Empathy, conformity, and cultural factors related to aberrant driving behaviour in a sample of Urban Turkish drivers

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A B S T R A C T

Few previous studies using the Driver Behaviour Questionnaire examined the link between reported driver behaviour, social influence and cultural factors. The aim of this study is to examine the role of empathy and conformity traits, as well as cultural individualism/collectivism and uncertainty avoidance, for aberrant driving behaviours in a sample of Turkish urban drivers. This questionnaire survey is based on a sample consisting of 179 drivers obtained in Izmir and Istanbul. Results showed that the traits and cultural factors were associated with driving violations and errors. The ability to conceive the emotions of others (empathy) was related to lower levels of reported driving errors and violations, whereas a tendency to amend behaviour in line with behaviour of others (conformity) was related to higher levels. Avoiding uncertainty also had a relation to more reported error conduct. Vertical individualism (striving to be distinct and for social status) was associated with higher levels of driving errors and violations, while vertical collectivism (striving for social equality and hierarchy) was related to lower levels of driving violations. The findings highlight the social pressure from other drivers to commit driving violations, and suggest that interventions aimed at reducing aberrant driving behaviours in urban Turkish settings should focus on increasing drivers' resistance to this pressure. Interventions may also benefit by stressing a more compromising and collaborative driving approach, educating drivers in stress management, and targeting specific groups and types of violations.

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1. Introduction

Traffic-related mortality is an important issue for public health worldwide, but the prevalence is substantially higher in developing countries, which have more congested traffic systems (Peden et al., 2004). In 2010, for instance, the fatality rate per one million vehicles was 381 in Turkey, while the average OECD rate was about 100 (OECD, 2010). Several safety factors may influence the high traffic fatality rates in Turkey, such as an underdeveloped traffic infrastructure, a lack of strictly enforced traffic regulations, and a congested traffic environment. However, it is broadly acknowledged that aberrant driver behaviours also relate to accident involvement, and that reported aberrant driver behaviours could serve as a proxy for drivers with elevated risk of being involved in accidents (Iversen and Rundmo, 2004; Parker et al., 1995; Rothengatter, 1997; Sümer, 2003). The majority of the Turkish population

lives and drives in urban environments with highly congested traffic environments. The present study aims to provide insights into the relative role of empathy, conformity and cultural factors in aberrant driving behaviours in a sample of Turkish urban drivers.

Previous studies that examined precursors of aberrant driving behaviours focused on crucial factors such as demographics (Dobson et al., 1999; Jonah, 1986; Xie and Parker, 2002), attitudes towards traffic safety and risk perception (Iversen and Rundmo, 2004; Ulleberg and Rundmo, 2003), and use of distracting devices such as cellular phones (Alm and Nilsson, 1995; Haigney et al., 2000). Although some studies examined risk traits in relation to aberrant driving behaviours, such as aggression and anger (Lajunen et al., 1998), and sensation seeking and normlessness (Iversen and Rundmo, 2002; Ulleberg and Rundmo, 2003), very few studies have examined how empathy and conformity traits relate to aberrant driving behaviours. Empathy and conformity traits are crucial factors in social interaction, and may be important for aberrant driving behaviours because to a large extent driving is a behaviour taking place in a social context (Hattaka, 1998). Both these traits could influence drivers' tendencies to collaborate with, or imitate the behaviours of other drivers in the traffic system.

Empathy trait may be defined as a factor that predisposes individuals with a certain ability to conceive the emotional states of others and to adjust their own emotions in line with those of others (Eisenberg and Miller, 1987). Studies suggested that empathy is a relatively stable trait over time, and may be linked to variations in genetic predispositions (Kogan et al., 2011). It is expected that individuals scoring high on the empathy trait are less likely to conduct driving violations than lower-scoring drivers, because the former may be more sensitive to the behaviour of other drivers, and have a greater ability to interpret their emotions and behavioural intentions in the traffic system. Intriguingly, however, Owsley et al. (2003) reported that elderly drivers with high empathy scores reported more error conduct than drivers reporting lower scores on this trait; empathy had no significant association with driving violations in this study.

The conformity trait may be conceptualized as a tendency to amend behaviour in line with the behaviours and responses of others. People scoring high on this trait often seek approval from others, and are usually motivated to establish an accurate perception of the surroundings and to behave in accord with this perception (Cialdini and Goldstein, 2004). The role of conformity for aberrant driving behaviour is rather unclear, as studies that have examined this association remain scarce. On one hand, one could argue that drivers with a strong conformity tendency are more likely to comply with traffic regulations. On the other hand, drivers in this category may submit to social pressure from other drivers and thereby be expected to violate regulations. A commonly observed driving behaviour in Turkish urban road traffic, for instance, is that drivers exert social pressure upon slower drivers (e.g. by sounding the horn or driving very close) in order to create pressure to increase speed.

