JOURNAL OF BALTIC SCIENCE EDUCATION

ISSN 1648-3898

# FACTORS AFFECTING YOUNG PEOPLE'S BEHAVIORAL COMMITMENT TO THE PROTECTION OF LOCAL GAZELLE SPECIES: THE CASE OF ŞANLIURFA IN TURKEY

**Sevilay Dervişoğlu,**
**Muhterem Tankuş**

**Abstract.** *The protection of wildlife is an important issue for Turkey. This research examines factors affecting the behavioral commitment of young people, living in the Şanlıurfa province of Turkey, to the protection of the local gazelle species, within the framework of the Value-Belief-Norm Theory. The research was conducted with the participation of high school students (N=472), and it was found that personal norms and the ascription of responsibility are the strongest predictors of behavioral commitment to the protection of the gazelle species. Self-transcendence and conservation value clusters also had a positive impact on behavioral commitment to the protection of the gazelles. The research concludes by making recommendations concerning education programs on the protection of the gazelle species.*

**Key words:** *environmental education, Value-Belief-Norm theory, wildlife protection.*

**Sevilay Dervişoğlu**
*Hacettepe University, Ankara, Turkey*
**Muhterem Tankuş**
*Urfa Anatolian High School, Ankara, Turkey*

## Introduction

Turkey is rich in biodiversity, and spans three biodiversity hotspots (Mittermeier et al., 2004): The Caucasus, Irano-Anatolian and Mediterranean. Turkey has high levels of terrestrial, freshwater and marine biodiversity (Şekercioğlu et al., 2011), and is home to about 12.000 plant species (Avcı, 2005) and 80.000 animal species (Demirsoy, 2002). However, this rich biodiversity is under threat, making the protection of biodiversity an important challenge for Turkey (Şekercioğlu et al., 2011).

Wildlife is an important component of Turkey's biodiversity. One of the country's wild animals is the goitered gazelle (*Gazella subgutturosa*; Gültenstaedt, 1780), which is listed as *vulnerable* on the IUCN red list and is experiencing a worldwide population decline (IUCN, 2015). The goitered gazelle lives on the steppes of Southeast Anatolia (Kasparek, 1986; Ölçer, 2001). In the past, the region was home to a large gazelle population spread over a wide area, which started to decline in 1950s particularly due to overhunting, and came to the brink of local extinction. Today, goitered gazelles live only in the province of Şanlıurfa, located in the Southeast Anatolian Region of Turkey (Ölçer, 2001; Kasparek, 1986; Turan, 1984). The first initiative for the protection of this gazelle species was the hunting ban introduced in 1957 (Turan, 1984). When this failed to stop the decrease in the number of gazelles, return to nature projects was initiated. With this purpose, a breeding center was established in the Ceylanpınar county of Şanlıurfa (Turan 1977). In 2005, a group of gazelles were released into the Wildlife Development Area of Kızılkuyu, Şanlıurfa, as part of the Şanlıurfa Gazelle Reintroduction Project (Gürler, Bozkaya, Özüt & Durmuş, 2015). Gazelles still face various threats despite efforts to protect them. The biggest threats are illegal hunting and the live catching of the calves. The calves caught are then sold as pets (Çobanoğlu, 2010; Durmuş, 2010; Ölçer, 2001).

Gazelle is a species with economic, aesthetic, cultural and symbolic value for the province of Şanlıurfa. Partridge hunting and gazelle hunting, which have ancient roots, are part of the folk culture of Şanlıurfa (Kürkçüoğlu, Cihat, Kürkçüoğlu & Güler, 2002). Gazelle is mentioned in folk music (Dönmez & Karaburun, 2013) and folk legends (Kürkçüoğlu et al., 2002) of the Şanlıurfa region. For example, the local country of Ceylanpınar (gazelle spring) was named after this wild animal. There is also big potential for gazelle hunting tourism and ecotourism, which means the pressures already existing, will only increase. Hence, reintroduction and other protection measures in the region are crucial for the survival of this gazelle species. However, to be successful such projects require the support of local communities. This, in turn, means that the attitudes and behavioral commitment of the local communities toward the gazelles are very important. Education is one way to influence people's behavior toward nature, and is identified as a basic strategy in biodiversity protection (CBD, 1992). Thus, education can play a very important role in motivating the local communities to help protect the gazelles in Şanlıurfa. The factors for developing effective education programs that in turn will motivate young people in the region to protect the gazelles, need to be identified.

Several researches showed the relevance of social psychological factors in explaining the intentions of young people to the protection of wildlife (Hermann, Voß, & Menzel, 2013; Herman & Menzel, 2013; Lo, Chow & Cheung, 2012). Researches also show that the VBN Theory is successful in explaining young people's intentions to protect biodiversity (Dervişoğlu, 2007; Dervişoğlu, Menzel, Soran & Bögeholz, 2009; Menzel & Bögeholz, 2010). Based on these findings and by using the VBN Theory, this research examines young people's behavioral commitment to the protection of the local gazelle species.

*Value-Belief-Norm Theory*

The VBN Theory was developed to explain the concept of environmental support (Stern, Dietz., Guagnano, & Kalof, 1999; Stern, 2000). The VBN Theory links the Norm-Activation Model (NAM) (Schwartz, 1977; Schwartz & Howard, 1981) and the Values Theory (Schwartz, 1992) to the New Ecological Paradigm (NEP) (Dunlap & Van Liere, 1978; Dunlap, Van Liere, Mertig & Jones, 2000). In this theory, the variables are grouped into three blocks of values, beliefs and norms to form a causal chain that can be used to explain environmental support (Figure 1.)

