An Empirical Test of Techniques of Neutralization Regarding Polluting Behaviors in Rural Iran

Seyed Ahmad Mir Mohamad Tabar1 · Nigel South2,3,4 · Avi Brisman3,5,6 · Ali Akbar Majdi7

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Abstract

Environmental pollution is regarded as a major environmental crime in most countries; Iran is no exception. This study examines water and soil polluting behavior among villagers in Jimabad, Mashhad County—a rural area in the Razavi Khorasan province in the northeastern region of Iran. A survey questionnaire was used to collect data from a random sample of 315 respondents in the population of the villagers of Jimabad. This article reports on the levels of water and soil polluting behavior among the respondents and the results are discussed in terms of techniques of neutralization, religiosity and cultural context.

Keywords

Environmental crimes; green criminology; pollution; rural criminology; techniques of neutralization

* Seyed Ahmad Mir Mohamad Tabar

a-mirmohamadtabar@araku.ac.ir; ahmadmirtabar@gmail.com

Nigel South

n.south@essex.ac.uk

Avi Brisman

Avi.Brisman@newcastle.edu.au

Ali Akbar Majdi

majdi@um.ac.ir

1 Department of Sociology, Arak University, Arak, Iran

2 Department of Sociology, University of Essex, Colchester, UK

3 School of Justice, Faculty of Law, Queensland University of Technology, Brisbane, QLD, Australia

4 School of Social Sciences and Humanities, University of Sufolk, Ipswich, UK

5 School of Justice Studies, College of Justice and Safety, Eastern Kentucky University, Richmond, KY, USA

6 Newcastle Law School, Faculty of Business and Law, University of Newcastle, Callaghan, NSW, Australia

7 Department of Social Sciences, Ferdowsi University of Mashhad, Mashhad, Iran

Introduction

The planet and its human and nonhuman animal populations are facing an increasing variety of environmental challenges and problems. According to many commentators, air, soil and water pollution, climate change, destruction of animal habitats, extinction of flora and fauna, and shortage of natural resources are among issues which can be regarded as the environmental problems of the present age (Potter 2010; Brisman and South 2019a, 2020; Potter 2010). All these problems are increasing and unless serious measures are adopted to prevent them, the consequences will be irreversible.

Various forms of pollution have been linked to numerous human health problems, damage to ecosystems and significant socio-economic costs (Lu 2020; Science for Environment Policy 2018; White 2011). Green criminology is a suitable field to study the causes and consequences of these issues and related environmental crimes and harms affecting human and non-human life, ecosystems and the biosphere (Brisman and South 2019b, 2020b).

Although the study of environmental issues in criminology can be traced to examples in the 1970s and 1980s (see, e.g., Congres Francais de Criminologie 1979; Pečar 1981; for a discussion, see Goyes and South 2017), Lynch (1990) first coined the term 'green criminology'. The underpinning idea of a green criminology was to call for a new, different 'perspective' in both criminology and environmental studies (South 1998), applying this to the study of crime, harm and injustice related to the environment and to species other than humans (Beirne and South 2007; South 2014). Once seen as a relatively marginal area of study in criminology, green criminology's attention to environmental crimes and harms, and its efforts to generate increased awareness about topics, such as disposal of electronic wastes and the impacts of ecological and social inequalities regarding exploitation of nature, has meant that the field is now closer to and more respected by mainstream criminology (Lynch et al. 2013).

Environmental 'crimes' are, by definition, activities that violate the laws of society (Brickey 2008). But how laws are made, how they are applied, and the degree to which individuals, groups, organizations and states comply with them, are not straightforward.

1.1. Background to the study

Environmental crimes and the criminality of polluting behaviors are addressed in Iran's constitution and penal law. Article 50 of the Constitution of the Islamic Republic of Iran, adopted in 1979, is one of the major articles regarding the environment which, with an emphasis on the rights of future generations, deals with the issue of protecting the environment and the general public's responsibility in this regard. Iranian penal law contains twenty environmental laws, which define environmental crime as actions or omissions which lead to serious harm or damage to the environment and threats to human wellbeing. Acts that are regarded as threats to public health, such as disposing of toxic materials into rivers and garbage in the streets, illegal

slaughter of animals, illegal use of raw sewage or drained water from sewage refineries for agricultural purposes, polluting drinking water or distributing polluted drinking water, unsanitary removal of human and animal wastes, are legally prohibited and offenders may be sentenced to up to one year of imprisonment (Ghassemi 2011).

Despite these laws and potential punishments for environmental offending, instances of such crimes are quite common in Razavi Khorasan Province. For instance, Yasoori (2004, 2008) shows that unauthorized population settlements, improper exploitation of water resources and utilization of fertilizers and chemical pesticides and herbicides by farmers, are among the main causes of water and soil pollution in the city of Mashhad and its neighboring villages. As a result—and as findings of a study by Entezari (2014) demonstrate—the quality of groundwater, in terms of dissolved solids, overall water hardness (the amount of dissolved calcium and magnesium), chlorine, sodium, and sulfate content, declined in the years between 2002 and 2012. In addition, findings by Entezari (2014) suggest a significant relationship between deaths caused by cardiovascular diseases and the presence of chlorine.

The present study was designed to investigate water and soil polluting behavior among inhabitants of the village of Jimabad in this province and to consider the applicability of techniques of neutralization (Sykes and Matza 1957; see also Cromwell and Thurman 2003; Klockars 1974; Maruna and Copes 2017; Morris and Copes 2012; Topalli 2005; Topalli et al. 2014) in this context. According to Ghandehari (2018), agricultural activities in the city of Mashhad and its suburbs are a major source of water and soil pollution in the province and hence Jimabad was chosen for this study because the main occupation is farming.

