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Psychological aspects of aggressive behavior in traffic of drivers – parents transporting children

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Introduction

Negative phenomena in social relations, on the road, they seem to be gaining momentum, that in connection with the development of motorization and the construction of road networks in recent years, it becomes more and more disturbing trend. Road rage, according to the researchers of this problem, is a growing problem in most countries in the world[1]. The Gallup study[2] shows that 80 percent of drivers daily meets with the behavior, source of which is aggression. Abuse of audio signals, flashing lights, screaming, threatening with the fist, showing offensive gestures, cutting across and driving "on the bumper" are not socially acceptable behaviors, on the one hand[3], but very close to most of the drivers on the other. Similarly disturbing information of the National Road Safety Council shows, that 80 percent of drivers in Poland is experiencing road rage at least once a week. Wojciszke defines aggression as *behavior oriented to cause suffering of another man, who in turn is motivated to avoid this suffering*[4].

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[1] J. P. DePasquale, E. S. Geller, S. W. Clarke, L. C. Littleton, *Measuring road rage – Development of the propensity for angry driving scale*, "Journal of Safety Research" 2001, 32 (1), p. 1–16; D. Parker, T. Lajunen, H. Summala, *Anger and aggression in three European Countries*, "Accident Analysis and Prevention" 2002, No. 34.

[2] The Gallup Organization, *Aggressive behaviour behind the wheel,* http://www.unece.org/trans/roadsafe/docs/gallup_e.pdf (cited on: 26.05.2014).

[3] M. Join, *Road rage*, http://www.aaafoundation.org/pdf/agdr3study.pdf (cited on: 26.05.2014); R. Naatanen, H. Summala, *Road-user behaviour and traffic accidents*, "Elsevier" 1976.

[4] B. Wojciszke, *Człowiek w relacji z innymi*, [w:] *Psychologia. Podręcznik akademicki*, t. 3, red. J. Strelau, Gdańsk 2000, p. 147.

A multitude of explanations of the road aggression sources makes the issue very complex and it must be considered at several levels. The increase in this phenomenon[5] forces the transport psychologists to try to distinguish between aggressive driving and aggressive drivers. Aggressive driving, as driving in a manner likely to cause an accident, is a behavior rather incidental. In the case of an aggressive driver, aggression is the rule rather than something rare and unique, and results from the personality traits and lifestyle. Speeding, disregarding for traffic regulations and scorning of other road users are already in their case the norm. Research conducted at the Department of Psychology, University of Warsaw point precisely on personality, as a major factor in driving safety, even more, according to the authors, than the mobility efficiency[6]. Correlations of basic temperament types with accident rate show that representatives of all types of temperament make mistakes of exceeding standards, although cholerics also commit other errors at a high level. The Institute of Road Transport (ITS) under the direction of Jadwiga Bąk[7] has analyzed the drivers, the perpetrators of accidents, participating in the training. It has been shown that the level of anxiety, aggression, especially temperament act a significant role in the process of driving a vehicle. High activity and the need for stimulation was also a risk factor of accidents, because people characterized by such features tend to take actions that lead to dangerous situations on the road. Analysis above shows that aggressive drivers are mostly young, impulsive, mostly men, although there are a number of studies suggesting that young drivers are more tolerant of a variety of stressful situations and react less aggressive[8].

Research of Canadian scientists from the University of Ottawa, however, confirm that just young men turn out to be most convinced of their superiority over other drivers[9]. Higher frequency of accidents among young drivers is explained precisely by this tendency. The concept of road rage has reached several varieties. Grunt-Meyer brings aggressive driving, road rage and fury[10] as the aggressive behaviors of different intensity. Currently, road rage phenomenon is defined as comprising both milder and more severe forms of aggressive response on the road[11].

[5] M. Join, op. cit.; *The Lex report on motoring*, Lex, London 1996.

[6] M. Biernacki, *Związek wieku oraz wybranych cech osobowości z funkcjonowaniem poznawczym – analiza w kontekście zachowań drogowych* (PhD thesis), Warszawa 2013.