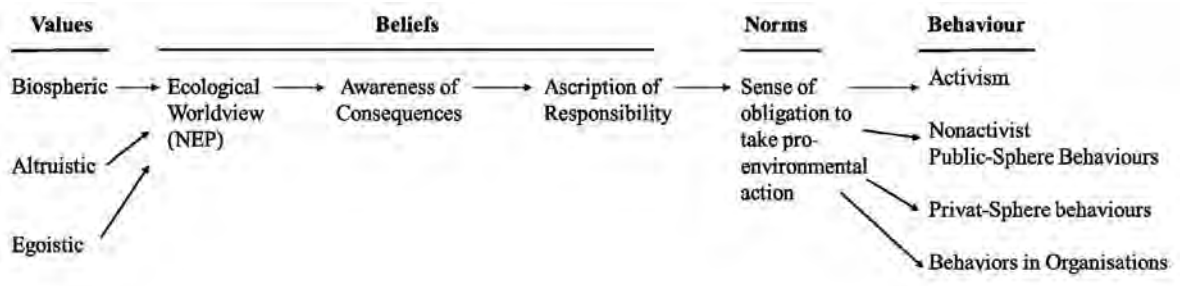


**Figure 1: Value-Belief-Norm Theory (Adapted from Stern, 2000).**

The first block in the VBN Theory is values. Based upon Schwartz's (1992; 1994) taxonomy of values, the three value orientations relevant to environmentalism were defined: egoistic, altruistic and biospheric value orientations (Stern, Dietz, & Kalof, 1993; Stern & Dietz, 1994; Stern et al., 1999; Stern, 2000). People with egoistic value orientations evaluate environmental conditions on the basis of benefits and costs accruing to themselves, whereas people with altruistic value orientations evaluate environmental conditions on the basis of their effects on other people. People with biospheric value orientations, on the other hand, evaluate environmental conditions on the basis of their effects on the ecosystem. It was reported that altruistic and biospheric value orientations in particular have a positive impact on environmentally friendly behavior (Guiterrez Karp, 1996; Menzel & Bögeholz, 2010; Schultz & Zelezny, 1998; Stern et al., 1999). Biospheric values are reported to be a strong predictor of young people's behavioral commitment to protect biodiversity (Menzel & Bögeholz, 2010; Dervişoğlu, 2007). However, Ojea and Loureiro (2007) found that the egoistic and altruistic values influence the willingness to pay for wildlife.

There are three types of belief variables in the second block of the VBN Theory. The first of these is the NEP, which

represents general beliefs about human-nature interaction (Dunlap & Van Liere, 1978; Dunlap et al., 2000). The NEP Scale measures attitudes towards the general consequences of environmental conditions (Dunlap et al., 2000). The researches have found that the NEP affects people's decisions concerning wildlife (Kaltenborn, Andersen, Vittersø, & Bjerke, 2012; Kotchen & Reiling, 2000). The second variable in the beliefs block is Awareness of Consequences (Stern et al., 1999; Stern, 2000). It represents the awareness of the consequences of environmental conditions for valued objects. In line with the value orientations of the VBN Theory, the awareness of egoistic consequences, of altruistic consequences, and of biospheric consequences was defined (Stern, 2000). Stern et al. (1993) report that awareness of all three types of consequences explains environmental behavior. The third belief variable of the theory is the Ascription of Responsibility for mitigating the harmful consequences of environmental conditions (Stern et al., 1999; Stern, 2000). Ascription of responsibility was reported to predict young people's commitment to protect biodiversity for samples from different countries (Menzel & Bögeholz, 2010; Dervişoğlu, 2007).

The third block of the VBN Theory concerns Personal Norms, and contains variables that have the closest relationship with behavioral intentions. Personal norms are feelings of normative obligation toward a behavior (Schwartz, 1977). Many researches have demonstrated that PN are powerful predictors of environment-friendly behavior (Dervişoğlu, 2007; Menzel & Bögeholz, 2010; Nordlund & Gravill, 2002; Stern et al., 1995; Stern et al. 1999; Widegren 1998). They were also reported to have a powerful affect on young people's commitment to protect biodiversity (Dervişoğlu, 2007; Menzel & Bögeholz, 2010).

Variables in the Value, Belief and Norm blocks form a causal chain in the VBN Theory (Stern et al., 1999; Stern, 2000): values, which are basic elements of personality, influence general beliefs about human-nature interaction (NEP), that in turn influence awareness of environmental problems' harmful consequences for valued objects. Awareness of consequences and the ascription of responsibility to mitigate negative consequences activate personal norms. Finally, the activation of personal norms results in environmental behavior. Each variable in the chain has a direct influence on the next variable, but can also have direct influences on other variables.

The VBN Theory defines four types of environmental support (Stern, 2000): Active behavior (the type of environmental citizenship in which individuals participate in activities such as demonstrations), non-active Public Behavior (passive environment-friendly behavior such as supporting public policies), private-sphere behavior (behavior in private sphere such as using environment-friendly products), and behavior in organizations (e.g. an engineer designing environment friendly products).

*Examining Commitment to the Protection of Local Wildlife Species Using the VBN Theory*

This research examines factors affecting behavioral commitment to protect local gazelle species using the VBN Theory. With this purpose in mind, the VBN Theory was adapted for use in the context of the protection of local gazelle species. This research examined the direct effects of values, beliefs and personal norms on the behavioral commitment to protect local gazelle species.

Schwartz's value clusters were used to measure values. Schwartz (1992) defined 10 types of values that represent motivational goals. Values that represent conflicting motivational goals are clustered around two axes (Figure 2). At one end of the first axis is the self-transcendence value cluster (universalism and benevolence), located opposite to the self-enhancement value cluster (power and achievement). The self-transcendence cluster contains values that are concerned with the welfare of all other people and of the nature. Values in the self-enhancement cluster, on the other hand, encourage prioritizing one's own interests and dominance. The second axis has openness to change value cluster (stimulation and self-direction) at one end, and the conservation value cluster (conformity, tradition and security) at the other. Values in the openness to change cluster encourage individual quest for novelty and independence of thought and action. Values in the conservation cluster, on the other hand, encourage going beyond egoistic desires, developing close relationships with people and institutions, and preserving traditions. The value of hedonism straddles openness to change and self-enhancement value clusters. Based on the previous researches (Cukur, De Guzman & Carlo, 2004; Triandis, 1995), this research includes hedonism in the openness to change cluster.



