

RONI MAZLIACH

Explaining the link between gender and traffic accidents in israel

Introduction

Traffic violations are considered as intentional deviations from practices that are crucial to maintaining safety while driving¹. These violations are commonly referred to as a significant factor in causing traffic accidents; therefore, when examining the case of traffic accidents it is extremely important to look at factors involved in traffic violations as well².

Lev, Hershkovitz, & Yechiam³ for example, review the relevant literature and find that five personality factors are dominant when it comes to traffic violations – neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience. Willingness to take risks while driving was found to be linked to high levels of extraversion and openness to experience, as well as low levels of neuroticism, agreeableness, and conscientiousness. Amongst other factors that the literature mentions as linked to the chances of committing traffic violations, there are: respect for authority, sensation-seeking, risk as-

1 A. Bener, D. Crundall, *Role of gender and driver behaviour in road traffic crashes*, "International Journal of Crashworthiness", 13(3), 2008, p. 331–336.

2 J. Butters, R. E. Mann, C. M. Wickens, P. Boase, Gender differences and demographic influences in perceived concern for driver safety and support for impaired driving countermeasures, "Journal of Safety Research" 43, 2012, p.405–411; R. Fernandes, J. Hatfield, R. S. Job, Systematic investigation of the differential predictors for speeding, drink-driving, driving while fatigued, and not wearing a seat belt, among young drivers. *Transportation Research Part F* 13, 13, 2010, p. 179–196; P. Obst, K. Armstrong, S. Smith, T. Banks, Age and gender comparisons of driving while sleepy: Behaviours and risk perceptions. *Transportation Research Part F*, 14, 2011, p. 539–542; J. Schwartz, *Gender differences in drunk driving prevalence rates and trends: A 20-year assessment using multiple sources of evidence*. "Addictive Behaviors", 33, 2008, p. 1217–1222; T. Tomer-Fishman, Y. Gubman, *Driver's Traffic Violation Record and Accountability for Traffic Accidents*, Jerusalem 2013.

3 D. Lev, E. Hershkovitz, E. Yechiam, *Decision making and personality in traffic offenders: A study of Israeli drivers*, "Accident Analysis and Prevention", 40, 2008, p. 223–230.

assessment and more. As all of these factors tend to be influenced and shaped by a person's environment, in addition to being subjective personality traits, it can be assumed that they vary when considering different demographic groups – especially groups that differ gender-wise (i.e. males and females)⁴.

Thus, we can deduce that gender is a significant variable influencing traffic accidents. A large body of evidence supporting this claim can be found in various statistical findings that are widely described through the literature, based on data from traffic accidents and ticket documentation, as well as self-reports made by drivers. According to these findings, men tend to be more involved in traffic accidents that are linked with traffic violations such as driving while fatigued⁵, speeding⁶,

4 M. Schmid Mast, M. Sieverding, M. Esslen, K. Graber, L. Jancke, *Masculinity causes speeding in young men*, "Accident Analysis and Prevention", 40, 2008, 840–842.

R. Fernandes, J. Hatfield, R. S. Job, Systematic investigation of the differential predictors for speeding, drink-driving, driving while fatigued, and not wearing a seat belt, among young drivers. *Transportation Research Part F* 13, 13, 2010, p. 179–196; E. Constantinou, G. Panayiotou, N. Konstantinou, A. Loutsiou-Ladd, A. Kapardis, Risky and aggressive driving in young adults: Personality matters, "Accident Analysis and Prevention", 43, 2011, p. 1323–1331; G. Zhang, K. K. Yau, G. Chen, Risk factors associated with traffic violations and accident severity in China, "Accident Analysis and Prevention", 59, 2013, p. 18–25; M. Schmid Mast, M. Sieverding, M. Esslen, K. Graber, L. Jancke, *Masculinity causes speeding in young men*, "Accident Analysis and Prevention", 40, 2008, 840–842.

5 P. Obst, K. Armstrong, S. Smith, T. Banks, Age and gender comparisons of driving while sleepy: Behaviours and risk perceptions. *Transportation Research Part F*, 14, 2011, p. 539–542; R. Fernandes, J. Hatfield, R. S. Job, Systematic investigation of the differential predictors for speeding, drink-driving, driving while fatigued, and not wearing a seat belt, among young drivers. *Transportation Research Part F* 13, 13, 2010, p. 179–196.

6 J. Butters, R. E. Mann, C. M. Wickens, P. Boase, *Gender differences and demographic influences in perceived concern for driver safety and support for impaired driving countermeasures*, "Journal of Safety Research" 43, 2012, p.405–411.

J. Cestac, F. Paran, P. Delhomme, Young drivers' sensation seeking, subjective norms, and perceived behavioral control and their roles in predicting speeding intention: How risk-taking motivations evolve with gender and driving experience, "Safety Science", 49, p. 424–432; R. Fernandes, J. Hatfield, R. S. Job, Systematic investigation of the differential predictors for speeding, drink-driving, driving while fatigued, and not wearing a seat belt, among young drivers. *Transportation Research Part F* 13, 13, 2010, p. 179–196; T. Lotan, E. Grimberg, Young Driver's Involvement in Traffic Accidents - Data, Trends and Research, *Or Yarok* 2011; R Ivers, T. Senserrick, S. Boufous, M. Stevenson, H. Y. Chen, M. Woodward, et al., Novice Drivers' Risky Driving Behavior, Risk Perception, and Crash Risk: Findings From the DRIVE Study, "American Journal of Public Health", 99(9), 2009, p. 1638–1644; N. Rhodes, K. Pivik, Age and gender differences in risky driving: The roles of positive affect and risk perception. "Accident Analysis and Prevention", 43, 2011, p. 923–931. M. Schmid Mast, M. Sieverding, M. Esslen, K. Graber, L. Jancke, *Masculinity causes speeding in young men*, "Accident Analysis and Prevention", 40, 2008, 840–842; R. Tzaig, *Traffic Violations That Cause Traffic Accidents*, Jerusalem 2010; W. Vanlaar, H. Simpson, D. Mayhew, R. Robertson, R. Aggressive driving: A survey of attitudes, opinions and behaviors, "Journal of Safety Research", 39, 2008, p. 375–381; B. C. Watson, A. Watson, V. Siskind, J. J. Fleiter, Characteristics and predictors of high-range