Jimabad is one of the villages in the outskirts of the city of Mashhad in Razavi Khorasan Province in the northeastern part of Iran. According to national surveys (Ebrahimi 2011;

Khodayri 2009), Mashhad is one of the most religious cities in Iran and this is relevant because the Quran emphasizes the importance of protecting the environment and natural resources, and the responsibility to refrain from behavior that would disrupt ecological balance. Such destruction is a serious matter (Esmaili et al. 2007). Given the religious nature of the people of Mashhad and its surrounding villages—and because of Islam's requirements to protect the environment—we should expect the respondents in our study to be less engaged in destructive environmental behaviors. Nevertheless, environmental crimes do occur. The present study seeks to examine why this may be the case—specifically, whether individuals committing environmental crimes in a religious region of a Muslim country engage in techniques of neutralization, and the role of religion in this regard.

2. Literature Review: Rural criminology, Religiosity, and Neutralization

2.1. Polluting behaviors in rural areas

Rural criminology is essentially place-based and, obviously, focuses on rural locations and populations. These actually face a wide range of environmental crimes (Wyatt et al. 2018), such as the dumping of garbage, soil and air pollution, water theft, land and river 'grabbing', and unauthorized burning to clear land for cultivation (Ceccato 2015; Sosnowski and Petrossian 2020). Rural criminology has, however, suffered similar limitations to other areas of specialism within the field of criminology—at least, in terms of Northern or Western scholarship written in English. As Goyes and South (2020: 18-19) observe, although the definition of the 'rural' provided by major figures in the field like Donnermeyer and DeKeseredy (2013) can be broad and seemingly comprehensive, rural criminology reflects particular 'material and historical relations' and is 'primarily informed by observations of societies in the global north'. This means

that its utility still needs to be considered in terms of application to different settings, as in this case.

In general, criminology has been overly focused on urban environments (see Brisman and South 2014: 18n.8) and although rural criminology has addressed this to some extent, it has still tended to neglect peasant and Indigenous communities. At the same time, green criminology has developed surprisingly little work on rural issues (cf. Brisman, McClanahan and South 2014), although new directions would be worth pursuing and, for example, in the case of green cultural criminology, one possibility would be to build upon the practices of cultivation as, literally, one of the *roots* of culture. Cultivation provides food that becomes the basis of distinctive diets and cuisines—the heart of symbols, religions and rituals that is shared and creates social meanings and understandings. Crucially, the ways in which food is grown represents knowledge and practice that may remain fixed as tradition or modified over time, but that is handed down and passed on—it is, in fact, creating and sustaining culture.

Various studies from environmental sociology, as well as from criminology, report on polluting behaviors in rural areas and can be broadly divided into two types. The first group discusses the differences between polluting behaviors in rural regions when *compared* to urban areas. Laziková et al. (2015), using secondary data from Slovakia, found that environmental pollution occurs more often in rural than urban ones. Ceccato and Uittenbogaard (2013) showed that in Sweden, rural regions are, in general, more likely than urban locations to be sites of illegal handling of chemicals and any resulting environmental damage, as well as nature and wildlife crimes.

The second type of study generally focuses on polluting behaviors *specifically* in rural areas, for example, research by Hua et al. (2018) on residential solid fuel burning as the principal

source of aerosol pollution in the rural zone of Beijing, and Barclay and Bartel (2015) work on rural, small town environmental crimes in Australia involving disposal of chemical waste in nature, and water and soil pollution.

2.2. Religiosity and deviant/criminal behavior

Various criminological theories have proposed that stronger religious ties tend to reduce involvement in crime (Baier and Wright 2001). For example, rational choice theory claims that the certainty and severity of informal punishments increase deterrence of crime in religious people (Grasmick et al. 1991). In social control theory suggests that when individuals are bonded to conventional institutions of society, such as religion, they are less like to participate in crime (see, e.g., Hirschi (1969). Burkett (1993) argues that social learning theory and the processes of socialization and selection of religious peers through positive reinforcement can reduce the likelihood of crime. Finally, the theory of reference groups claims that if the community reference group is one of religious individuals, then this can shape attitudes and behavior regarding crime (Salvatore 2018).

Taken together, it might be expected that religious individuals are less likely to pursue deviant or criminal paths and employ techniques of neutralization if they do so. Significantly, however, some studies (Alexander 2017; Al-Khattar 2003; Bergen 2016; Sporer et al. 2019) show that some people may use religion to *justify* their criminal behavior. Topalli et al. (2012) claim that some criminals use biased and distorted narratives to justify criminal behavior and neutralize any deterrent effects that fear of negative consequences (such as divine punishment after death) typically creates.

2.3. Neutralization and Environmental Crimes

The design of the present study sought to test the applicability of Sykes and Matza's (1957) techniques of neutralization. This classic formulation of justifications for actions is a combination of pressure theory—which suggests that individuals are more likely to commit criminal behavior under pressure—and subcultural theory—which states that the deviant or criminal values characteristic of particular subcultures can be conducive to engagement in criminal behavior by their members (Brisman et al. 2017: 95; von Essen et al. 2014). With respect to applying this to explanations of environmental crimes, Jones et al. (2008) argue that for those involved, interaction with others, immersion in social conditions that support the committing of environmental crimes (e.g., poaching), and the learning of psychological defense mechanisms, can reduce their perception of the significance and consequences of such crimes (see also Eliason and Dodder 2000; Forsyth and Marckese 1993b; Mir Mohamad Tabar 2017; Neal and Walters 2007; Smith 2010). Criminals may use a set of techniques of neutralization before and/or after committing a crime to explain and justify their action and responsibility—and, perhaps, also shift the burden of responsibility onto others (Filteau 2012).