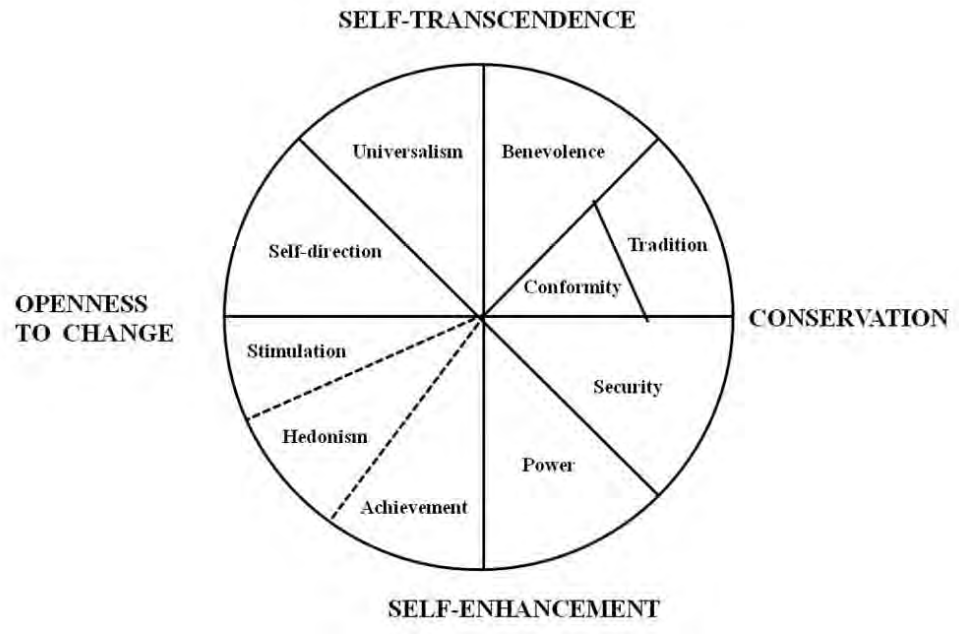


**Figure 2: The Relations Among 10 Motivational Types Of Value (Schwartz, 1992).**

In terms of beliefs, this research uses the NEP, awareness of consequences and ascription of responsibility. Awareness of consequences has usually been operationalized as harmful consequences for valued objects. This research is concerned with the extinction of a given species in a given region. Loss of biodiversity – and hence some species – has ecological and social consequences (Chapin et al., 2000). These are connected to the ecological, socioeconomic, aesthetic, cultural and spiritual importance of biodiversity. In this context, Chardonnet et al. (2002) examined the economic importance, nutritional value, ecological role, and socio-cultural importance of wildlife. The gazelle species under investigation in this research has economic, cultural, aesthetic and symbolic value for the region, in addition to its importance in the ecosystem. Based upon these considerations, this research incorporates awareness of consequences as the ecological, economic and socio-cultural consequences of the loss of the local gazelle species.

Behavioral commitment to the protection of the local gazelle species was examined on the basis of Stern's (2000) typology of environmental behaviors.

*Aim of Research*

This research aims to identify the factors affecting the behavioral commitment of young people living in Şanlıurfa to the protection of the local gazelle species. With this purpose, young people's perceptions of the extinction of goitered gazelles in their region, and the factors motivating them to help protect the species, were examined within the context of the VBN Theory. The research sought answers to the following question:

- What are the levels of young people's behavioral commitment to the protection of the local gazelle species?
- What are the levels of young people's personal norms concerning the protection of the local gazelle species?
- What are the levels of young people's responsibility to the protection of the local gazelle species?
- What are the levels of young people's awareness of consequences to the loss of the local gazelle species?
- Which factors affect young people's behavioral commitment to the protection of the local gazelle species?

## Methodology of Research

This research examines the factors affecting the commitment of young people to the protection of the gazelles by using quantitative questionnaire survey. The Questionnaire was developed based on the VBN Theory (Stern, 2000) and it contains questions regarding the gazelle species that live in Şanlıurfa. High school students have participated to the survey. The data were analyzed using the Statistical Package for Social Sciences (SPSS) version 17.

### *Sample*

The research was conducted with the participation of a total of 472 high school students (grades 9 through 11) living in the villages, counties, and the city center of the province of Şanlıurfa. The participants' age ranged from 15 to 20 years (M = 15.8; *SD* = 1.1). Within the sample group, 40.7% were female and 59.1% were male (.2% unknown). Of the participating students, 43.6% lived in rural areas, and 54.9% lived in urban areas (1.5% unknown). In the research, students from common high school (61.4%) and Anatolian high school (37.5%) in which more successful students are studying, have been included. The sample is probably not representative for the whole country. The generalization of the results to the whole Turkey is not achieved.

### *Instrument and Procedures*

The data were collected in April 2013 and June 2013, during school term, at the high schools attended by the students.

The questionnaire was developed by the researchers using VBN Theory (Stern et al., 1999; Stern, 2000). The first part of the questionnaire contained a short text explaining the aims of the research and the anonymity of the data to be collected, and demographic questions. At the end of the first part was a short informative text on the gazelle species in question, as well as an explanation that the items on the questionnaire are on this gazelle species. The second part of the questionnaire contained measurements of the constructs of the VBN Theory. All scales in the questionnaire, except Portrait Values Questionnaire (PVQ), were five-point likert-scale that ranged from 'strongly disagree' to 'fully agree'. Exploratory factor analysis was conducted to test the construct validity. The reliability of the scales was checked by calculating the Cronbach's Alfa coefficient.