drink-driving⁷ and driving with no seatbelt on⁸.

Some counter claims to the idea of a gender gap can be found, based on the argument that men are statistically more involved in traffic accidents because they are also found to have higher driving mileage than women⁹, or because they receive more traffic tickets due to gender bias, which causes them to be over-represented in formal data¹⁰. However, there can still be found a general agreement within the literature, asserting that the reason for men's over-involvement in traffic accidents is that they tend to take more risks than women¹¹.

-
- speeding offenders. Australasian Road Safety Research, Policing and Education Conference, Sydney 2009, p. 1–10; G. Zhang, K. K. Yau, G. Chen, Risk factors associated with traffic violations and accident severity in China, "Accident Analysis and Prevention", 59, 2013, p. 18–25; B. Scott-Parker, M. K. Hyde, B. Watson, M. J. King, *Speeding by young novice drivers: What can personal characteristics and psychosocial theory add to our understanding?* Accident Analysis and Prevention, 50, 2013, p. 242–250; T. Tomer-Fishman, Y. Gubman, *Driver's Traffic Violation Record and Accountability for Traffic Accidents*, Jerusalem 2013; W. Vanlaar, H. Simpson, D. Mayhew, R. Robertson, R. *Aggressive driving: A survey of attitudes, opinions and behaviors*, "Journal of Safety Research", 39, 2008, p. 375–381.
- 7 A. Bener, D. Crundall, Role of gender and driver behaviour in road traffic crashes, "International Journal of Crashworthiness", 13(3), 2008, p. 331–336; J. Schwartz, Gender differences in drunk driving prevalence rates and trends: A 20-year assessment using multiple sources of evidence. "Addictive Behaviors", 33, 2008, p. 1217–1222.
- 8 R. Fernandes, J. Hatfield, R. S. Job, Systematic investigation of the differential predictors for speeding, drink-driving, driving while fatigued, and not wearing a seat belt, among young drivers. *Transportation Research Part F* 13, 13, 2010, p. 179–196.
- 9 B. González-Iglesias, J. Gómez-Fraguela, A. Luengo-Martín, Driving anger and traffic violations: Gender differences. *Transportation Research Part F*, 15, 2012, p. 404–412.
- 10 B. Rowe, *Gender Bias in the Enforcement of Traffic Laws: Evidence based on a new empirical test*, "American Law & Economics Association Annual Meetings", Ann Arbor 2008, p. 1–35.
- 11 A. Bener, D. Crundall, *Role of gender and driver behaviour in road traffic crashes*, "International Journal of Crashworthiness", 13(3), 2008, p. 331–336; J. Butters, R. E. Mann, C. M. Wickens, P. Boase, *Gender differences and demographic influences in perceived concern for driver safety and support for impaired driving countermeasures*, "Journal of Safety Research", 43, 2012, p. 405–411; E. Constantinou, G. Panayiotou, N. Konstantinou, A. Loutsidou-Ladd, A. Kapardis, *Risky and aggressive driving in young adults: Personality matters*, "Accident Analysis and Prevention", 43, 2011, p. 1323–1331; C. F. Chen, *Personality, safety attitudes and risky driving behaviors—Evidence from young Taiwanese motorcyclists*, "Accident Analysis and Prevention", 41, 2009, p. 963–968; C. P. Cross, L. T. Copping, A. Campbell, *Sex Differences in Impulsivity: A Meta-Analysis*, "Psychological Bulletin", 137(1), 2011, p. 97–130; B. González-Iglesias, J. Gómez-Fraguela, A. Luengo-Martín, *Driving anger and traffic violations: Gender differences. Transportation Research Part F*, 15, 2012, p. 404–412; T. Lotan, E. Grimberg, *Young Driver's Involvement in Traffic Accidents - Data, Trends and Research*, Or Yarak 2011; N. Rhodes, K. Pivik, *Age and gender differences in risky driving: The roles of positive affect and risk perception*. "Accident Analysis and Prevention", 43, 2011, p. 923–931; F. Russo, S. A. Biancardo, G. Dell'acqua, *Road Safety from the Perspective of Driver Gender and Age as Related to the Injury Crash Frequency and Road Scenario*, "Traffic Injury Prevention", 15, 2014, p. 25–33.

In an article that can be used to further support this claim, Wickens describe how, when it concerns women – as opposed to men – a negative correlation can be found between excessive drinking and risky driving, presumably because women tend not to take the risk of driving when under the influence. In addition, González-Iglesias¹² as well as Schwartz¹³ note how women – in comparison with men – are more prone to avoiding driving in risky situations (such as while under the influence of alcohol, during late hours etc.).