Two groups of studies relevant to techniques of neutralization can be outlined. The first considers motivations and rationalizations for committing environmental crimes. The second examines how techniques of neutralization underpin post-hoc justifications and denials regarding the committing of environmental crimes. In the first category, various studies—many from the United States (US)—have discussed the effect of socialization and background factors in relation to environmental offending. Eliason (2004) study investigated motivations and rationalizations offered by wildlife law violators in the Commonwealth of Kentucky in the US and categorized these in terms of: ignorance/forgetfulness/carelessness; poaching as a traditional right of use; recreational satisfactions; and financial profit. Forsyth et al. (1998) examined poacher

motivations in the state of Louisiana in the US and found both instrumental (money and survival) and affective (excitement and tradition) reasons for poaching, while another US study, by Muth and Bowe (1998), provided a typology of motivations for poaching described as: commercial gain; disagreement with specific regulations; gamesmanship; household consumption; poaching as rebellion; poaching as a traditional right; protection of self and property; recreational satisfactions; trophy poaching; and thrill killing. Other studies (such as those by Curcione 1992; Eliason 2003b; Forsyth and Marckese 1993a; Mir Mohamad Tabar et al. 2020, 2021; Uba and Chatzidakis 2016) noted the effects of socialization on environmental offending as based on the process of learning illegal behavior and techniques of neutralization from others engaging in such activities.

With respect to the second category, a study by Wyatt and Brisman (2017) found that significant vested economic interest in the environmental crimes committed led individuals to deny that any problems were caused by their crimes. Enticott (2011) study of the use of techniques of neutralization regarding wildlife crime in rural England and Wales found that farmers considered their legal offences and environmental violations to be *necessary*: most of them denied the necessity of the law and also 'condemned the condemners'. Enticott's (2011) findings illustrate how neutralization allows farmers to drift between deviant values and conventional social norms. Personal benefit and denial of responsibility were among the motives for poaching in Eliason (2003a) study of the neutralization of wildlife law violations in Kentucky, and interviews with illegal poachers and wildlife conservation officers indicated that other claims affecting illegal hunting and angling in Kentucky included a belief in entitlement and rights to wildlife exploitation, a defense based on personal need, and the denial of the necessity of observing environmental laws.

Overall, previous studies on neutralization and environmental crimes deal mainly with crimes related to illegal wildlife hunting, and the main narratives used have been based on the denial of responsibility, denial of injury and condemnation of the condemners to justify behaviors. Importantly, most of these earlier studies have adopted a qualitative, exploratory approach and very few survey studies have been carried out concerning the use of techniques of neutralization and environmental crime. This study therefore aims to make an original contribution on two counts—first, as a response to the criticism that green criminology as a field has tended to neglect the use of quantitative methodology (Lynch et al. 2017), and second, through the application of such an approach in a socio-economic and cultural context outside the usual Northern/Western orbit of criminology. While recognizing that there are strengths and weaknesses with the techniques of neutralization framework (Maruna and Copes 2005), it has been applied here to test its value and the validity of insights it may generate; the study is not designed to be a systematic critique of techniques of neutralization.

2.4. Religiosity, Neutralization and Tolerance of Environmental Harms

The results of various studies about the impact of religiosity on environmental harms and crimes can be divided into two categories. Some studies that show that being religious has a *negative* impact on the tolerance of environmental harms with, for example, Dietz et al. (1998) arguing that education, especially religious teachings that emphasize environmental sanctity, can increase environmental concern and reduce environmental harms. Findings of such studies show that being religious *increases* sustainable wildlife consumption and pro-environmental behaviors (Eom et al. 2021; Johnson et al. 2017).

Other studies, however, show that being religious can *increase* involvement in, or tolerance of, some forms of environmental harm or crime. Most studies about the impact of religiosity on

environmental crimes fall into this category and often relate to treatment of other species. A theology of domination, where humans have been given the role of naming animals and governing them (as in Christianity, Islam, or Judaism), means that animal protection may not receive high priority (Leary et al. 2016; Wolkomir et al. 1997). Although the highly religious may regard contributions to animal welfare as an objective in keeping with their spiritual beliefs, less- or non-religious individuals may place more importance on animals as part of consumer culture, providing diversity in the diet, as subjects of hunting traditions, or in terms of preserving the ecosystem for future generations. For example, Shao et al. (2021) stated that one of the reasons for hunting and smuggling wildlife in China is the use of animals in religious practices or exorcisms and thus some religious teachings can appear to justify committing environmental crimes as a necessary part of participation in religious ceremonies. Other previous research confirms that religiosity can have a negative relationship with the valuation of animals and animal-human continuity (the degree to which people view 'animals' and 'humans' as the same or completely different) (Templer 2006). Minton (2020:1731), for example, suggests that where the highest priority is accorded to relationships with God and with family, then those with a higher religious orientation may be more likely than those with a lower level to commit or be tolerant of crimes and harms against wildlife: 'this might be the case when pouring chemicals down a drain that flows into wildlife habitats because it is easier and allows more time to be spent with family in comparison to the time it would take to properly dispose of the chemicals.' The results of Minton's studies (2020) show that being religious can increase wildlife crime by negatively influencing human-animal beliefs. In this situation, people may find justifications for harmful or negligent actions in religious teachings. Therefore, it can be said that being religious

can reduce sentiments that see human and animal species as closely connected, and this reduction can provide grounds for the use of neutralization techniques.