[7] J. Bąk, *Wypadki drogowe a kształcenie młodych kierowców*, Warszawa 2003.

[8] J. Grunt-Mejer, *Społeczne i osobowościowe uwarunkowania agresji drogowej* (Master's thesis), Warszawa 2010.

[9] A. Stinchcombe, S. Gagnon, *Driving in dangerous territory; complexity and road – influence attentional demand*, "Transportation Research Record", part F, "Psychology & Behavior" 2010, p. 388–396.

[10] J. Grunt-Mejer, K. Grunt-Mejer, *Agresja drogowa: jej uwarunkowania i metody pomiaru*, „Psychologia Społeczna" 2011, nr 2 (17), p. 159–168.

[11] N. J. Ward, M. Waterman, M. Join, *Rage and violence of driver aggression*, "Behavioural Research in Road Safety" 1998, No. VIII, p. 155–167.

Studies show the differences between road aggression, and aggression in other contexts of life. Parkinson[12] as one of the main differentiating features gives the difficulty of instant communication in case of road aggression and lower motivation to refrain from aggressive behavior because of interpersonal reasons. Literature gives different conditions of road aggression. Road rage stimulating factor may be, for example, the use of a car as the only mean of transport[13]. The author explains this situation by less empathy of people not participating in traffic in other forms than driving in a closed car, for example users of public transport, cyclists. It is generally accepted that the relationship between the accident rate and the age is U-shaped. This means that we observe the highest accident rates of drivers under 25 years of age. After this the accident rate decreases and then from 60 years of age begins to grow steadily again[14]. However, the relationship between age and experience of the driver, and the various manifestations of road rage[15], turns out to be rather apparent.

Another analyzed factor associated with aggression in traffic is sex. The data about the differences between the sexes do not allow to draw clear conclusions and require further exploration of this area. Many factors indicate that in the traffic situation women are just as aggressive as men[16]. Sullman`s[17] analyzes indicate even a higher level of road rage in females, which the author explains as a way to recover from the stress of a multitude of roles that women play.

Other analyzes show that sometimes women surpass men in verbal aggression towards other drivers[18]. The author explains that women are more likely than men to use harsh expressions in relation to other traffic participants and their verbal aggression is composed of mostly loud name-calling, name-calling under his breath, loud cursing, and yelling at other drivers. Research of Schwebel, Severson,

[12] B. Parkinson, *Anger on and off the road*, "British Journal of Psychology" 2001, vol. 92, p. 507–526.

[13] J. Grunt-Mejer, op. cit.

[14] B. Broughton, *The variation of car drivers accident risk with age*, [in:] *Report RR135. Transport and Road Research Laboratory*, Crowthorne 1988; G. McGwin, D. B. Brown, *Characteristics of traffic crashes among young, middle aged, and older drivers*, "Accident Analysis & Prevention" 1999, No. 31, p. 181–198.

[15] J. Deffenbacher, M. Huff, R. Lynch, E. Oetting, N. Salvatore, *Characteristics and treatment of high anger drivers*, "Journal of Counseling Psychology" 2000, No. 47, p. 5–17; B. Parkinson, op. cit.

[16] J. R.Lightdale, D. A. Prentice, *Rethinking sex differences in aggression: Aggressive behaviour in the absence of social roles*, "Personality and Social Psychology Bulletin" 1994, No. 20, p. 34–44.

[17] M. Sullman, *Anger amongst New Zealand drivers*, "Transportation Research" 2006, No. 9 (3), part F, p. 173–184.

[18] K. Konieczna, http://www.centrumprasowe.swps.pl/informacje-prasowe/badania/1923-kto-jest-agresywny-za-kokiem-kobiety (cited on: 10.06.2014).

Ball and Rizzo[19] shows that the search for experience is a feature most positively correlated with road aggression. Analyses of Dahlen, Martin, Ragan and Kuhlmana[20] show that the search for experience, as well as impulsivity and susceptibility to boredom were most positively correlated with dangerous driving. Research on individual differences quoted by Fuller seems to confirm this conjecture[21]. People with a high level of feature known as seeking impressions are more prone to speeding, overtaking, also prefer short trips, and what is crucial, they are more frequent culprits of accidents[22].