It is important to note, however, that when examining the literature it is obvious that gender cannot be considered as a sole variable, directly influencing the probability of committing traffic violations and being involved in traffic accidents; it does, however, contribute to the greater likeliness of men being involved in accidents when integrated or mediated with other variables¹⁴ (Butters et al, 2012). We will now review some of the explanations that the literature provides in this context.

Literature review – variables involved in men’s over-involvement in traffic accidents

Sensation-seeking and emotional gratification

This assumption refers to the willingness to take risks while driving as being influenced by sensation-seeking – positive emotional reinforcements granted by risky driving¹⁵. Nowadays, driving (and mainly the forms of driving that are considered as violating the law) tend to be culturally linked to intense positive emotions (such as the feeling of being “free”) – a link influenced, among other factors, by automobile manufacturers’ marketing methods and positive depictions of risky driving in the popular media¹⁶.

12 B. González-Iglesias, J. Gómez-Fraguela, A. Luengo-Martín, Driving anger and traffic violations: Gender differences. *Transportation Research Part F*, 15, 2012, p. 404–412.

13 J. Schwartz, Gender differences in drunk driving prevalence rates and trends: A 20-year assessment using multiple sources of evidence. *Addictive Behaviors*, 33, 2008, p. 1217–1222.

14 J. Butters, R. E. Mann, C. M. Wickens, P. Boase, Gender differences and demographic influences in perceived concern for driver safety and support for impaired driving countermeasures, *Journal of Safety Research* 43, 2012, p.405–411.

15 J. Cestac, F. Paran, P. Delhomme, Young drivers’ sensation seeking, subjective norms, and perceived behavioral control and their roles in predicting speeding intention: How risk-taking motivations evolve with gender and driving experience, *Safety Science*, 49, p. 424–432; B. Scott-Parker, M. K. Hyde, B. Watson, M. J. King, Speeding by young novice drivers: What can personal characteristics and psychosocial theory add to our understanding? *Accident Analysis and Prevention*, 50, 2013, p. 242–250.

16 E. Constantinou, G. Panayiotou, N. Konstantinou, A. Loutsiou-Ladd, A. Kapardis, *Risky and aggressive driving in young adults: Personality matters*, *Accident Analysis and Prevention*, 43, 2011, p. 1323–1331.

Rhodes & Pivik, as well as Lotan & Greemberg¹⁷, hypothesize in their research that these positive emotions can be influenced by the gender variable, as men relate more positively to the experience of driving and are more interested in it than women. This can explain men's increased willingness to take excitement-creating risks while driving, as well as committing traffic violations (in order to receive significant emotional rewards). Other research has found that sensation-seeking positively influences men's willingness to excessively speed while driving, but not women's¹⁸.

Risk assessment and driving confidence

According to this assumption, gender acts as a mediator between assessing possible risks linked with a traffic violation and committing that violation. In the case of men, it is claimed that they tend to underestimate the value of physical risks¹⁹, or that they are less concerned with the legal punishment that might come as a result of committing a violation – such as a ticket or an arrest²⁰. This assumption gains more credence in light of the claim that risk-assessment is the most significant predictive factor of the probability of committing traffic violations and being involved in traffic accidents²¹.

Obst²², for example, found that – as opposed to women – fatigued men tend to underestimate the value of the risk stemming from driving during late hours. Fernandes²³

17 N. Rhodes, K. Pivik, *Age and gender differences in risky driving: The roles of positive affect and risk perception*. "Accident Analysis and Prevention", 43, 2011, p. 923–931; T. Lotan, E. Grimberg, *Young Driver's Involvement in Traffic Accidents - Data, Trends and Research*, Or Yarok 2011.

18 J. Cestac, F. Paran, P. Delhomme, *Young drivers' sensation seeking, subjective norms, and perceived behavioral control and their roles in predicting speeding intention: How risk-taking motivations evolve with gender and driving experience*, "Safety Science", 49, p. 424–432.

19 J. Butters, R. E. Mann, C. M. Wickens, P. Boase, *Gender differences and demographic influences in perceived concern for driver safety and support for impaired driving countermeasures*, "Journal of Safety Research" 43, 2012, p.405–411; E. Constantinou, G. Panayiotou, N. Konstantinou, A. Loutsiou-Ladd, A. Kapardis, *Risky and aggressive driving in young adults: Personality matters*, "Accident Analysis and Prevention", 43, 2011, p. 1323–1331; B. González-Iglesias, J. Gómez-Fraguela, A. Luengo-Martín, *Driving anger and traffic violations: Gender differences*. *Transportation Research Part F*, 15, 2012, p. 404–412; Ivers, R., Senserrick, T., Boufous, S., Stevenson, M., Chen, H.-Y., Woodward, M., et al. (2009). *Novice Drivers' Risky Driving Behavior, Risk Perception, and Crash Risk: Findings From the DRIVE Study*. *American Journal of Public Health*, 99(9), 1638–1644.

20 E. Constantinou, G. Panayiotou, N. Konstantinou, A. Loutsiou-Ladd, A. Kapardis, *Risky and aggressive driving in young adults: Personality matters*, "Accident Analysis and Prevention", 43, 2011, p. 1323–1331.

21 A. Bener, D. Crundall, *Role of gender and driver behaviour in road traffic crashes*, "International Journal of Crashworthiness", 13(3), 2008, p. 331–336.

22 P. Obst, K. Armstrong, S. Smith, T. Banks, *Age and gender comparisons of driving while sleepy: Behaviours and risk perceptions*. *Transportation Research Part F*, 14, 2011, p. 539–542.