To measure values, this research uses the PVQ developed by Schwartz et al. (2001) and adapted for use in Turkey by Demirutku and Sümer (2010). The Turkish adaptation of the PVQ, when administered to a sample group from Turkey, gave results that were consistent with the theoretical model, and is psychometrically adequate for use with Turkish sample groups (Demirutku & Sümer, 2010). Each item of the PVQ provides portraits of people with different value preferences. The scale has 40 items covering ten value types. Participants are asked to evaluate how much each description is or is not like them, using a six point Likert scale. This research uses the scores for PVQ value clusters (Schwartz, 1994). The Cronbach's Alpha coefficients for the value clusters showed that each had adequate levels of internal reliability (self-enhancement=.73; self-transcendence=.85; conservation=.84; openness to change=.78).

To measure the participants' pro-ecology worldviews, the NEP Scale developed by Dunlap et al. (2000) was used. The original scale was adapted to Turkish using the back translation method. Following validity and reliability analyses, items related to *limits to growth* and *human exemptionalism* factors were removed because they decreased validity and reliability. Erdoğan (2009) had similarly reported that items related to the limits to growth factor did not measure the NEP in the Turkish sample group, and could be eliminated. The remaining nine items revealed a two-factor structure. The first factor represents the anthropocentric approach, and the second factor represents the ecocentric approach. Item factor loads ranged from .56 and .78. Two factors together explained 49% of the total variance. Cronbach's Alfa coefficient of NEP-Scale was .53.

The Awareness of Consequences scale was constructed by the researchers. In order to measure awareness of consequences, items on the ecological, economic, and socio-cultural consequences of the extinction of the gazelle species were created. The factor analysis conducted revealed a two-factor structure. Item factor loads ranged from .60 and .79. The first factor contained three items (α=.70) on the economic consequences of the extinction of the local gazelle species *('If the gazelle species in our region were to become extinct…';'Hunting tourism in the region would be hurt';'Economic benefits from the gazelle -such as gazelle meat, skin, etc.- would be lost'; 'Hunting in the region would be negatively affected'*). The second factor had five items (α=.73) on the ecological and social/cultural consequences

of the extinction of the local gazelle species ('*If the gazelle species in our region were to become extinct…*'; '*Future generations would not be able to know about the gazelle in the region*'; '*The ecosystems in the region, of which the gazelle is a part, would be damaged*'; '*The gene pool in the region would be eroded*'; '*Part of the culture of the region – the gazelle in folk songs and motifs – would be lost*'; '*The region would lose an aesthetic value, a trait*'). These two factors together explained 54% of the total variance. The Cronbach's Alpha coefficient for total scale was .75.

The scale on the ascription of responsibility was constructed by the researchers on the basis of a review of the relevant literature (Stern et al., 1999). Ascription of responsibility to protect local gazelle species was operationalized as feelings of responsibility for protecting the gazelle species, and perceived ability to do so. Ascription of responsibility was measured using four items: *('I feel responsible for protecting the gazelle species in our region*'; '*All of us, as residents of this region, are obligated to protect the gazelles here*'; '*I can contribute to the protection of the gazelle species in our region if I want to do so*'; '*There are things that we, the residents of this region, can do to help increase the number of gazelles in the region*'). The one-factor explained 60% of total variance. Item factor loads ranged from .73 to .82. Cronbach's Alfa coefficient of scale was .78.

The scale on personal norms was constructed by the researchers partially on the basis of the relevant literature (Stern et al., 1999). Personal norms to protect local gazelle species was incorporated as a feeling of normative responsibility for protecting the species. Personal norms were measured using three items *('I would feel guilty if I knowingly ate gazelle meat*'; '*I would feel bad if I didn't do everything in my power to help prevent the extinction of the gazelles in our region*', '*To me, protecting the gazelles in our region is a matter of conscience*'). The factor analysis revealed a one-factor structure. Factor loading ranged from .78 to .88. The explained total variance was 70%. Cronbach's Alfa coefficient of scale was .77.

The scale for behavioral commitment to the protection of the local gazelle species was constructed by the researches, partially based on the typology of behaviors defined by Stern (2000). Items on public-sphere behavior (e.*g. 'I would…'; 'Inform the authorities if I noticed illegal gazelle hunting in our region'; 'Be happy about legal measures to be taken by the authorities to protect the gazelles in the region*') and private-sphere behavior (*e.g. 'I would…"; 'Decline invitations to parties or meetings where gazelle meat is to be served*'; '*Volunteer to look after vulnerable gazelle calves at my house*') were created. However, the factor analysis conducted showed that all 11 items loaded on a single factor. Item factor loads ranged from .58 to .76. These two factors together explained 48% of the total variance. Cronbach's Alfa coefficient of scale was .89.

*Data Analysis*

A descriptive analysis was carried out to examine the mean values and standard deviations of the scores received from young people living in Şanlıurfa for behavioral commitment, personal norms, awareness of consequences, and values concerning the protection of the local gazelle species. Spearman's correlation test was used to examine the relationships between the variables in the research. To identify the factors affecting young people's behavioral commitment to the protection of the gazelles, a simple linear regression and multiple linear regressions were used. First, a simple linear regression analysis was conducted to identify the effect of personal norms, by themselves, on behavioral commitment. Then, a multiple regression analysis was conducted with all the independent variables, in order to identify the variables that have direct effects on behavioral commitment, according to the VBN Theory.

**Results of Research**

Descriptive statistics (Table 1) show that young people have moderate levels of personal norms (M=3.64) and responsibility (M=3.76) for the protection of the local gazelle species. However, the rather high standard deviation associated with this mean value shows that there is large variation among the participants in terms of their personal norms. Behavioral commitment to the protection of the local gazelle species is not at satisfactory levels either (M=3.83). The descriptive statistics also show that participants have moderate levels of general pro-environmental attitudes (M=3.42) Most of the young people who participated in the research are of the opinion that socio-cultural costs (M=4.10) of the extinction of the gazelle species in the region are greater than its economic costs (M=3.51). However, the high standard deviation (SD=1.07) associated with the awareness of economic consequences indicates that there is a great diversity of opinion on this subject. Mean values associated with the value clusters show that the participants received high scores for all clusters.