3. Theoretical Framework

As noted above, green criminology has exposed and explored a wide range of environmental harms and crimes (Brisman and South 2019b, 2020), some of which are relatively hidden or invisible (Brisman 2014, 2018), while others are evident and well known (South and Walters 2020). In many cases, while the *impact* of the activities may be the most significant feature, what is also notable is the *repertoire of denials* of cause, responsibility and consequence or outcome. Hence, studies of 'strategic ignorance' (McGoey 2012), varieties of 'denial' (Cohen 2001), 'moral disengagement' (Bandura 1990), as well as techniques of neutralization (Sykes and Matza 1957), have been used to understand more fully the causes and consequences of excusing and justifying certain behaviors (e.g. Brisman and South 2015a, 2015b).

Maruna and Copes (2017: 127) observe that techniques of neutralization have been 'widely accepted and researched in criminology', and that research on the theory has typically occurred in two forms: qualitative methods have been used to illustrate how neutralizations are employed by deviant actors, providing insights into how such offenders understand and make sense of their crimes; and quantitative assessments (usually involving questionnaires) have identified a weak, but positive, acceptance or use of neutralizations and participation in delinquency. Despite the popularity of the techniques of neutralization approach, as Maruna and Copes (2017: 128) make clear, 'researchers have offered few theoretical advancements for it, other than adding to the list of neutralizations'. Nevertheless, they contend that a major refinement of the idea has been that 'neutralizations are not limited to violations of conventional norms' (Maruna and Copes 2017: 128), and thus it can be illuminating to analyze harmful

behavior that is not covered by criminal law or even strong regulatory responses. As Dodder and Hughes (1993) summarize, when using such techniques, individuals do not necessarily dismiss the prevailing ethical or normative principles of their society; indeed, they accept them. At the same time, however, they resort to temporary justifications for their behaviors which are against these norms and values. This insight may be particularly relevant to cases of highly religious communities, as in this study. Using techniques of neutralization to obviate the ethical necessity to abide by the law, 'delinquents' and others who 'deviate', find themselves in a state of 'entanglement' where either a legal or a delinquent action will be chosen (Matza 1964).

'Entanglement' happens when social controls are weakened or undermined, no longer proving effective in averting certain behaviors. In such cases, individuals may commit crimes untroubled by consequences because violation of the commands of the normative system, in spite of being incorrect, seems acceptable (Sykes and Matza 1957). Opinions diverge regarding whether justification and neutralization needs to occur *before* or *after* an action (see Maruna and Copes 2017). Sykes and Matza (1957) believe individuals may employ neutralization techniques both before and after committing criminal behaviors. According to Hindelang (1970), neutralization happens mostly *after* an action, while Hirschi (1969) states the process might begin following the evaluation of gains and benefits for an individual but happens *in* action. Maruna and Copes (2005, 2017) offer broad support for Hirschi's position and suggest that techniques of neutralization can be regarded as a theory that is most useful in terms of understanding persistence of, or desistance from, criminal behavior. Persistence is more likely when individuals accept the basis of the neutralization account and desistance when such a narrative is dismissed.

As Maruna and Copes (2005: 223) note, 'neutralization theory has "universal applicability" (Hazani 1991: 135), as it can be applied to any situation where there are inconsistencies between one's actions and one's beliefs'. It is therefore unsurprising but, according to Maruna and Copes 2005: 244), 'unfortunate' that 'the criminological community appears largely satisfied with the five rationalizations listed by Sykes and Matza and has not prioritized systematic analysis of the subjective worlds or belief systems of criminal actors'. At least a partial way of addressing this deficiency can be achieved by conducting studies that provide a *comparative* basis for discussion of 'subjective worlds and belief systems'. This is what our study has attempted to achieve.

Before turning to our study, we first review the techniques of neutralization:

3.1. Denial of Responsibility

Rule-breakers evade responsibility by claiming that their action was accidental or that they were forced to do what they did and, therefore, whatever occurred was beyond their control. For example, government officials deny responsibility for criminal activities relating to administrative affairs, arguing that rules are complex, vague or open to (mis)interpretation, or that their criminal behavior was not intentional but accidental, their role was very small, or they were compelled to commit certain acts under pressure from senior figures (Williams 2013).

3.2. Denial of Injury

Using this technique, offenders adopt the position that 'no harm is really done'. Thus, for instance, an offender might contend that theft is 'borrowing' and affray is a kind of minor 'personal dispute' (Marsh 2006). Shoplifters might claim that a store can 'afford it', if it notices the theft at all.

3.3. Denial of the Victim

With this technique, offenders may assert that their violations of the law do not, have not, or did not result in damage or harm to a human victim (such as with many environmental crimes). Alternatively, offenders might acknowledge that their actions may have caused some damage or harm, but they contend that such actions are simply a reasonable *re*-action or a just punishment for the behaviors of the 'victim' (Hinduja 2007).

3.4. Condemnation of the Condemners

The fourth neutralization technique involves condemning those who are in a position to condemn and denounce violations of the norms of the society. Lawmakers and enforcers are hypocrites, hidden deviants or biased. Here, criminals shift from reflecting on and thinking about their own actions to emphasizing the actions of others and, in doing so, display their actions as insignificant or unimportant—a defense which they believe needs to be considered by administrative and legal authorities (Sykes and Matza 1957). Thus, an offender, upon being arrested, might exclaim, 'Who are you to condemn me? The entire police department is corrupt….'