23 R. Fernandes, J. Hatfield, R. S. Job, *Systematic investigation of the differential predictors for speeding, drink-driving, driving while fatigued, and not wearing a seat belt, among young drivers*. *Transportation Research Part F* 13, 13, 2010, p. 179–196.

added to these findings in their research on young drivers, in which they tested for a link between gender, risk assessment and the probability of committing traffic violations; they found that a positive link between low risk assessment and driving while under the influence or driving with no seatbelt on could be shown when examining men, but not when looking at women (i.e. as opposed to men, women do not tend to commit traffic violations, even when they perceive the possible risk to be low).

In addition to their low risk assessment, there is also evidence of higher driving confidence among men, which manifests in men overestimating their driving abilities and thus committing traffic violations which put them in problematic risk situations²⁴. This can also serve to explain the lack of willingness often shown by women when concerning risk-taking, as it might stem from low driving confidence. Research conducted among older drivers found, accordingly, that women reported higher levels of driving self-regulation (not driving in risky conditions) and of lower levels of driver confidence compared with men²⁵

Aggressive driving and violence

Aggressive driving data can be compiled from a range of aggressive behaviors when driving, which can be either extreme (such as assaulting other drivers) or comparatively mild (such as offensive hand gestures referred to other drivers). While aggressive driving in itself does not constitute as an illegal activity, it is often manifest when committing traffic violations (such as speeding), which sometimes lead to involvement in traffic accidents²⁶.

In research conducted by Vanlaar²⁷, it was found that the probability of aggressive driving was doubled in men when compared with women; the authors assume that these

24 J. Butters, R. E. Mann, C. M. Wickens, P. Boase, Gender differences and demographic influences in perceived concern for driver safety and support for impaired driving countermeasures, "Journal of Safety Research" 43, 2012, p.405–411.

25 K. T. Braitman, A. T. McCartt, *Characteristics Of Older Drivers Who Self-Limit Their Driving*, "Annals of Advances in Automotive Medicine", Arlington 2008, p. 1–9; L. A. D'Ambrosio, L. K. Donorfio, J. F. Coughlin, M. Mohyde, J. Meyer, *Gender Differences in Self-Regulation Patterns and Attitudes Toward Driving Among Older Adults*, "Journal of Women & Aging", 20 (3–4), 2008, p. 265–282.

26 B. González-Iglesias, J. Gómez-Fraguela, A. Luengo-Martín, Driving anger and traffic violations: Gender differences. Transportation Research Part F, 15, 2012, p. 404–412; T. Lotan, E. Grimberg, Young Driver's Involvement in Traffic Accidents - Data, Trends and Research, Or Yarok 2011; W. Vanlaar, H. Simpson, D. Mayhew, R. Robertson, R. Aggressive driving: A survey of attitudes, opinions and behaviors, "Journal of Safety Research", 39, 2008, p. 375–381; M. Wickens, R. E. Mann, G. Stoduto, J. E. Butters, A. Ialomiteanu, R. G. Smart, Does gender moderate the relationship between driver aggression and its risk factors? "Accident Analysis and Prevention", 45, 2012, p. 10–18; T. Ozkan, T. Lajunen, J. Chliaoutakis, D. Parker, H. Summala, Cross-cultural differences in driving behaviours: A comparison of six countries. Transportation Research Part F, 9, 2006, p. 227–242.

27 W. Vanlaar, H. Simpson, D. Mayhew, R. Robertson, R. *Aggressive driving: A survey of attitudes, opinions and behaviors*, "Journal of Safety Research", 39, 2008, p. 375–381.

findings are based not solely upon men's increased willingness to take risks, but also on men's tendency to act aggressively more often than women. These findings are further supported throughout the literature, as men are described as more prone to being influenced by provocations, to reacting in a behavioral rather than a cognitive or emotional way and to underestimating the value of other drivers' counteractions²⁸.

Culture, gender roles and stereotypes

This fourth claim refers to cultural variables²⁹, that are involved in defining what is "normal", socially accepted behavior. These definitions are partially influenced by traditional gender roles, and are capable of accordingly influencing drivers' informal perceptions of traffic violations. Thus, cultural variables have the power to – for instance – legitimize the committing of a certain driving offence (such as speeding), even if it is considered wrong in the eyes of the³⁰.

Amongst these cultural variables there are male gender stereotypes, which contribute to men's riskier lifestyles, aimed at demonstrating "manhood"³¹. Thus, the will to demonstrate "machismo" – excessive manhood – as well as the trait of competitiveness which is more dominant amongst men³², are found to be linked to aggressive driving and traffic

28 C. P. Cross, L. T. Copping, A. Campbell, *Sex Differences in Impulsivity: A Meta-Analysis*, "Psychological Bulletin", 137(1), 2011, p. 97–130; B. González-Iglesias, J. Gómez-Fraguela, A. Luengo-Martín, *Driving anger and traffic violations: Gender differences. Transportation Research Part F*, 15, 2012, p. 404–412; T. Lotan, E. Grimberg, *Young Driver's Involvement in Traffic Accidents - Data, Trends and Research*, Or Yarak 2011; C. M. Wickens, R. E. Mann, G. Stoduto, J. E. Butters, A. Ialomiteanu, R. G. Smart, *Does gender moderate the relationship between driver aggression and its risk factors?* "Accident Analysis and Prevention", 45, 2012, p. 10–18; T. Ozkan, T. Lajunen, J. Chliaoutakis, D. Parker, H. Summala, *Cross-cultural differences in driving behaviours: A comparison of six countries. Transportation Research Part F*, 9, 2006, p. 227–242.