Similarly to traits, culture may be relatively stable over time and could also relate to aberrant driver behaviours. Trait and cultural factors have often been studied in separation, but the present study aims to integrate these perspectives and examine them in parallel. Several previous studies have investigated aberrant driving behaviours and other traffic psychological factors across countries (e.g. Nordfjærn et al., 2011; Nordfjærn and Rundmo, 2009; Şimşekoğlu et al., 2013; Warner et al., 2011; Özkan et al., 2006). However, a common limitation of these studies is that culture was not conceptualized within a theoretical framework and therefore cultural factors were not measured in line with cultural theory.

There are several possible theoretical approaches that may aid in measuring culture at an individual level among people within a country. The traditional approach within risk research has been to conceive culture as 'social organization' (Douglas, 1970; Douglas and Wildavsky, 1982). This framework argues that culture could be approached in terms of differences in how people perceive the surrounding environment (e.g. the tightness of bounds between people, desired level of hierarchy and social control). Some researchers argued that this theory may predict how people approach risk (Wildavsky and Dake, 1990), but this assumption has received weak empirical support (Marris et al., 1998; Oltedal and Rundmo, 2007). An alternative way of conceiving culture is to define it as differences in how people communicate by symbols (Geertz, 1973) and the relative importance drivers attribute to symbol exchange in the traffic system, such as writing, visual illustrations and sounds. This approach has been tested in relation to driver behaviours (Rundmo et al., 2012), but the ability of the framework to explain variance in driver behaviours is rather limited. Consequently, it could be argued that the cultural theories developed within the humanities have limited capability to predict aberrant driving behaviours. These theories may have stronger theoretical than empirical foundations, and as such alternative approaches to culture are needed.

In the present study we operationalize culture by its consequences on psychological constructs such as attitudes, values and beliefs (Hofstede, 1980). This framework has a strong empirical tradition and several attempts to measure culture using this theory have been made in recent decades (e.g. Hofstede, 1983; Singelis et al., 1995; Triandis, 1995). Individualism (i.e. perceiving the self as separated from others and to consist of unique attributes) and collectivism (i.e. perceiving the self as belonging to a larger group) are two of the core constructs within this theory (Markus and Kitayama, 1991). Furthermore, these two constructs may be delineated into vertical and horizontal dimensions (Singelis et al., 1995). Those who report vertical individualism conceive the self as different and distinguished from others, they usually perceive themselves to be in competition, and an important social goal is to gain higher status in the hierarchy. Horizontal individualism also fosters a tendency of conceiving the self as separated from others, but generally puts less emphasis on competition and the individual position in the social hierarchy. People reporting high vertical collectivism tend to focus on the self in relation to others, while showing a high degree of deference to the authorities in the in-group. Individuals with high horizontal collectivism also tend to perceive the self in relation to other people, but to a lower extent submit to authorities in the in-group. In addition to the individualism/collectivism dimensions, we also included the uncertainty avoidance component of the theory in the present study. Uncertainty avoidance refers to a tendency to feel uncomfortable and anxious when faced upon ambiguous and unpredictable situations.

We are not aware of studies that have linked the two dimensions of collectivism and individualism to aberrant driving behaviour. Meanwhile, there are reasons to expect that the two types of collectivism and individualism as well as uncertainty avoidance could be related to aberrant driving. Collectivism is a cultural tendency where individuals seek a strong sense of community and tend to have a collaborative approach when exposed to conflict (Souren et al., 2004). This could translate into other social situations, such as traffic, and facilitate more collaboration and lower levels of aberrant driving behaviour. On the other hand vertical individualism could be expected to facilitate higher levels of aberrant driving behaviour, because this cultural tendency is characterized by a more competitive approach to conflict and lower willingness to collaborate and compromise than the two dimensions of collectivism. Although generalization across different risk domains should be undertaken with caution, previous studies have suggested that vertical individualism is a specific risk factor related to, for instance, risky sexual behaviour (Le and Kato, 2006). Regarding uncertainty avoidance, this cultural tendency is linked to elevated stress and anxiety (Özkan, 2006). The stress and anxiety produced by uncertainty may in turn increase aggression and hostility (Merkin, 2006), two emotional factors which have been related to aberrant driving behaviour in several studies (e.g. Lajunen et al., 1998; Sullman et al., 2002).

Turkey spans the European and Asian continents, and also draws cultural inspirations from both of these continents. Kagitcibasi and Ataca (2005) showed that Turkish adults living in urban environments showed a growing appreciation of autonomy and individuality over a period of three decades beginning in 1975. This could be related to increased interaction with western cultures over time. It is therefore likely that there is substantial variation in individualism/collectivism, as well as uncertainty avoidance among individuals living in urban environments in Turkey. Due to this variation, and also because Turkish data for these cultural factors are solely available at the aggregate level from a time period when Turkey had less contact with countries in the west (Hofstede, 1980), we used individual reported data on the cultural constructs in the present study.