3.5. Appealing to Higher Loyalty

Here, offenders claim that their actions incorporate some sort of (ethical) commitment to a specific group to which they belong. Regardless of being conversant with legal norms—and because of being compelled by a higher loyalty—the deviant or delinquent commits a crime in *conformity with* the commitments and beliefs of the higher group and maintains loyalty to them. In other words, prevailing demands and norms of society are sacrificed to meet the expectations of a small group or leader figure (Morris and Higgins 2009). This technique is often employed by individuals working for large and powerful corporate entities, where loyalty to the corporation or business entity may be valued—or even expected—over adherence to the law.

3.6. Claim of normalcy

Maruna and Copes (2017: 127) point out that '[d]espite the popularity of [the techniques of neutralization], researchers have offered few theoretical advancements for it, other than adding to the list of neutralizations'. Be that as it may, it is worth acknowledging that ideas about the widespread and everyday incidence of deviance as a source of justification for 'joining in' have been explored from Emile Durkheim to Mary Douglas and expressed as the claim of 'normalcy' by Henry (1990) and others. Thus, offenders may claim that their actions are also committed by many or most people around them and due to the numerous repetition of such actions, they should neither be regarded as deviant nor be punished. To justify what they do, delinquents say, look around—everyone is doing it—'*everyone* has a con' or '*everyone* has a racket'.

In addition, other neutralization techniques, such as self-deception and normalization of 'condemning the condemners', have been introduced. McGrath (2021) claims that self-deception enables white-collar criminals to exploit legal ambiguities in organizations to justify illegal activities, and, for example, use subjectively distorted narratives of events to keep secrets and hide their guilt. In cases of normalization of the 'condemning the condemners', Pontell et al. (2021) states that some politicians and presidents frequently condemn the condemners in order to exacerbate partisan and political divisions and influence supporters to ignore government crimes and corruption and to accept new moral narratives that fly in the face of essential proof of criminality.

With this theoretical framework in mind, we present our hypothesis for this study: 'techniques of neutralization positively affect the polluting behaviors of villagers in Jimabad'.

4. The current study

The distinctive features of this study are that: first, it addresses the neglect of quantitative studies in green criminology (Lynch et al. 2017); second, it explores the significance of religiosity; third, it bridges green and rural criminologies (Brisman et al. 2014); fourth, it adds to the literature on techniques of neutralization, denial and environmental crime (Brisman and South 2015a, 2015b; Wyatt and Brisman 2017); and, fifth, it responds to the call for international criminology to reflect upon and address cultural bias (Goyes and South 2017; van Swaaningen 2021)—in this case by gathering and presenting data from a Muslim country.

4.1. Method

Our study employed a survey questionnaire for data collection. The research population consisted of inhabitants of the village of Jimabad in Mashhad County. According to the Statistical Yearbook of Iran (2017), the village of Jimabad had a population of 5198 people. Using Cochrane's sample size formula, a sample size of 315 was determined. The data were gathered in the spring of 2018 and participants were selected through simple random sampling. After discarding incomplete questionnaires, 309 questionnaires were used in the analysis. In the following section, conceptual and operational definitions of the research variables are provided:

4.2. Water and Soil Polluting Behaviors:

As described above, the criminalization of water and soil contamination is reflected in Islamic Penal Law. Based on the laws related to pollution of the environment in Iran and other exploratory studies of water and soil polluting behaviors by one of the authors, eight (8) questions were asked of the respondents—for example, regarding the degree to which they engage in behaviors that would pollute a river or brook, such as disposing of household waste or household sewage, or dumping containers of agricultural fertilizers, pesticides or herbicides, and

substances (e.g., diesel, gasoline, motor oil). The statements were rated on a five-point Likert scale: 'never, rarely, sometimes, usually, and always'. Categorization and the overall design of the questions were guided by Barclay and Bartel (2015) and Centner et al. (2014). A summary is shown in Table 1.

4.3. Techniques of Neutralization

The variable of techniques of neutralization was constructed using the approach of Sykes and Matza (1957). This item was operationalized, as informed by research in this field, and as discussed above. The statements were rated on a five-point Likert scale: 'completely disagree, disagree, neither agree nor disagree, agree, completely agree'. Summary statistics are shown in Table 2.

To establish the validity of the present study, we used content validity and construct validity (through factor analysis). Content validity determines the validity of the indicators of the research. Based on review of the relevant literature, the items of the questionnaire were representative of the concept being studied. In addition, we used exploratory factor analysis to statistically identify and establish the validity of the scales. The results of exploratory factor analysis are shown in Tables 1 and 2.

4.4. Validation of Water and Soil Polluting Behaviors Scale

Eight items were used to measure this concept. The validity of the scale was established by conducting a factor analysis of each dimension (Unidimensionality Test). After performing the Kaiser-Meyer-Olkin (KMO) test for sampling adequacy, which is a prerequisite for factor analysis, eigenvalues of different items and their loadings were investigated.

[Table 1. Varimax-rotated matrix for the Water and Soil Polluting Behaviors Scale]

To assess the suitability of the data for factor analysis, the KMO test was used. The value of Bartlett's test for water and oil polluting behaviors scale was equal to 0.938, which is acceptable.