As shown by the above considerations, road aggression has been linked with a variety of individual factors, among which the most interesting is the perception of themselves as being treated unfairly in the workplace[23], or own criminal record[24], and even an obsession with driving[25] or threatened self-esteem[26].

The following study focuses on the question whether drivers – parents transporting their children in the vehicle exhibit aggressive behavior to a lesser extent than those without children. Will the difference in aggressive behavior between men and women also be crucial when children are transported in a vehicle? The final question posed by the following analysis is whether the fact that parents carry children in a vehicle is a function of moderator of aggressive drivers. The study is also an another attempt to seek psychological determinants of aggressive behavior of drivers, in this case – the parents.

[19] D. Schwebel, J. Severson, K. Ball, M. Rizzo, *Individual difference factors in risky driving: The roles of anger/hostility, conscientiousness, and sensation seeking*, "Accident Analysis and Prevention" 2006, No. 38, p. 801–810.

[20] E. Dahlen, R. Martin, K. Ragan, M. Kuhlman, *Driving anger, sensation seeking, impulsiveness, and boredom proneness in the prediction of unsafe driving*, "Accident Analysis and Prevention" 2005, No. 37, p. 341–348.

[21] R. Fuller, *Towards a general theory of driver behaviour*, "Accident Analysis and Prevention" 2005, No. 37, p. 461–472.

[22] B. A. Jonah, *Sensation seeking and risky driving: a review and synthesis of the literature*, "Accident Analysis and Prevention" 1997, No. 29, p. 651–665.

[23] B. Hoggan, M. Dollard, *Effort-reward imbalance at work and driving anger in an Australian community sample: Is there a link between work stress and road rage?*, "Accident Analysis and Prevention" 2007, No. 39, p. 1286–1295.

[24] P. Smith, M. Waterman, N. Ward, *Driving aggression in forensic and non-forensic populations: Relationships to self-reported levels of aggression, anger and impulsivity*, "British Journal of Psychology" 2006, No. 97 (3), p. 387–403.

[25] F. Philippe, R. Vallerand, I. Richer, É. Vallières, J. Bergeron, *Passion for driving and aggressive driving behaviour: A look at their relationship*, "Journal of Applied Social Psychology" 2009, No. 39 (12), p. 3020–3043.

[26] G. Steffgen, M. Gollwitzer, *Emotions and aggressive behaviour*, Göttingen 2007.

The test procedure

Subjects. In order to answer this question, a group of 90 drivers were tested, of which half were parents regularly carrying children in the car. Among the respondents there were 43 women, whose ages ranged from 20 to 44 years (M = 25.53, SD = 5.80) and 47 men aged between 20 and 39 years (M = 28.39, SD = 3.64).

The method of research. Two tools were used in this study: The Popular Emotional Intelligence Questionnaire PKIE[27] and Impulsivity Questionnaire IVE[28]. PKIE questionnaire consists of four scales. Acceptance Scale examines the acceptance and the use of own emotions in action. This scale correlates most with empathy and understanding of own emotions and allows man to express what he feels, to disclose both positive and negative emotions. Thanks to this ability a man realizes that experienced emotions carry important information about himself and the world. Empathy Scale examines the ability to understand and recognize other people's emotions. It coexists the most with acceptance, and low or not at all with control and understanding of emotions. The higher value is listed in women. It allows to recognize what other people are going through and distinguish the sincere and insincere expressions of feelings and accurate reading of the intentions of others. Scale of Control of own emotions is most strongly associated with the understanding of emotions, and the least or not at all with acceptance and empathy. It is higher in men. This scale allows for conscious controlling of own emotions – inducing certain emotions, directing their course, as well as the silencing of unwanted ones. Scale of Understanding of the emotions is most strongly associated with the control of emotions, the least with acceptance and empathy. Listed in men as strategic aspects of emotional intelligence, but as elements of experiential intelligence it achieves higher scores in women. It allows the individual to be aware of what he is experiencing at the moment, to name experienced feelings, to distinguish weaker and stronger emotions and not to confuse them with another similar feelings.

