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# Driving styles among young novice drivers—The contribution of parental driving styles and personal characteristics

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#### ABSTRACT

As part of the effort to ascertain why young drivers are more at risk for car crashes, attention has recently turned to the effects of family, including the intergenerational transmission of driving styles from parents to offspring. The current study sought to further understanding of the nature and aspects of the family influence with the help of Bowen's family systems theory. In Phase 1 of the prospective study, 130 young driving students completed questionnaires tapping personal and personality measures, and their parents completed driving-related instruments. In Phase 2, a year after the young drivers had obtained their driver's license, they were administered the same questionnaires their parents had previously completed.

The results show significant correlations between the parents' driving styles and those of their offspring a year after licensure. Furthermore, differentiation of self and self-efficacy in newly acquired driving skills were found to moderate or heighten the similarity between the driving styles of parents and their offspring. For young drivers reporting anxiety in Phase 1, this was associated with a reported anxious driving style a year later. Among young female drivers, anxiety was also associated with a reckless and careless style. Higher sensation seeking was related to higher reckless driving among young male drivers.

The findings are discussed in the context of adolescence and the role of the study variables in the development and intergenerational transmission of driving styles. In addition to its theoretical contribution to the realms of intergenerational transmission in general, and young drivers in particular, the study may have practical implications for both family therapy and the design of driving interventions.

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#### 1. Introduction

Considerable research has been devoted to the attempt to identify the factors that may explain why young drivers are at high risk for car crashes throughout the world, with Israel being no exception (Arnett, 2002; Clarke et al., 2005; Harré, 2000; Peden et al., 2004; Taubman - Ben-Ari, 2008; Tilleczek, 2004; Williams, 2003). Among the variables that have been suggested as important contributors are factors relating to the family and personality (e.g., Taubman - Ben-Ari et al., 2004a). Following this avenue of research, the current study drew on Bowen's family systems theory (1978), combined with variables specific to driving, in an effort to expand our understanding of the nature of the parental influence and other contributors said to originate within the family. More specifically, the study examined whether it is possible to predict the driving style of young drivers after a year on the road on the basis of their personality characteristics and their parents' driving styles as measured a year earlier, when the youngsters were learning to drive.

## 1.1. Driving styles

Driving style refers to the way drivers choose to drive or to their customary driving mode, including speed, headway, and habitual level of attentiveness and assertiveness. It is expected to be influenced by attitudes and beliefs regarding driving, as well as by more general needs and values (Elander et al., 1993). Taubman - Ben-Ari et al. (2004a) suggested four broad driving styles, which were conceptualized in the Multidimensional Driving Style Inventory (MDSI): (1) the reckless and careless style, which refers to deliberate violations of safe driving norms and to thrill seeking while driving, and is characterized by high speed, racing, and illegal passing; (2) the anxious style, which relates to feelings of alertness and tension, along with ineffective relaxation activities when driving; (3) the angry and hostile style, which refers to expressions of irritation and rage, as well as hostile attitudes and acts on the road, and is typified by a tendency for aggressive behavior, such as cursing or flashing lights at other drivers; and (d) the patient and careful style, which reflects a well-adjusted style of driving, including planning ahead, attention to the road, patience, courtesy, calmness, and obedience to traffic regulations. Taubman - Ben-Ari et al. (2004a) refer to driving style as the extent to which each dimension is characteristic of the driver, and thus as a continuous variable.

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The four MDSI factors have been shown to be related to several personality traits and aspects of the driver's driving history. The reckless and the anxious styles were found to be most closely associated with maladaptive personality traits and a history of dangerous driving (previous involvement in car crashes and traffic violations), whereas the careful style appears to reflect a more welladjusted personality and safer driving. More specifically: higher self-esteem was associated with a higher careful driving style and a lower reckless style; higher sensation seeking was associated with a higher reckless style; lower extraversion was related to a higher anxious driving style; higher trait anxiety and neuroticism were both associated with a higher anxious and a lower careful style. In terms of gender, women scored higher on the anxious driving style, whereas men scored higher on the careful style (Taubman -Ben-Ari et al., 2004a), results consistent with previous findings of gender differences in respect to driving.

An important question which has yet to be satisfactorily answered in the literature is how driving styles develop. One factor which may be assumed to contribute to this development is the influence of the parents.

## 1.2. Parental influence and intergenerational transmission

A growing body of evidence indicates that parents who know what their adolescents are doing and who their friends are, who impose limits on teenage passengers and night driving, and who supervise their teen's driving and restrict access to a car, are more likely to have adolescents who take fewer risks, report less speeding and more seat belt use, and are involved in fewer traffic violations (Beck et al., 2001; Bingham and Shope, 2004; Graber et al., 2006; Hartos et al., 2000).