In addition, using Bartlett's test of sphericity, X^2 was estimated to be 1949.3 which is significant at a .000 level. Therefore, factor analysis can be used to identify the dimensions of this scale. The eigenvalue obtained from factor analysis (which is equal to 5.88) indicates that in analyzing this variable, only one factor exists. In addition, overall, this factor can explain nearly 73.6 percent of the variance in water and soil polluting behaviors. As can be seen in Table 1, items loaded on a single factor (after rotation) can explain most of the variance. The satisfactory Cronbach's alpha for this variable is indicative of an acceptable reliability.

4.5. Validation of Neutralization Techniques Scale

To measure this concept, twenty-two items were used. The validity of the scale was established by conducting a factor analysis of each dimension (Unidimensionality Test).

[Table 2. Varimax-rotated matrix for neutralization techniques]

To assess the suitability of the data for factor analysis, Bartlett's test was used. The value of the KMO test for the techniques of neutralization scale is equal to 0.922, which is acceptable. In addition, using Bartlett's test of sphericity, X^2 was estimated to be 2972.5, which is significant at a .000 level. Therefore, factor analysis can be used to identify the dimension of this scale. The eigenvalue obtained from factor analysis (which is equal to 11.9) indicates that this variable is comprised of six factors. Overall, these factors explain nearly 86.46 percent of variance in techniques of neutralization. As can be seen in Table 2, items loaded on the 6 factors (following rotation) explain most of the variance. The suitable value of Cronbach's alpha for these dimensions is indicative of their acceptable reliability.

4.5. Control Variables

Gender, age, marital status, number of family members, income, education and amount of farmland were used as control variables. Gender was specified as (1) male and (2) female. Age was measured using biological age. Marital status was specified with (1) standing for married;

(2) for single; and (3) for divorced or widowed. Education was measured by the number of years of formal education. Monthly income, number of family members and amount of farmland were actual counts.

The results of various other studies (Beausang et al. 2017; Liu et al. 2019) indicated that a high number of family members, income, and farmland area, leads to more consumption and production of waste (the production of more waste provides one key element of the conditions for polluting behavior), so these variables were selected as control variables in this study. The reason for emphasizing these control variables is to illuminate differences between the respondents and their importance at different levels of these variables. For example, due to the special characteristics of Iranian society, such as gender segregation in school and different Islamic recommendations for men and women or married and single people, socialization processes will be different according to gender or marital status. Differences in education, income, and farmland level can differentiate the respondents' socialization processes. These different socialization processes affect the extent and method of use of neutralization techniques in relation to environmental pollution. The results of some studies (e.g., Morris et al. 2009; Vieraitis et al. 2012) show that the effect of neutralization techniques on criminal behaviors varies according to demographic variables such as gender. In this study, we try to investigate the effect of neutralization techniques on water and soil pollution by controlling some variables.

4.6. Plan of analysis

Statements from open-ended questions were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 22. Linear regression analysis was used to determine the degree of impact of control variables (age, marital status, income and education) and

independent variables (dimensions of the neutralization techniques variable) on polluting behaviors. The results from the linear regression analyses were reported as standardized coefficients (beta coefficients) and level of statistical significance.

5. Limitations

Normally, the 'Limitations' part of an article is placed after the 'Findings'. Due to the nature of our study, we find it helpful to present them before our 'Findings'. This study has several limitations. Green criminology has not used techniques of neutralization very much and more empirical studies are needed. Another deficiency is that several neutralizations were not covered, for example, 'metaphor of the ledger', 'denial of negative intent' and 'claim of relative acceptability'. Furthermore, this study is limited only to one village, which cannot be considered representative of Iranian society as a whole. Because the research design was cross-sectional, the study contains problems such as causal ordering and absence of control for prior polluting behaviors. The quantitative survey method used also cannot explain *the reasons* for using techniques of neutralization in the same way that qualitative studies might. Finally, the religiosity variable was not focused on in this study, so the discussion of the relationship between religion and the use of techniques of neutralization is not based on analysis of the quantitative data, although this could be the subject of a future study.

6. Findings

In the study population, 69.6 percent of the respondents were male and 30.4 percent were female; average age was 43 years. Nearly 84 percent were married, one percent were single and another one percent were widowed or divorced. On average, they had received 8.6 years of formal

education and had a monthly income of US$1000. On average, they farmed 4.5 hectares of land and families consisted of nearly 5.5 members.

According to the results shown in Table 3, the average for the variable of water and soil pollution is equal to 13.41, which considering the maximum and minimum scores is a low level. Among the questions related to this variable, the highest score belonged to 'throwing household waste in the river and brook', with an average of 1.83 and the lowest belonged to 'leaving substances such as motor oil, diesel and gasoline in the river and brook', with an average of 1.52.

[Table 3. Description of the questions related to the variable for water and soil polluting behaviors]

The results of Table 4 show that 'condemnation of the condemner', with a score of 11.98, has the highest average score among the dimensions of techniques of neutralization. It is followed by 'denial of injury', with an average of 10.3. Considering the minimum and maximum scores, the average score of these two dimensions stands at an average level. Considering the minimum and maximum scores, the averages of other dimensions of this variable are at a low level.

