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There is an I in nature: The crucial role of the self in nature conservation

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ABSTRACT

In this paper we analyze the social-psychological determinants of private nature conservation. As a theoretical framework we use the Theory of Planned Behavior, to which the concepts connectedness to nature, self-identity, and place attachment were added. 94 landowners participated in our survey. Results of this pilot study show that perceived behavioral control, self-identity and connectedness to nature are the key factors influencing the intention to conserve. The more farmers feel that they are capable of conserving nature on their farm, the more they see themselves as conservationists, and the more they feel connected to nature, the more likely they are to intend to conserve. An important finding is that self-identity mediates the relation between CNS and conservation intentions. This implies that with an increased connectedness to nature, people come to see themselves as conservationists and this in turn influences their intentions. Of course, these results need to be replicated and validated across different contexts. We discuss the implications of this study for future research and policy.

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Current human practices are exhausting the earth's natural capital (MEA, 2005) and this has large consequences for ecosystems all around the world. One of those environmental impacts has been a severe decrease in biodiversity (Turner et al., 2007). Biodiversity can be defined as "the variability among living organisms from all sources, including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part" (MEA, 2005). Scientists and policy makers are searching for ways to protect and enhance biodiversity.

Europe has set itself the goal of a complete stop of biodiversity loss by 2020. Worldwide, the decline in the surface of nature areas is seen as one of the main causes of a loss of biodiversity (European Commission, 2011). In order to protect European biodiversity it is therefore of high importance to assign new natural areas and protect existing ones. The European Union approach for nature conservation consists of 2 strategies. The first is the use of agri-environmental schemes (AES): subsidy programs that reward farmers for conservation activities. The second is Natura 2000: a network of protected nature areas spread all over Europe. It is aimed at protecting Europe's most vulnerable species and habitats. The Natura 2000 guidelines require every EU member to assign these protected natural areas. In the Netherlands 162 areas have been assigned and almost all of these are part of the Ecological Main Structure (EMS[1]). This structure was developed in 1990 and is a network consisting of high quality natural areas. Its main objective is to expand and connect those areas.

The EMS should be realized in 2021 and eventually should cover 600,000 ha of natural areas and 6.3 million ha of water areas. A substantial part of the EMS consists of natural areas that already existed in 1990. The challenge lies in realizing the remaining 150,000 ha of natural area. One way to do so is by focusing on private nature conservation.

Private nature conservation means rural land owners – typically farmers – dedicate part of their agricultural land to nature conservation. This implies the land is zoned differently; instead of agricultural land it will be allocated as 'nature'. In exchange for this farmers receive a one-off monetary compensation for the devaluation of their land as well as an annual subsidy for measures to optimize the land for nature conservation. The difference between AES and private nature conservation is that in the first, the main

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[1] In June 2013, the EMS was renamed Nature Network.

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function of the land is still agriculture; while in the latter, the allocation changes to nature.

Growth of the EMS by buying farmland and transforming it into a nature reserve has been stagnating and will not be sufficient to meet the 2021 goal. If the current trend is to be continued, only 60% of the EMS will be realized in 2018 (PBL, 2009). The question therefore is how land owners can be persuaded to engage in private nature conservation on their property. Therefore, it is vital that we learn about the factors driving these decisions. In the current paper, we analyze the social-psychological determinants of private nature conservation.

Recently, several studies have looked at farmer decision making and behavior from a social psychological perspective, identifying important individual and social variables that underpin decisions concerning land use and biodiversity. For instance, a study by Poppenborg and Koellner (2013) showed that farmers' attitudes – their evaluations of the behavior (Ajzen, 1991) – influenced their conservation efforts. Fielding et al. (2008) studied farmers' engagement in riparian zone management (a sustainable agricultural practice) and found that farmers' attitudes and experienced norms influenced their intention to carry out such behavior (see also Fielding et al., 2005). Such norms reflect the perceived standards for acceptable behavior within one's peer group (Terry and Hogg, 1996). A study by Lokhorst et al. (2011) focused on the psychological drivers of agricultural conservation practices, and found that, next to attitudes and norms, self-identity played an important role. Self-identity refers to the extent to which a certain behavior is considered part of the self (Terry et al., 1999). In the study reported by Lokhorst et al. (2011), the more farmers saw themselves as conservationists and the more they perceived nature conservation as something that was typical for them, the more likely they were to engage in conservation (see also de Snoo et al., 2013).