According to social learning theory (Bandura, 1977), parents shape their offspring's behavior by modeling. This notion is supported by considerable evidence indicating, for example, that the parents of people who are violent, abuse alcohol, or smoke also display the same behaviors (e.g., Corvo and Carpenter, 2000; White et al., 2000). Similar associations have been found in respect to driving styles. A study of Israeli drivers and their parents reported a significant intergenerational correlation for most of the driving styles. It was found that the more anxious or reckless the father's style, the greater the tendency of his offspring to display the same style, and the more the father employed a careful style and the less he evidenced an angry or reckless style, the more likely his offspring was to adopt a careful style. Similarly, a positive correlation between the driving styles of the mother and her offspring emerged for all four styles. Furthermore, significant gender associations were found, with men being influenced most by their fathers (rather than their mothers), and women by both parents (Taubman - Ben-Ari et al., 2005).

These findings are consistent with the results of an American study which found strong correlations between car crashes and traffic violations of parents and their children (Ferguson et al., 2001), and with a Brazilian study (Bianchi and Summala, 2004) where driving styles were examined by means of the Driver Behavior Questionnaire (DBQ; Reason et al., 1990). Bianchi and Summala (2004) report significant correlations between the driver errors and traffic violations of parents and their children. Interestingly, aggressive driving behaviors among the children were found to be associated more with their lifestyle and the nature of their family relations than with aggressive driving by their parents.

Further support for the effect of parental modeling can be derived from a Canadian investigation comparing the driving statistics for 58,950 new drivers aged 16–21 with the data obtained for both parents 4 years earlier (Wilson et al., 2006). The results revealed that mother's or father's involvement in a car crash attributed to driver error predicted the involvement of their son or

daughter in a car crash within their first 3 years of licensure. In addition, a recent study, using a French national survey of 1200 young drivers and their parents, showed that parental driving norms, values, and practices are transmitted to their emerging adults (Lahatte and Le Pape, 2008).

Nevertheless, some scholars believe that the perspective offered by the social learning theory might not be sufficient on its own to explain the causality underlying the display of parental behaviors by their offspring (Corvo and Carpenter, 2000; Stith et al., 2000). White et al. (2000), for instance, argue that previous studies have indicated that characteristics of the family environment, such as warmth and support, are stronger predictors of the abuse of psychoactive substances than the parents' abuse or attitude toward these substances, or may at least serve as moderating variables. Moreover, these authors claim that most studies rely on teenagers' reports of their parents' behavior rather than actually examining the parents.

Bowen's family systems theory outlines personal and family mechanisms through which intergenerational transmission occurs. This theory may therefore help to explain the similarity in reported driving styles of parents and offspring.

#### 1.3. Bowen's family systems theory

According to the family systems theory (Bowen, 1978), multigenerational emotional processes are transferred from generation to generation. These processes include emotions, perceptions, attitudes, beliefs, and values. It is therefore assumed that interpersonal differences in functioning reflect predictable patterns of relationships among family members across generations (Kerr and Bowen, 1988). One of the elements in Bowen's theory is the differentiation of self, a personality trait that is not only crucial for adaptive development and mental health, but also plays an important role in the intergenerational transmission of symptoms. As a measurable construct (Haber, 1990), differentiation of self has been employed in several studies (e.g., Bowen, 1978; Gavazzi, 1993; Kerr and Bowen, 1988; Skowron and Friedlander, 1998).

Differentiation of self, that is, how well-developed the individual's personal sense of self, is associated with the ability to distinguish affective from intellectual processes. Optimally self-differentiated individuals are thus not only able to feel and express their emotions, but also to control their impulses; they can make considered and planned decisions even in stressful situations, and tend to display good psychological adjustment. In contrast, less differentiated people tend to be less flexible, less adaptive, experience higher levels of chronic anxiety, and are more emotionally dependent on others. In addition, they more easily become dysfunctional under stress and thus suffer more psychological and physical symptoms (e.g., anxiety, somatization, depression, alcoholism, and psychosis; Bowen, 1978; Kerr and Bowen, 1988; Skowron and Friedlander, 1998).

In view of these findings, the current study sought to examine whether level of differentiation of self contributes to driving style. To the best of our knowledge, no previous investigation has dealt directly with the association between these two variables. A single study conducted over 30 years ago examined the link between highway crashes and emotional maturity, which is allied with differentiation of self, and found that drivers who were involved in crashes were less emotionally mature and less able to cope with external stress (McGuire, 1976).

According to Bowen, the chronic anxiety that derives from low differentiation of self is a major factor in the intergenerational transmission of symptoms such as eating disorders, alcoholism, marital problems, and even physical and mental illness (Kerr and Bowen, 1988). Though he did not relate specifically to risky driving, the associations frequently found between risky driving and

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