29 J. Butters, R. E. Mann, C. M. Wickens, P. Boase, Gender differences and demographic influences in perceived concern for driver safety and support for impaired driving countermeasures, "Journal of Safety Research" 43, 2012, p.405–411; L. A. D'Ambrosio, L. K. Donorfio, J. F. Coughlin, M. Mohyde, J. Meyer, Gender Differences in Self-Regulation Patterns and Attitudes Toward Driving Among Older Adults, "Journal of Women & Aging", 20 (3–4), 2008, p. 265–282; T. Ozkan, T. Lajunen, J. Chliaoutakis, D. Parker, H. Summala, *Cross-cultural differences in driving behaviours: A comparison of six countries. Transportation Research Part F*, 9, 2006, p. 227–242; G. Zhang, K. K. Yau, G. Chen, *Risk factors associated with traffic violations and accident severity in China*, "Accident Analysis and Prevention", 59, 2013, p. 18–25.

30 N. Yeung, C. von Hippel, Stereotype threat increases the likelihood that female drivers in a simulator run over jaywalkers, "Accident Analysis and Prevention", 40, 2008, p. 667–674.

31 C. P. Cross, L. T. Copping, A. Campbell, *Sex Differences in Impulsivity: A Meta-Analysis*, "Psychological Bulletin", 137(1), 2011, p. 97–130.

32 J. Cestac, F. Paran, P. Delhomme, Young drivers' sensation seeking, subjective norms, and perceived behavioral control and their roles in predicting speeding intention: How risk-taking motivations evolve with gender and driving experience, "Safety Science", 49, p. 424–432.

violations committed by men³³. This claim can be supported by data showing that when men are in the company of other men, they tend to commit even more violations and drive more recklessly than when they are alone - supposedly in order to accent their manhood in the form of capability and fearlessness. Some claim that this type of behavior should not be considered deviant but natural, as males of all species act similarly out of the evolutionary need to attract mates; in the case of the human race, therefore, one of the only socially-accepted ways to pronounce one's manliness is through driving behaviors³⁴.

In research performed on a sample of men, Schmid Mast³⁵ primed masculine symbols in order to examine whether the masculine gender role has an influence upon men's levels of speeding while driving. The results indicated that being exposed to masculine properties before driving does increase - unconsciously - the level of speeding among men. It is interesting to point out that, conversely, feminism as a cultural variable was found to be a factor lowering aggressive driving and traffic violation levels amongst women³⁶. This might be explained by Cross³⁷ idea, according to which women's higher levels of self-control are responsible for the gender gap, determining the prevalence of traffic violations and criminal behavior in general. The authors further explain that this feminine self-control is a result of girls' internalizing the significant enviro-cultural control mechanisms placed upon them since childhood, in comparison with boys'.

Wickens³⁸ further examined this subject when they analyzed a few more enviro-cultural factors that were found to be positively linked to traffic violations, while referring to the influence that the gender variable might have upon these factors. Among other findings, it is important to note how the authors found a link between psychological distress

33 J. Butters, R. E. Mann, C. M. Wickens, P. Boase, *Gender differences and demographic influences in perceived concern for driver safety and support for impaired driving countermeasures*, "Journal of Safety Research" 43, 2012, p.405-411.

J. Cestac, F. Paran, P. Delhomme, Young drivers' sensation seeking, subjective norms, and perceived behavioral control and their roles in predicting speeding intention: How risk-taking motivations evolve with gender and driving experience, "Safety Science", 49, p. 424-432.

34 E. Constantinou, G. Panayiotou, N. Konstantinou, A. Loutsiou-Ladd, A. Kapardis, *Risky and aggressive driving in young adults: Personality matters*, "Accident Analysis and Prevention", 43, 2011, p. 1323-1331.

35 M. Schmid Mast, M. Sieverding, M. Esslen, K. Graber, L. Jancke, *Masculinity causes speeding in young men*, "Accident Analysis and Prevention", 40, 2008, 840-842.

36 C. M. Wickens, R. E. Mann, G. Stoduto, J. E. Butters, A. Ialomiteanu, R. G. Smart, *Does gender moderate the relationship between driver aggression and its risk factors?* "Accident Analysis and Prevention", 45, 2012, p. 10-18.

37 C. P. Cross, L. T. Copping, A. Campbell, *Sex Differences in Impulsivity: A Meta-Analysis*, "Psychological Bulletin", 137(1), 2011, p. 97-130.

38 C. M. Wickens, R. E. Mann, G. Stoduto, J. E. Butters, A. Ialomiteanu, R. G. Smart, *Does gender moderate the relationship between driver aggression and its risk factors?* "Accident Analysis and Prevention", 45, 2012, p. 10-18.

and depression among women and traffic violations (in accordance with the existence of higher rates of depression among the female population rather than the male one); risky behaviors such as driving under the influence were more prevalent among men, however, a finding that is understandable when one considers how these kinds of behaviors are much more socially accepted when committed by men rather than women.

Other cultural explanations for women's comparative lack of risky driving behaviors and traffic violations include the higher probability of women – as nurturing, motherly characters – being accompanied by young children when driving, a fact that serves as a catalyst for safer driving. Chen also notes how altruism and caring – traits that are attributed mainly to women – also lead to lower levels of traffic violations and accidents among women.