[Table 4. Description of the dimensions of the neutralization techniques variable]

According the results of Model 1 in Table 5, dimensions of 'denial of responsibility', 'appeal to higher loyalties', 'denial of the victim' and 'claim of normalcy' have a positive, significant effect on the variable of water and soil pollution. Adding control variables to the model (Model 2) lowers the coefficient of 'denial of responsibility' but increases the coefficients of 'appeal to higher loyalties' and 'claim of normalcy'. In addition, the effect of 'denial of victim' is no longer significant. For instance, the coefficient of 'denial of responsibility' is reduced from 0.357 in model 1 to 0.307 in Model 2. The coefficients of 'appeal to higher loyalties' and 'claim of normalcy' increase from 0.225 and 0.155 in Model 1 to 0.295 and 0.163 in Model 2, respectively. Among control variables, the variable of number of family members has a positive,

significant effect on the variable of water and soil pollution. That is, as the number of family members increases, the average water and soil pollution related to the family also increases. The explained variance for the variable of water and soil pollution (Adjusted R^2) decreases from 0.584 in model 1 to 0.539 in Model 2.

[Table 5. Standard regression coefficients for the effect of dimensions of neutralizations techniques on water and soil pollution variable]

7. Discussion and Conclusion

The main objective of the present study was to investigate factors contributing to the critical status of water and soil pollution in the village of Jimabad in Mashhad County—a rural area in the Razavi Khorasan province in the northeastern region of Iran. The research hypothesis was based on the positive influence of the techniques of neutralization on water and soil polluting behaviors. We expected that individuals would engage in such actions and that they would provide justifications for their criminal behavior based on use of techniques of neutralizaton. The findings of the research are indicative of the effect of some techniques of neutralization (such as 'denial of responsibility', 'appeal to higher loyalties', and 'claim of normalcy') on water and soil polluting behaviors among inhabitants of the village of Jimabad.

Use of such techniques or denial usually takes place in a context where there can be a reasonable expectation of awareness of the effects of the 'neutralized' behaviors or actions. As Thiel (2015: 260) points out, 'In Sykes and Matza's original work … the meaning of denial is taken-for-granted and un-examined'. In contrast, in his work on denial and human rights, Cohen (2001) shows that, in fact, a state of denial 'implies not simply non-knowledge of something wrong, injurious or upsetting' but also 'a simultaneous condition of both knowing and not knowing.' For Cohen (2001), this is the 'denial paradox'—meaning that in order to 'evade the

knowledge of something, we must have some knowledge of what to evade. For denial to occur, then, at least a partial knowledge must exist but this is somehow not attended to or fully acknowledged'. In recent years, mass media and environmental nongovernmental organizations have warned of the devastating effects of waste and environmental pollution in rural areas in Iran (Sojasi and Jalali 2018). Those responsible for polluting the environment may feel they have had limited choices—for example, poverty may make alternative courses of action difficult—but that they must balance this with awareness of social, moral and legal discouragement. To then engage in environmental deviance makes the use of techniques of neutralization attractive in order to reduce feelings of guilt or shame.

Most of these individuals, by denying responsibility, appealing to a higher loyalty (such as to friends, which is a kind of projection), and the claim of normalcy, tried to place the responsibility of their polluting behaviors on *other individuals* or some other influential factor and, therefore, lessen their guilt. In the study, the lack of significant effect of some techniques of neutralizations (denial of injury and victim) can be explained by the religiosity of the respondents. In general, Islam emphasizes certain principles, such as observing justice, avoiding oppression of or harm to others, paying attention to the rights of people, and following the laws of religious experts and leaders. In terms of the environment, Islam refers to the observance of principles, such as environmental justice, security and avoidance of environmental and ecological harm (Esmaili et al. 2007), and the results of some studies in Iran (Kalantari 2016; Navah 2011) show that religiosity has a positive and significant effect on environmental concerns and pro-environmental behaviors. Due to the religiosity of the respondents and Islam's emphasis on respecting the rights of others and not harming the environment, some techniques of neutralization, such as 'denial of injury' and 'denial of the victim', do not have a significant

effect on polluting behaviors. Religious people do not use these techniques to justify their deviant behaviors or to avoid informal punishments.

The reason for the significant use of other techniques of neutralization (such as 'denial of responsibility', 'appeal to higher loyalties', and 'claim of normalcy') can be associated with the recommendations of Islam and a misunderstanding by the followers of these recommendations. These techniques are used mostly in ways that invoke the norms of friendship (appeal to 'higher loyalties' and 'denial of responsibility') and social harmony ('claim of normalcy') that are emphasized in Islam. Islam does, indeed, urge followers to accompany other adherents in their conventional activities (Faghor 2009), but the respondents in this study have used the significance of norms of friendship and harmony with others as a basis for excusing unconventional activities such as polluting behaviors. These results are consistent with other studies (Alexander 2017; Bergen 2016; Sporer et al. 2019) that reported biased and distorted narratives of religious teachings being employed to justify criminal behavior.

One major contribution of this study is that it has tested the techniques of neutralization in a different social environment and on a different type of deviant behavior to the usual contexts—overwhelmingly, in the Western, Global North—reported in the literature. In addition, choosing Iranian villagers in a rural area, as we have, introduced the dimensions of rurality and religion. People in different societies may differ in their subjective interpretation of techniques of neutralization because of cultural differences. In this study, the applicability of the theory is tested in a Muslim country, Iran, which has a completely different social structure than other countries. While theories developed in one society may apply to other societies, regardless of geographical location, the social and normative context needs to be emphasized and understood. It is the significance of *culture* in shaping processes and narratives that must be noted (Maruna

and Copes 2005: 244-5), underlining the need for studies that explore social contexts and gather original data from beyond the usual sites of research in Northern/Western countries and communities.