**Table 1. Descriptive statistics for values, beliefs and behavioral commitment.**

| | Min. | Max. | Mean | SD |
|---|---|---|---|---|
| Self-transcendence | 1.60 | 6 | 4.89 | .86 |
| Self-enhancement | 1.43 | 6 | 4.51 | .90 |
| Openness to Change | 1.60 | 6 | 4.72 | .80 |
| Conservation | 1.46 | 6 | 4.80 | .78 |
| NEP | 2.11 | 5 | 3.42 | .54 |
| Awareness of Ecological/Social Consequences | 1 | 5 | 4.10 | .73 |
| Awareness of Economic Consequences | 1 | 5 | 3.51 | 1.07 |
| Ascription of Responsibility | 1 | 5 | 3.76 | .87 |
| Personal Norms | 1 | 5 | 3.64 | 1.07 |
| Behavioral Commitment | 1 | 5 | 3.83 | .82 |

Table 2 reports the results of the correlation analyses conducted. The variables that are most highly correlated with the behavioral commitment to the protection of the gazelles are personal norms (rho=.59, p<.001), ascription of responsibility (rho=.62, p<.001), self-transcendence (rho=.55, p<.001) and conservation (rho=.53, p<.001). The variable that has the weakest correlation with the behavioral commitment are NEP (rho=.12, p>.05), awareness of economic consequences (rho=.21, p<.001) and self-enhancement (rho=.30, p<.001). Ascription of responsibility has a moderate positive correlation with the awareness of ecological/social consequences (rho=.43, p<0.001), and a low correlation with the awareness of economic consequences (rho=.18, p<.001). Conservation and self-transcendence value clusters were found to be highly positively correlated (rho=.82, (p<.001). Openness to change was positively correlated with all other value clusters (p<.001). Ascription of responsibility has a high positive correlation with personal norms (rho=.56, p<.001).

**Table 2. Bivariate correlations between the variables of the VBN theory.**

| | **1** | 2 | **3** | 4 | **5** | 6 | 7 | **8** | 9 | **10** |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Self-transcendence | 1 | | | | | | | | | |
| 2. Self-enhancement | .48*** | 1 | | | | | | | | |
| 3. Openness to Change | .64*** | .74*** | 1 | | | | | | | |
| 4. Conservation | .82*** | .54*** | .62*** | 1 | | | | | | |
| 5. NEP | .30*** | .04 | .16** | .21*** | 1 | | | | | |
| 6. Awaren. of ecol./Soc. Cons. | .39*** | .32*** | .35*** | .33*** | .13** | 1 | | | | |
| 7. Awaren. of Economic Cons. | .18*** | .17*** | .16** | .25*** | -.01 | .36*** | 1 | | | |
| 8. Ascription of Responsibility | .48*** | .32*** | .41*** | .45*** | .09 | .43*** | .18*** | 1 | | |
| 9. Personal Norms | .43*** | .26*** | .34*** | .43*** | .08 | .33*** | .11* | .56*** | 1 | |
| 10. Behavioral Commitment | .55*** | .30*** | .40*** | .53*** | .12* | .41*** | .21*** | .62*** | .59*** | 1 |

**= p<.05, **= p<.01, ***= p<.001*

Table 3 reports the results of the regression analysis conducted to explain behavioral commitment to the protection of the local gazelle species. The simple linear regression analysis showed that personal norms have a strong positive effect on the behavioral commitment to the protection of the gazelles (β= .62, p<.001). By themselves, personal norms explain 38% of the variance in behavioral commitment. In the multiple regression analysis including all the VBN variables, personal norms (β= .34, p<.001) and ascription of responsibility (β= .25, p<.001) emerged as the strongest predictors of the behavioral commitment to the protection of the local gazelle species. NEP and awareness of consequences, on the other hand, did not have a significant effect on the behavioral commitment to the protection of the local gazelle species. Of the value clusters, conservation (β= .19, p<.05) and self

-transcendence (β= .17, p<.05) had significant positive effects on the behavioral commitment to the protection of the local gazelle species. Openness to change and self-enhancement value clusters, on the other hand, did not have a significant effect on behavioral commitment. Personal values, ascription of responsibility, conservation and self-transcendence together explained 56% of the variance in the behavioral commitment to the protection of the local gazelle species.

**Table 3. Results of the regression analysis explaining the behavioral commitment to the protection of the local gazelle species.**

| | B | SEB | ß | t | Adj. $R^2$ | F |
|---|---|---|---|---|---|---|
| **Model 1** | | | | | | |
| Personal Norms | .47 | .03 | .62*** | 16,64 | .38 | 276,79*** |
| Model 2 | | | | | | |
| Personal Norms | .26 | .03 | .34*** | 7.79 | .56 | 50.79*** |
| Ascription of Responsibility | .24 | .04 | .25*** | 5.50 | | |
| Awareness of Economic Consequences | .04 | .03 | .05 | 1.23 | | |
| Awareness of Ecologic. /Social Conseq. | .09 | .05 | .08 | 1.87 | | |
| NEP | .02 | .06 | .02 | .43 | | |
| Self-transcendence | .17 | .07 | .17* | 2.29 | | |
| Self-enhancement | -.07 | .05 | -.08 | -1.36 | | |
| Openness to Change | -.06 | .07 | -.06 | -.91 | | |
| Conservation | .20 | .08 | .19* | 2.60 | | |

**= p<.05, **= p<.01, ***= p<.001*

## Discussion

The findings of this research lend additional support to the well-documented success of the VBN Theory in explaining behavioral commitment to the protection of biodiversity (Dervişoğlu, 2007; Menzel & Bögeholz, 2010). Variables associated with the VBN Theory explain a large part of the variation in behavioral commitment to the protection of the local gazelle species.