Another significant cultural variable is negative gender stereotypes concerning women's driving skills. Russo³⁹ open their article by referring to female gender stereotypes concerning driving, which describe women as incapable drivers. This might point to the fact that women's comparatively lower involvement in traffic violations and accidents stems from a lack of confidence, which might originate from stereotypes underestimating women's capabilities as drivers. However, it is worth mentioning that Yeung & von Hippel⁴⁰ argue in favor of a reverse effect of female stereotypes, as being a “self-fulfilling prophecy”; therefore, they claim that women's increasing involvement in traffic accidents might originate from internalizing a gender biased perception of themselves as being “bad” drivers.

Lastly, some more gender-cultural explanations can be found in González-Iglesias⁴¹. The authors refer to the universal female difficulty of integrating careers and family life as a stimulant to women's aggressive driving, when it manifests itself as a response to obstacles on the road that delay driving (such as road-blocks). In addition, the authors describe males as being more aim-directed than females, which leads to male aggressive driving as a response to males' resentment towards traffic laws and law enforcement that delay them in reaching their aim (such as a visible police presence that compels drivers to adjust driving styles).

39 F. Russo, S. A. Biancardo, G. Dell'acqua, *Road Safety from the Perspective of Driver Gender and Age as Related to the Injury Crash Frequency and Road Scenario*, “Traffic Injury Prevention”, 15, 2014, p. 25–33.

C. M. Wickens, R. E. Mann, G. Stoduto, J. E. Butters, A. Ialomiteanu, R. G. Smart, *Does gender moderate the relationship between driver aggression and its risk factors?* “Accident Analysis and Prevention”, 45, 2012, p. 10–18.

40 N. Yeung, C. von Hippel, *Stereotype threat increases the likelihood that female drivers in a simulator run over jaywalkers*, “Accident Analysis and Prevention”, 40, 2008, p. 667–674.

41 B. González-Iglesias, J. Gómez-Fraguela, A. Luengo-Martín, *Driving anger and traffic violations: Gender differences*. *Transportation Research Part F*, 15, 2012, p. 404–412.

It is safe to assume, then, that – as the last part of the literature review presented here suggests – cultural variables are a significant factor, when integrated with gender, influencing traffic violations and accident involvement. As culture takes on this prominent role, it can also be deduced that different cultural factors are involved when it comes to examining different contexts, such as the analysis of relevant data concerning one specific country. Ozkan⁴² refer to the collection of cultural factors influencing driving behavior in a specific setting (or country) as a local “traffic culture”. We will now present some relevant statistics regarding the case of Israel, while trying to establish which of the gender-related explanations mentioned above is especially prominent in the Israeli arena and its “traffic culture”.

Gender differences in traffic accident involvement – the Israeli case

Traffic accident statistics in Israel

The following statistics were taken from publications made by the Israeli National Road Safety Authority (or “Ha Rashut Ha Leumit Le Betichut Ba Drachim”, referred to here as the RLBD), a governmental bureau that was established in 2007 in order to combat the increasing risk of traffic accidents in Israel. Among its various efforts to reduce traffic accident fatalities, the RLBD issues relevant publications and statistical data on a yearly basis. The data used here was taken from its latest “Trends in Israel’s road safety” publication, concerning the year 2012. This publication is based mainly upon police documentation of traffic accidents that have resulted in injuries or fatalities, as these are often the most detailed, reliable documents in the field.

In the year 2012, 61,849 traffic accidents that resulted in injuries and/or deaths occurred within Israeli boundaries. Compared with 2011, this statistic represents a reduction of approx. 4000 incidents. 20% of these accidents are considered as “serious”/ lethal accidents or ones that were caused by the relatively more severe variety of traffic violations (such as disregarding a stop sign or a traffic light, drink-driving, etc.). Among these cases, 263 of the people involved suffered lethal injuries as a result of their involvement in the accident – a decrease of 23% in comparison with the previous year’s records. Overall, 2012 and the decade preceding it showed a consistent decrease in the number of traffic accidents and related fatalities in Israel.

When making comparisons on an international basis, it is found that compared with other OECD countries – on the basis of fatalities per 100,000 civilians – the Israel of 2012 is in the 2ndmost favorable place (the least amount of fatalities per 100,000 people) along with the Netherlands, with only 3.3 fatalities. However, when looking at

42 T. Ozkan, T. Lajunen, J. Chliaoutakis, D. Parker, H. Summala, *Cross-cultural differences in driving behaviours: A comparison of six countries. Transportation Research Part F*, 9, 2006, p. 227–242.

comparisons concerning the number of fatalities per 100,000 vehicles, Israel has the highest levels (the largest amount of fatalities) along with the Czech Republic, with an average of 12.7 fatalities. It can be deduced, therefore, that low quantities of automobiles on the road might account for the low average of fatalities per civilians, while much higher levels can be found when concerning fatalities per automobiles – a finding that is especially important from the perspective of international comparison. Thus, it is apparent that traffic accidents continue to pose a significant threat in the Israeli state and that learning more about the features and causes of this threat can be of great benefit to Israeli citizens.

One way of learning more about traffic accidents in Israel is through analyzing related gender trends. In Israel there are 3.75 million people who have driving licenses. Of them, 54% are men and 46% are women. As shown previously, gender can be of great relevance to the issue of traffic accidents, and can therefore be a possible effective basis for designing and implementing programs aimed at fighting this phenomenon. Such gender-targeted programs are highly recommended by many⁴³, for example.