Compliance with Ethical Standards:

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Table 1. Varimax-rotated matrix for the Water and Soil Polluting Behaviors Scale

No.	*Item*	*Factor 1*
1	throwing household waste (fruit peel, drink containers, disposable containers, etc.) in the rivers and brook	0.783
2	leaving household sewage in the river and brook	0.846
3	throwing containers of agricultural fertilizers, pesticides or herbicides in the river and brook	0.853
4	leaving substances such as motor oil, diesel, or gasoline in the river and brook	0.890
5	throwing household waste (fruit peel, drink containers, disposable containers, etc.) in streets	0.871
6	leaving household sewage in streets	0.852
7	throwing containers of agricultural fertilizers, pesticides or herbicides in streets	0.897
8	leaving substances such as motor oil, diesel, or gasoline in streets	0.867
	Eigenvalues	5.88
	Percentage of variance explained by each factor	73.6
	Cornbrash's alpha	0.974

Table 2. Varimax-rotated matrix for neutralization techniques

Dimensions	*Item*	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*	*Factor 5*	*Factor 6*
Appeal to higher loyalty	Loyalty to my friends is more important than following environmental laws to me	0.735					
	To win the approval of my friends, I am willing to throw garbage in the streets or river.	0.822					
	Most of my friends leave motor oil, diesel, or gasoline in streets and river.	0.672					
	I spend most of my time with my friends who do not care about environmental laws.	0.712					
Denial of responsibility	When people around me throw garbage in the streets or rivers, I cannot do otherwise.		0.667				
	My friends encourage me to throw garbage in the streets and river.		0.695				
	I always leave substances such as motor oil, diesel, or gasoline in the streets and river because my friends do the same.		0.837				
	Throwing motor oil, diesel, or gasoline in the streets and river is due to lack of time.		0.730				
Condemnation of the condemners	Environmental laws are always cumbersome			0.648			
	Some environmental laws are useless and should not be followed.			0.721			
	Law enforcement institutions (such as the police and department of environment) are always picking on people without any reason.			0.677			
	Law enforcement institutions (such as the police and the department of environment) do not follow the law themselves.			0.701			
Claim of	Most people in the region throw their				0.732		

Dimensions	*Item*	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*	*Factor 5*	*Factor 6*
normalcy	garbage into the streets and river.						
	It is not unusual in this region to leave garbage in the streets and river.				0.810		
	When most people in the region leave the containers of agricultural fertilizers, pesticides or herbicides in the streets and river, I can do the same.				0.754		
	Leaving sewage in the streets and river does not harm anyone.					0.701	
	If it does not hurt anyone, throwing containers of agricultural fertilizers, pesticides or herbicides is not an improper action.					0.541	
Denial of injury	Using agricultural fertilizers, pesticides or herbicides to increase the yield is a good.					0.816	
	Not collecting the containers of agricultural fertilizers, pesticides or herbicides, due to lack of time, is not a bad.					0.633	
	People who throw garbage in the street or river should not be criticized for that.						0.719
Denial of the Victim	People who throw garbage in the street or river should not be punished.						0.626
	People who do not collect their garbage from the street or river due to lack of time should not be penalized.						0.692
	Eigenvalues	3.85	3.18	1.57	1.12	1.10	1.08
	Percentage of the variance explained by each factor	30.14	22.18	12.07	8.35	5.77	4.95
	Cronbach's alpha	0.849	0.851	0.738	0.666	0.650	0.828

Table 3. Description of the questions related to the variable for water and soil polluting behaviors

Items	***Mean***	***Standard Deviation***	***Minimum***	***Maximum***
leaving household waste in the river and brook	1.83	1.16	1	5
leaving household sewage in the river and brook	1.68	1.12	1	5
throwing containers of agricultural fertilizers, pesticides or herbicides in the river and brook	1.67	1.11	1	5
leaving substances such as motor oil, diesel, or gasoline in the river and brook	1.52	0.96	1	5
Leaving household waste in the street	1.7	1.08	1	5
leaving household sewage in the river and brook	1.72	1.08	1	5
throwing containers of agricultural fertilizers, pesticides or herbicides into the street	1.61	1	1	5
leaving substances such as motor oil, diesel, or gasoline in the streets	1.6	1.06	1	5
water and soil polluting behaviors variable	13.41	7.3	8	40

Table 4. Description of the dimensions of the neutralization techniques variable

Dimensions	***Mean***	***Standard Deviation***	***Minimum***	***Maximum***
Condemnation of the Condemners	11.98	3.66	4	20
Denial of responsibility	8.83	3.95	4	20
Appeal to higher loyalty	9.16	3.79	4	20
Denial of injury	10.3	3.27	4	20
Denial of the Victim	6.72	3.22	3	15
Claim of normalcy	7.52	2.83	3	15

Table 5. Standard regression coefficients for the effect of dimensions of neutralizations techniques on water and soil pollution variable

Dimensions of the independent variable	***Model 1***	***Model 2***
Condemnation of the Condemners	0.081	*0.023*
Denial of responsibility	0.357**	*0.307***
Appeal to higher loyalty	0.225**	*0.295***
Denial of injury	0.044	*0.027*
Denial of the Victim	0.120*	*0.120*
Claim of normalcy	0.155*	*0.163**
Control variables		
age		*0.012*
Education		*0.022*
Income		*0.066*
Number of farmland		*0.055*
Number of family members		*0.132**
Gender (1 = male)		*0.080*
Marital status (1 = married)		*0.002*
R^2	0.595	*0.590*
Adjusted R^2	0.584	*0.539*
F value	54.02**	*10.18***
N	309	*309*

*p < .05, **p <.01.