Protecting nature is not independent from values, and it is very important that values are integrated into nature conservation education (Grace & Ratcliffe, 2002). In accordance with the results of previous researches (Hrubes, Ajzen & Daigle, 2001; Ojea & Loureiro, 2007) the life values have shown a significant influence on the commitment to wildlife. Self-transcendence and Conservation value clusters have a positive effect on the behavioral commitment of the young people to the protection of the gazelles. Several researches have shown that self-transcendence influenced environmental behavior positively (Gutierrez Karp, 1996; Schultz et al., 2005; Stern & Dietz, 1994). The self-transcendence includes the values of universalism and benevolence. Universalism is a nature-related value, and encourages respect and understanding towards nature and other people and protecting them (Schwartz, 1994). Universalism is reported to be a positive predictor of the behavioral commitment of young people to the protection of biodiversity (Dervişoğlu, 2007; Menzel & Bögeholz, 2010). The positive effect of self-transcendence, which represents an orientation toward the well-being of nature and other people, on the behavioral commitment of young people to the protection of the gazelle species is an expected finding.

The positive effect of the Conservation, which includes tradition, security and conformity values, on behavioral commitment of young people to the protection of the gazelle species in their region, is an interesting finding. This is because the values of conservation were found to be a negative predictor of environmental support by Stern et al. (1995), and their effect on the behavioral commitment to the protection of biodiversity varied by sample group (Menzel & Bögeholz, 2010). In a comparative research conducted in Chile and Germany, security and tradition had a positive effect on the behavioral commitment to protect biodiversity only in the Chilean sample. Menzel and Bögeholz (2010) explain this finding with reference to personal consternation. This explanation holds that young people in Chile, biodiversity-hotspot, experience the loss of biodiversity in their daily life. The finding of the present research that conservation has a positive effect on the behavioral commitment of young people to the protec-

tion of the local gazelle species, supports Menzel and Bögeholz's (2010) personal consternation argument. The gazelle species in question is indigenous to the Şanlıurfa region, and has great symbolic and cultural significance (Kürkçüoğlu et al., 2002). Conservation includes values that encourage the protection of the tradition and the stability (Schwartz, 1994; 2013). Thus, for young people with a strong orientation toward conservation, protection of the gazelle might make sense because it is part of the culture and ecosystem of the region. The finding that young people have high levels of awareness of the ecological/social consequences of the extinction of the gazelle species in the region supports this explanation. Hermann and Menzel (2013) found that local conditions play an important role in shaping reported intentions to support the reintroduction of wildlife species. For instance, Şanlıurfa is a place where the local economy is dominated by agriculture and religious-traditional values are very strong (El-Menouar & Fritz, 2009). Thus, in educational activities, a focus on the cultural and symbolic significance of the gazelle species for the region might be effective in motivating young people with conservation values to help protect the gazelles. This finding also demonstrates the importance of using different perspectives (aesthetic, cultural, spiritual, etc.) in biodiversity education (Van Weelie & Wals, 2002).

This research found that personal norms have a powerful effect on the behavioral commitment, confirming the findings of a number of earlier researches (Dervişoğlu, 2007; Menzel & Bögeholz, 2010; Stern et al, 1995; Stern et al, 1999; Widegren, 1998). In the VBN Theory, personal norms are the variables that are located closest to actual behavior (Stern, 2000). Consequently, their effect on behavioral commitment to the protection of the gazelles is greatest.

Ascription of responsibility had the second largest effect on the behavioral commitment of young people in Şanlıurfa to the protection of the local gazelle species. This finding is in line with the findings of previous researches on the behavioral commitment of the protection of biodiversity (Dervişoğlu, 2007; Menzel & Bögeholz, 2010). When young people feel responsible for the protection of the gazelles and believe that they can make a positive contribution, their behavioral commitment to the protection of the gazelles increases. However, personal norms and the ascription of responsibility among young people are not at satisfactory levels.

This research found that the NEP does not have a significant effect on behavioral commitment to the protection of the gazelles, which seems to run counter to the reports of other researches that the NEP has a significant influence on behaviors and attitudes towards the protection of endangered species. This difference might arise because the NEP measures beliefs about the consequences of human-nature interaction in very general terms (Dunlap et al., 2000), whereas the present research is about the protection of a specific species. General environmental beliefs might have insufficient explanatory power in explaining commitment to the protection of the wildlife species examined in this research. The fact that two dimensions of the NEP scale were removed might also have contributed to this finding.

Awareness of consequences was not found to have a significant effect on the behavioral commitment of young people to the protection of the local gazelle species. However, awareness of ecological/social consequences had a higher correlation with the behavioral commitment compared to awareness of economic consequences. On a similar note, it was reported that non-economic factors are more important, especially for the protection of endangered species (Kotchen, & Reiling, 2000).

**Conclusions and Implications**

Local community support is crucial for the protection of local wildlife. This research shows that values, ascription of responsibility and personal norms are among the determinants of young people's behavioral commitment to the protection of a local gazelle species in Şanlıurfa.

This research has again shown the necessity that values and normative factors should be integrated to the environmental education. The focus on the socio-cultural and ecological value of the gazelle in educational activities, is very important in motivating the young people who are living in Şanlıurfa, to protect the gazelles. The questioning of traditions such as the ''wildlife hunting" from the ethical and ecological point of view, would contribute to the realization of the responsibilities regarding the endangering of the local wildlife. The themes such as the right of the gazelle species to survive and, in the context of inter-generational justice, the right of the future generations to have gazelles in the region could be developed to motivate young people to help protect the gazelles.

Factors such as income, education and urbanization are affecting the interaction between human and wildlife (Manfredo, Teel & Henry, 2009). The results of this research are restricted to the young people who live in the Şanlıurfa region. Turkey consists of distinct regions that are very different from one another in terms of their



geographical and socio-economic characteristics and value orientations. Therefore, it is very difficult to make a generalization of the results to the whole of Turkey. Hence, we need multi-regional comparative researches on the protection of wildlife in Turkey.

**References**

Avcı, M. (2005). Çeşitlilik ve endemizm açısından Türkiye'nin bitki örtüsü [Vegetation in Turkey in terms of diversity and endemism]. *İstanbul Üniversitesi Edebiyat Fakültesi Coğrafya Bölümü Coğrafya Dergisi, 13*, 27-55.