These studies all used the same basic theoretical framework, namely the Theory of Planned Behavior (TPB; Ajzen, 1991). The TPB presumes that the most proximal predictor of any given behavior is the intention to perform that behavior. This intention can be predicted by the three other components of the model: the attitude toward the behavior, the subjective norm and the perceived behavioral control (PBC). Attitude is described as an individual's evaluation of the specific behavior: it is a personal evaluation of whether the behavior is positive or negative (Ajzen and Fishbein, 1980). Subjective norm is the perceived social pressure to perform a certain behavior. It reflects the extent to which a person thinks relevant others believe the actor should perform the behavior. Finally, PBC reflects how easy or difficult the individual thinks it will be to perform the behavior. The TPB has an excellent track record in predicting and explaining environmental behaviors and intentions (see for instance Staats, 2003; Bamberg and Moser, 2007; Eriksson and Forward, 2011; Litvine and Wustenhagen, 2011), and seems particularly suited for explaining behavior that comes with high behavioral costs (Steg and Vlek, 2009). With regards to conservation behavior specifically, the TPB appears very well equipped (Kaiser et al., 2005).

One of the criticisms against the TPB has been that the model overlooks affective processes and how they relate to intentions (Manstead, 2011). Some authors have argued that the model places too much emphasis on the rational part of decision making and the accompanying cognitive processes, and less on emotional considerations that might underlie behavioral intentions (Kals and Maes, 2002). According to Kals et al. (1999), this might hold particularly true for nature conservation, as they argue that ecological behavior can never be the result of rational decision making only. These authors developed the concept of 'affinity with nature', which according to them entails 'a positive feeling of inclination by a set of cognitive appraisals and attributions' and possesses different aspects such as love of nature, feeling good or safe in nature, and experiencing feeling one with nature. Indeed, they found that this affinity with nature was positively associated with different simple conservation behaviors such as installing solar panels and water-saving devices, and choosing public transport over car use.

Other authors have further refined and tested the concept of connectedness to nature (CNS). In this development CNS has been defined as the extent to which an individual feels that he or she is part of nature (Schultz, 2001, 2002). Mayer and Frantz (2004) report 5 studies in which they found positive correlations between CNS and different pro-environmental behaviors. Dutcher et al. (2007) found that the related concept of connectivity with nature was significantly associated with pro-environmental behavior. Finally, Davis et al. (2009) showed that people's perceptions of interconnectedness with their natural environment predict pro-environmental behavior. So, within the context of general pro-environmental behavior, evidence is growing that CNS is an important factor driving behavior and decision making (see also Brügger et al., 2011, for a discussion on operationalizations).

In a recent study, Gosling and Williams (2010) investigated the relation between CNS, place attachment and farmers' vegetation management. Place attachment is usually defined as a positive connection or emotional bond between a person and a particular place, and is often thought of as a two-dimensional model, consisting of place identity and place dependence. The first refers to the symbolic importance of a place as a repository for emotions and relations that give meaning to life. The latter reflects the importance of a place in providing conditions that facilitate people's goals (Williams and Vaske, 2003). Together these two dimensions form the concept of place attachment, and this is thought to inflict feelings of stewardship, resulting in increased conservation efforts (for a more detailed discussion on the operationalization of place attachment, see Raymond et al., 2010). Gosling and Williams (2010) results showed that while vegetation protection behaviors increased with CNS, place attachment was not associated with behavior. These authors argue that their findings are consistent with "the broadly agreed theoretical framework proposing that identification with nature leads to an expanded sense of self and greater valuing of non-human species, and so to pro-environment behavior". Other researchers have also studied the relations between place attachment and behavior. Raymond et al. (2011) show that place attachment is positively associated with the planting of native vegetation by farmers. Ramkissoon et al. (2013) found that place attachment contributed to proenvironmental behavioral intentions of park visitors. Likewise, Vaske and Kobrin (2001) were able to show that place attachment positively influences environmentally responsible behaviors such as sorting recyclable trash (for more studies on place attachment and conservation, see for instance Seabrook et al., 2008; Bohnet, 2008).

How should these concepts of CNS and place attachment be integrated in the Theory of Planned Behavior? Are they likely to directly impact conservation behavior, or should we think of their influence as indirect, through one or more of the behavioral determinants? With regards to place attachment, Stedman (2002) was able to show that this concept is directly related to behavioral intentions, whereas Raymond et al. (2011) found it to be related with antecedents of intentions. Kals et al. (1999) showed that 'affinity with nature' was directly associated with behavioral decisions concerning conservation. In the Mayer and Frantz (2004) work it was reported that CNS was directly associated with a set of different ecological behaviors. Dutcher et al. (2007) also relate connectivity to environmental behavior directly; and the same can be said about Davis et al. (2009). However, it should be noted that these studies did not explicitly use the TPB, and therefore no firm conclusions can be drawn concerning the place of CNS and place attachment in the model. One of the goals of the current paper is to investigate how CNS and place attachment relate to conservation behavior. Based

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