According to the RLBD's 2012 publication, 73% of fatalities in that year were men. In addition, when analyzing the fatalities further, it was found that among females, only 17.1% were in the driver's seat when the accident occurred, compared with 43.5% of men. The overrepresentation of men in traffic accidents – as introduced in the first section of this article – is, therefore, prominent in the Israeli case as well as in many other countries'. How can we explain this in the light of Israel's "traffic culture" and gender norms? We will now give some details regarding the concept of the "culture of honor" and its prevalence in Israel in order to answer this important question.

Conclusion: The culture of honor & gender roles in Israel

An extensive literature review conducted by Taubman-Ben Ari⁴⁴ concludes with a profile of the Israeli driver as being over-confident, a risk-taker, a thrill-seeker, potentially aggressive and less agreeable. Israeli men, particularly, use driving as means of strengthening their masculine self-image, taking risks, practicing control, testing boundaries and making an impression. Young male drivers are especially prone to risk-taking based on their social need to express their manhood. Israeli male drivers are also less likely to be motivated to follow traffic laws, and tend to obey them mostly when they suspect that disobeying will result in punitive actions (and not out of respect or agreement with the

43 J. Butters, R. E. Mann, C. M. Wickens, P. Boase, *Gender differences and demographic influences in perceived concern for driver safety and support for impaired driving countermeasures*, "Journal of Safety Research" 43, 2012, p.405–411; M. Schmid Mast, M. Sieverding, M. Esslen, K. Graber, L. Jancke, *Masculinity causes speeding in young men*, "Accident Analysis and Prevention", 40, 2008, 840–842.

44 O. Taubman-Ben Ari, *Israeli Driver Profile*. Jerusalem 2005.

law). They see their law-breaking driving styles as being acceptable and legitimized and don't tend to self-criticize in that respect. They are also considered to be relatively aggressive (mostly in terms of their attitudes rather than their actions) and see themselves as better drivers than Israeli women.

Taubman-Ben Ari concludes that in light of the lack of other relevant research, it is hard to safely determine whether the Israeli male driver has features that are similar to those of male drivers from different countries. However, when we look at the literature review presented in this article with regards to international gender disparities in traffic accidents, we can find many similarities to the specific Israeli case – positive gratification and sensation seeking, aggressiveness, underestimation of risks, etc. However, when trying to apply this comparison to cultural norms and gender roles, a much more specific picture is revealed, as expected. This picture can be mainly described in terms of the “culture of honor” concept, as we will now explain.

“Honor cultures” is a term used to define societies in which members derive their social rank and sense of worth by measuring up to social norms of honorable behavior and avoiding (or avenging) shameful behavior. These cultures cultivate emotions such as shame and envy, which tend to be collectively defined, rather than more individualistic emotions such as guilt, remorse, etc (Kamir, 2004)⁴⁵. The code of conduct developed in honor cultures emphasizes, therefore, the importance of social image and one's reputation⁴⁶.

In honor cultures, honor serves as an effective disciplinary tool. An honor culture offers its members specific behavior codes demanding complete obedience, as failure to follow these codes results in loss of honor.

Honor is a concept that manifests itself differently in different cultures, as honor cultures are local and particularistic in the sense that they apply exclusively to their own members. Ethnographic studies of “honor” have emphasized its special meaning for the Mediterranean population⁴⁷. In the Israeli context – with Israel considered as a “culture of honor” – “honor” mainly implies a set of values stressing power and “masculine” militant features. This ideology stems from the experiences of the Jewish Diaspora (especially the Holocaust) and the view that there is a stain of shame on the collective Jewish identity, which can be wiped-out through militant power⁴⁸. With regards to Is-

45 O. Kamir, *Israeli Honor and Dignity: Social Norms, Gender Politics and the Law*, Jerusalem 2004.

46 P. M. Rodriguez Mosquera, A. H. Fischer, A. S. Manstead, R. Zaalberg, *Attack, disapproval, or withdrawal? The role of honour in anger and shame responses to being insulted*, “Cognition and Emotion”, 22, 2008, p. 1471–1498.

47 V. M. Guerra, R. Giner-Sorolla, M. Vasiljevic, *The Importance of Honor Concerns across Eight Countries. Group Processes and Intergroup Relations*, 16 (3), 2012, p. 298–318.

48 O. Kamir, *Israeli Honor and Dignity: Social Norms, Gender Politics and the Law*, Jerusalem 2004.

rael's Arab inhabitants, it is widely accepted that Arab societies cultivate honor cultures as well – even more so than within Jewish-Israeli society⁴⁹. An interesting combination of “double” honor cultures can also be found in the Israeli case, when examining Jewish citizens whose families immigrated to Israel from Arab countries such as Morocco, Iraq, etc.

Honor cultures are also class-oriented, since honor and the means of maintaining it vary according to social class. The most obvious class difference in many honor cultures is gender based. The nature of honor thus differs greatly between men and women – a woman is usually dishonored by the tainting of her sexual purity (when she is “active”, and honored when she is “inactive”), while men are obliged to become active “protectors” in order to gain honor (and are shamed when they do nothing to defend themselves)⁵⁰.

When we compare this brief description of the concept of honor culture and Taubman-Ben Ari's⁵¹ profile of Israeli drivers, many parallel features arise. The Israeli male driver – whether Jewish or Arab – is a driver competing in the race for honor; as masculine militant values direct his self-esteem – mostly unknowingly – this driver wishes to express his “activeness”. He is not a passive player conforming to traffic law, doing as he is told; on the contrary – inactiveness, receptivism and conformity are all feminine values in the eyes of the Israeli male driver and therefore they do not match his perceived self-image.