CBD, Convention on Biological Diversity (1992). *Convention Text*. Retrieved from https://www.cbd.int/convention/text/.

Chapin III, F. S., Zavaleta, E. S., Eviner, V. T., Naylor, R. L., Vitousek, P. M., Reynolds, H. L., & Díaz, S. (2000). Consequences of changing biodiversity. *Nature*, *405* (6783), 234-242.

Chardonnet, P., Clers, B. D., Fischer, J., Gerhold, R., Jori, F., & Lamarque, F. (2002). The value of wildlife. *Revue Scientifique et Technique-Office International des Épizooties*, *21* (1), 15-51.

Cukur, C. S., De Guzman, M. R. T., & Carlo, G. (2004). Religiosity, values, and horizontal and vertical individualism—collectivism: A study of Turkey, the United States, and the Philippines. *The Journal of Social Psychology, 144* (6), 613-634.

Çobanoğlu, A. E. (2010). *Identification of demographic structure and population viability analysis of Gazella subgutturosa in Şanlıurfa* (Master's thesis). Middle East Technical University, Ankara.

Demirsoy, A. (2002). *Genel zoocoğrafya ve Türkiye zoocoğrafyası [General zoogeography and Turkey's zoogeography].* Ankara: Meteksan.

Demirutku, K., & Sümer, N. (2010). Temel değerlerin ölçümü: Portre Değerler Anketi'nin Türkçe uyarlaması [Measurement of basic values: Turkish adaptation of portrait values questionnaire]. *Türk Psikoloji Yazıları, 13* (25), 17-25.

Dervişoğlu, S. (2007). *Biyolojik çeşitliliğin korunmasına yönelik eğitim için öğrenme ön koşulları [Learning Pre-conditions for protecting the biodiversity]* (Doctoral dissertations). Hacettepe Üniversitesi, Ankara.

Dervişoğlu, S., Menzel, S., Soran, H., & Bögeholz, S. (2009). Değerler, inançlar ve problem algısının biyolojik çeşitliliği korumaya yönelik kişisel normlara etkisi [Influence of values, beliefs and problem perception on personal norms for biodiversity protection]. *Hacettepe Üniversitesi Egitim Fakültesi Dergisi, 37,* 50-59.

Dönmez, B. M., & Karaburun, D. (2013). Türk halk müziği sözlerinde "metaforik anlatım geleneği" [Metaphorical expression tradition in turkish folk music lyrics]. *International Periodical For The Languages, Literature and History of Turkish or Turkic, 8/4,* 1081-1097.

Dunlap, R. E., Van Liere, K. D., Mertig, A. G., & Jones, R. E. (2000). Measuring endorsement of the New Ecological Paradigm: A revised NEP scale. *Journal of Social Issues, 56* (3), 425-442.

Dunlap, R. E., & Van Liere, K. D. (1978). The new environmental paradigm. *The Journal of Environmental Education, 9* (4), 10-19.

Durmus, M. (2010). *Determination of home range size and habitat selection of gazelles (Gazella subgutturosa) by GPS telemetry in Şanlıurfa* (Doctoral dissertation). Middle East Technical University. Ankara.

El-Menouar, Y., & Fritz, M. (2009). Sozioökonomische Entwicklung und Wertvorstellungen in elf Regionen der Türkei [Socio-economic development and values in eleven regions of Turkey]. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, *61* (4), 535-561.

Erdoğan, N. (2009). Testing the new ecological paradigm scale: Turkish case. *African Journal of Agricultural Research, 4* (10), 1023-1031.

Grace, M. & Ratcliffe, M. (2002). The science and values that young people draw upon to make decisions about biological conservation issues. *International Journal of Science Education, 24,* 1157-1169.

Gutierrez Karp, D. (1996). Values and their effect on pro-environmental behavior. *Environment and Behavior, 28* (1), 111-133. 69.

Güldenstaedt A.I. (1780). Antilope subgutturosa descripta. *Acta Academiae Scientiarum Imperialis Petropolitanae, 1,* 251–274.

Gürler, Ş., Bozkaya, F., Özüt, D., & Durmuş, M. (2015). Some morphological characteristics and neonatal weights of reintroduced gazelle (Gazella subgutturosa) in Turkey. *Turkish Journal of Zoology*, *39* (3), 458-466.

Hermann, N., Voß, C., & Menzel, S. (2013). Wildlife value orientations as predicting factors in support of reintroducing bison and of wolves migrating to Germany. *Journal for Nature Conservation, 21*(3), 125-132.

Hermann, N., & Menzel, S. (2013). Predicting the intention to support the return of wolves: A quantitative study with teenagers. *Journal of Environmental Psychology, 36*, 153-161.

Hrubes, D., Ajzen, I., & Daigle, J. (2001). Predicting hunting intentions and behavior: An application of the theory of planned behavior. *Leisure Sciences*, *23* (3), 165-178.

*IUCN Red List of Threatened Species. Version 2015.3*. Retrieved October 20, 2015, from http://www.iucnredlist.org/details/8976/0.

Kaltenborn, B. P., Andersen, O., Vittersø, J., & Bjerke, T. K. (2012). Attitudes of Norwegian ptarmigan hunters towards hunting goals and harvest regulations: The effects of environmental orientation. *Biodiversity and Conservation, 21* (13), 3369-3384.

Kasparek M. (1986). On the historical distribution and present situation of gazelles, Gazelle ssp., in Turkey. *Zoology in the Middle East, 1,* 11–15.

Kotchen, M. J., & Reiling, S. D. (2000). Environmental attitudes, motivations, and contingent valuation of nonuse values: a case study involving endangered species. *Ecological Economics, 32* (1), 93-107.

