with fear, the perceived severity of the threat and the perceived vulnerability comprise a threat appraisal process.

Fear appears to have no specific role in mobilizing protective behaviors toward others, but the emotional state of empathy does appear to have a specific role because it relates to protection motivation in a positive manner (Shelton & Rogers, 1981). Emotions

other than fear, such as anger or guilt, are also viewed as factors that elicit coping responses (e.g., Dickinson & Holmes, 2008).

Coping appraisal comprises three factors: self-efficacy, response efficacy, and response barriers. Previous studies have shown that protective behavior is positively related to the perception of the threat severity and vulnerability, as well as to self-efficacy and response efficacy. Response barriers are related to protective behavior in a negative way (e.g., Lee, 2011; Menzel, 2004; Rogers & Prentice-Dunn, 1997). According to Schultz (2000), the severity of a threat related to the environment is represented by the amount of ecological, egoistic, and altruistic concern. This leads to an assumption that whenever young people perceive the threat of local wolf extinction as being severe for themselves, others, or the environment and that a failure of restoration is within the realms of possibility, they will feel an obligation to act. Furthermore, if they feel that they can do something effective about the threatening situation or they believe in effective measures for protecting a species in Germany, their commitment to protect the species increases. A possible threat to human interests or declining habitats for species might be factors that are perceived as hindering support for the return of wolves. Based on these theoretical considerations and the empirical results mentioned above, we assumed that the perception of a high threat severity and vulnerability for wolves, the emotions surrounding wolves still being at risk, and an effective coping strategy for preventing the repeated extinction of wolves would lead to a high intention to support wolves. Barriers that oppose the return of wolves may affect the support in a negative way. Thus, our guiding research hypotheses were as follows.

- H<sub>1</sub>: A perceived severity of the situation of wolves being at risk is positively related to young people's intentions to support wolves.
- H<sub>2</sub>: A perceived vulnerability is positively related to an intention to support wolves.
- H<sub>3</sub>: If young people perceive a high response efficacy, this is related positively to an intention to support wolves.
- H<sub>4</sub>: If the adolescents in our sample perceived a high self-efficacy to act with respect to the threat to wolves, their intention to protect them would be higher.
- H<sub>5</sub>: Response barriers are negatively related to the intention to support wolves.

### 1.2. Wildlife value orientation

In many studies, WVO has proved to be highly related to wildlife decisions (Fulton et al., 1996; Manfredi et al., 2009; Teel & Manfredi, 2010; Teel, Dayer, & Bright, 2006; Teel et al., 2007). For example, Fulton et al. (1996) identified eight wildlife belief dimensions, which were organized into two value orientation domains: the wildlife benefits and/or existence domain, and the wildlife rights and/or use domain. In a more recent study, however, Manfredi et al. (2009) concluded that ideologies give meanings to basic values in the context of wildlife, thereby resulting in the factors of domination and mutualism as WVO (previously referred to as the wildlife rights and/or use dimension). Mutualism comprises two belief dimensions: a more caring and a more social affiliation. In the same way, domination is represented by two belief dimensions, i.e., hunting and the use of wildlife. Individuals with a mutualistic view of wildlife attribute rights and care to wildlife. Domination-orientated individuals prioritize human benefits over wildlife interests. Thus, we assumed that a person with a mutualistic view, who perceives an obligation to care for wildlife and

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