It can be deduced, therefore, that Israeli honor culture – along with the Arab one, in some cases – serves as a background to drivers' judgment calls; as honor implicates social rank, which in turn implicates self-image, the Israeli driver strives to maintain honor while on the roads. Not wanting to admit defeat or incapability, he will not surrender to rules indicating that there are limitations to his power, such as speed-limits or the order not to drive while under the influence. For a male driver this can be considered as admitting defeat, accepting oneself as weak and therefore dishonored; in the eyes of the culture of honor, traffic laws are therefore considered as offensive, harmful factors and not as the protective measures they were designed to be. The Israeli male is over-confident, a risk-taker and a thrill-seeker because all these features serve to maintain his role as a protector – as an active soldier holding the power to defend and redeem – while the female driver will choose to abide by the laws that are mostly consistent with her maintaining her honor as a passive, quiet, incapable women.

A ‘culture of honor’ is one way to explain the phenomenon. However, according to a new British study conducted by Professor Geoffrey Beattie from Manchester Uni-

49 V. M. Guerra, R. Giner-Sorolla, M. Vasiljevic, The Importance of Honor Concerns across Eight Countries. *Group Processes and Intergroup Relations*, 16 (3), 2012, p. 298–318.

50 V. M. Guerra, R. Giner-Sorolla, M. Vasiljevic, The Importance of Honor Concerns across Eight Countries. *Group Processes and Intergroup Relations*, 16 (3), 2012, p. 298–318.

51 O. Taubman-Ben Ari, *Israeli Driver Profile*. Jerusalem 2005.

iversity for the British insurance company esure, the reasons lie in another evolutionary factor: in the genes of men there is a primitive caveman – our distant ancestor.

In this study, “Gender Differences in Driving Risk as an Influence on the Risk Premium in the Cost of Insurance”, Beattie goes far into the past. According to the study, 99% of the evolution of the mind occurred in the period when we were still hunters. Therefore, in the mind of the modern person in the 21st century, there are still ancient traits that explain the difference between the genders in all that pertains to taking risks in driving. In other words, Beattie maintains that people have not developed much since our forefathers lived in caves and hunted whatever they could, and the intention is, of course, to highlight the men in the population.

Going out to hunt was accompanied by the taking of many risks, and this is what explains, according to the research, the behavior of young people. Male drivers are like our ancestors; the process of driving is a type of hunt, and the risks taken during it raise the chances of being involved in an accident. Women, in contrast, were not forced to leave the opening of the cave, and therefore they take fewer risks, even today.

The research study also attempts to provide responses to other research studies that have been published over the years pertaining to the differences between the sexes. Throughout the world, men are more involved in traffic accidents, regardless of their relative number in the population. In addition, men cause problems not only behind the wheel but also as pedestrians, at home, and at work. Thus, Beattie negates the fact that driving skills or the instinct of competitiveness influences the data and maintains that the cause is a deeper factor in the personality.

Beattie also provides a solution to masculine aggressiveness. While women can understand actions undertaken against them, men interpret this as personal and immediately act to protect their honor. Women, even if they decide to act, will not choose a direct mode of action but will adopt an indirect and intelligent way of acting (and perhaps a vengeful way). The hunter in us is also what causes us to violate traffic rules.

During adolescence, changes occur in the brain and cause erosion in the hunter’s gene. However, the life span of the primitive man was very short, so that the age of forty was sometimes considered an advanced age. Thus, it is possible to hypothesize that the same person walking on two legs ‘missed’ the more reasoned stage of awareness and therefore very little development occurred in this stage of life. This explains the fact that the bottom line is that men have greater chances of being involved in traffic accidents than women.

As observed before, involvement in breaking traffic laws often leads to involvement in traffic accidents. As the average Israeli male abides by his culture of honor, he is more prone to breaking the law – especially where it is relatively socially acceptable to do so: when driving – and therefore becomes much more exposed than female drivers to traffic

accidents. Thus, this thesis can serve to account, in my opinion, for Israeli males' over-representation in traffic-accidents' data.

Limitations and implications

The culture of honor and its gender divisions are evident when looking at the Israeli case and especially at its Arab populace, which is subjected to both the Israeli and the Arab honor cultures (as can be demonstrated in RLBD data detailing a larger proportion of traffic accidents involving Arab citizens than Jewish ones). There is a growing need for geographically-specific research on the subject of gender, honor cultures and traffic accidents, in order to reveal in a more detailed way the intricate ways in which honor culture might integrate with gender in influencing driving behaviors. This article serves only to propose the thesis of honor cultures as a significant local factor contributing to traffic accidents, but its resolution is much too wide to be able to base road-safety programs upon it. A further development of this idea, on a local basis, will thus be of great help in the field.

SUMMARY

Explaining the link between gender and traffic accidents in Israel

The aim of study is to explain the link between gender and traffic accidents in Israel. Traffic violations are considered as intentional deviations from practices that are crucial to maintaining safety while driving. These violations are commonly referred to as a significant factor in causing traffic accidents; therefore, when examining the case of traffic accidents it is extremely important to look at factors involved in traffic violations as well. This article serves only to propose the thesis of honour cultures as a significant local factor contributing to traffic accidents, but its resolution is much too wide to be able to base road-safety programs upon it. A further development of this idea, on a local basis, will thus be of great help in the field.

KEYWORDS: traffic accidents, gender, Israel