Kürkçüoğlu, C., Cihat, A., Kürkçüoğlu, S. & Güler, S. E. (2002). *Şanlıurfa: Uygarlığın doğduğu şehir: coğrafya, tarih, mimari, arkeoloji, turizm, sanat, edebiyat, halk kültürü [Şanlıurfa: City where civilization was born: Geography, history, architecture, archeology, tourism, art, literature, folk culture].* Şanlıurfa: ŞURKAV.

Lo, A. Y., Chow, A. T., & Cheung, S. M. (2012). Significance of perceived social expectation and implications to conservation education: Turtle conservation as a case study. *Environmental management, 50* (5), 900-913.

Manfredo, M. J., Teel, T. L., & Henry, K. L. (2009). Linking society and environment: A **multilevel model of shifting wildlife value orientations** in the Western United States. *Social Science Quarterly, 90* (2), 407-427.

Menzel, S., & Bögeholz, S. (2010). Values, beliefs and norms that foster Chilean and German pupils'commitment to protect biodiversity. *International Journal of Environmental and Science Education, 5* (1), 31-49.

Mittermeier, R. A., Robles, G. P., Hoffmann, M., Pilgrim, J., Brooks, T., Mittermeier, C. G.… Da Fonseca, G. A. B. (2004). *Hotspots revisited*. Mexico: CEMEX.

Nordlund, A. M., & Garvill, J. (2002). Value structures behind proenvironmental behavior. *Environment and Behavior*, *34* (6), 740-756.

Ojea, E., & Loureiro, M. L. (2007). Altruistic, egoistic and biospheric values in willingness to pay (WTP) for wildlife. *Ecological Economics, 63* (4), 807-814.

Ölçer, S.Y. (2001). Turkey. In: Mallon, D.P. and Kingswood, S.C. (Ed.), *Antelopes. Part 4: North Africa, the Middle East and Asia, Global Survey and Regional Action Plans, IUCN/SSC Antelope Specialist Group* (pp. 112 -113).Gland, Switzerland and Cambridge, UK: IUCN.

Schultz, P. W., & Zelezny, L. C. (1998). Values and Proenvironmental Behavior A Five-Country Survey. *Journal of Cross-cultural Psychology, 29* (4), 540-558.

Schwartz, S. (2013). Value Priorities and Behavior: Applying. In *The psychology of values: The Ontario symposium* (Vol. 8). Psychology Press.

Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., Harris, M., & Owens, V. (2001). Extending the cross-cultural validity of the theory of basic human values with a different method of measurement. *Journal of Cross-Cultural Psychology, 32* (5), 519-542.

Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values? *Journal of Social Issues, 50* (4), 19-45.

Schwartz, S. H. (1992). Universal structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology, 25* (1), 1-65.

Schwartz, S. H., & Howard, J. A. (1981). A normative decision-making model of altruism. In P. J. Rushton, & R. M. Sorrentino (Ed.), *Altruism and helping behaviour: Social, personality, and developmental perspectives* (pp. 189-211). Hillsdale, NJ: Lawrence Erlbaum Associates.

Schwartz, S. H. (1977). Normative influence on altruism. In L. Berkowitz (Ed.), A*dvances in Experi-mental Psychology* (Vol. 10. pp. 222-275). New York, San Francisco, London: Academic Press.

Stern, P. C. (2000). Toward a coherent theory of environmentally significant behaviour. *Journal of Social Issues, 56* (3), 407-424.

Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A Value-Belief-Norm Theory of support for social movements: The case of environmentalism. *Research in Human Ecology, 6* (2), 81-97.

Stern, P. C., Dietz, T., Kalof, L., & Guagnano, G. A. (1995). Values, beliefs, and proenvironmental action: Attitude formation toward emergent attitude objects. *Journal of Applied Social Psychology*, *25*(18), 1611-1636.

Stern, P. C., & Dietz, T. (1994). The value basis of environmental concern. *Journal of Social Issues, 50* (3), 65-84.

Stern, P. C., Dietz, T., & Kalof, L. (1993). Value orientations, gender, and environmental concern. *Environment and Behavior, 25* (3), 322-348.

Şekercioğlu Ç. H., Anderson, S., Akçay, E., Bilgin, R., Can, Ö. E., Semiz, G., ... Dalfes, H. N. (2011). Turkey's globally important biodiversity in crisis. *Biological Conservation, 144* (12), 2752-2769.

Triandis, H. C. (1995*). Individualism and collectivism*. Boulder, CO: Westview.

Turan, N. (1977). *Ceylan (Gazella subgutturosa) Neslinin Korunması ve Geliştirilmesine Dair Rapor. [Report on the protection and development of the gazelles' generation].* Ankara, Turkey: T.C. Orman ve Su İşleri Bakanlığı Doğa Koruma ve Milli Parklar Genel Müdürlüğü Arşivi.

Turan, N. (1984). *Türkiye'nin Av ve Yaban Hayvanları Memeliler* [Turkey's hunting and wild animals mammals]. Ankara: Ar Yayınevi.

Van Weelie, D., & Wals, A. (2002). Making biodiversity meaningful through environmental education. *International Journal of Science Education*, *24* (11), 1143-1156.

Widegren, Ö. (1998). The New Environmental Paradigm and personal norms. *Environment and Behavior, 30* (1), 75-100.

Received: *August 28, 2015* Accepted: *October 20, 2015*

| | |
|---|---|
| ***Sevilay Dervişoğlu*** | Dr., Assistant Professor, Hacettepe Üniversitesi, Hacettepe Universitesi Eğitim Fakültesi, OFMA Bölümü. 06800 Beytepe/ Ankara, Turkey.<br>E-mail: sevilayd@hacettepe.edu.tr<br>Website: http://www.egitim.hacettepe.edu.tr/html/OzGecmis/ozgecmis_sevilaydervisoglu.html |
| ***Muhterem Tankuş*** | Dr., Teacher, Milli Eğitim Bakanlığı Urfa Anadolu Lisesi, Abide Kavşağı Yanı, Turkey.<br>E-mail: muhteremtankus@hotmail.com |