Impulsivity questionnaire IVE consists of three scales. Impulsivity scale examines impulsivity[29], understood as the pathological aspect of the risky behaviors associated with not predicting the consequences of own actions. The Scale of inclination to take risks, is similar to impulsivity, but differs by the fact that while impulsive people risk not taking into account the consequences of his behavior, and

[27] A. Jaworowska, A. Matczak, *Popularny Kwestionariusz Inteligencji Emocjonalnej PKIE,* Warszawa 2005.

[28] A. Jaworowska, *Kwestionariusz Impulsywności IVE*, Warszawa 2011.

[29] H. Eysenck, S. Eysenck, *Podręcznik do skal osobowości Eysencka. (EPS dla dorosłych)*, Warszawa 2011.

people inclined to risk seek challenges and behave recklessly, but also take into account the possible consequences of their actions. The Scale of empathy, similarly to the Popular Emotional Intelligence Questionnaire, refers to empathizing emotions experienced by other people. In this study the poll has also been used, in which respondents were asked on a four point scale to respond to the symptoms of various forms of aggressive behavior in traffic.

The results

Studies have shown specific, statistically significant differences between male and female drivers in the manifestation of various forms of aggressive behavior, the largest of which refers to breaches of the rules in general, honking and overtaking in anger. Only speeding does not differ male and female drivers (table 1).

Table 1. The differences between male and female drivers in aggressive behavior in traffic

Aggressive behavior	**Women** *M (SD)*	**Men** *M (SD)*	**The significance of differences** *T(p)*
Breaking the law	2,37 (1,00)	3,12 (0,71)	4,15(0,0000)
Speeding	2,58 (1,27)	2,91 (0,95)	1,41(0,1612)
Rapid response to errors	1,93 (0,73)	2,36 (1,00)	2,29(0,0239)
Honking	1,30 (0,80)	2,97 (0,92)	9,16(0,0000)
Screaming in a closed car (indirectly)	1,81 (0,87)	2,31 (1,08)	2,41(0,0179)
Screaming directly	1,25 (0,53)	1,89 (0,97)	3,76(0,0002)
Offensive gestures	1,18 (0,54)	1,95 (0,99)	4,48(0,0000)
Overtaking in anger	1,18 0,79)	2,70 (0,90)	8,40(0,0000)
Racing against others	1,02 (0,63)	2,34 (1,06)	7,02(0,0000)
The desire to harm others	1,04 (0,21)	1,93 (0,86)	6,52(0,0000)
Bad request	1,23 (0,42)	1,55 (0,71)	2,54(0,0125)

Another analysis of the student's t-test concerned the difference between male and female drivers that do not have children. In all manifestations of aggressive behavior men without children evinced significantly higher levels of these behaviors (table 2).

Table 2. The difference between men and women not having children in the various manifestations of road rage

Aggressive behavior	**Women** *M (SD)*	**Men** *M (SD)*	**The significance of differences** *T(p)*
Breaking the law	2,30 (1,04)	3,17 (0,77)	3,66 (0,000)
Speeding	2,57 (1,29)	3,39 (0,83)	2,86 (0,005)
Rapid response to errors	1,96 (0,80)	2,78 (0,99)	3,53 (0,000)
Honking	1,30 (0,84)	2,96 (1,03)	6,89 (0,000)
Screaming in a closed car (indirectly)	1,81 (0,57)	2,92 (0,93)	4,85 (0,000)
Screaming directly	1,27 (0,61)	2,42 (0,92)	5,97 (0,000)
Offensive gestures	1,24 (0,84)	2,42 (0,99)	5,68 (0,000)
Overtaking in anger	1,18 (0,55)	2,92 (1,01)	7,32 (0,000)
Racing against others	0,93 (0,24)	2,75 (1,17)	7,88 (0,000)
The desire to harm others	1,06 (0,26)	2,35 (0,82)	8,60 (0,000)
Bad request	1,24 (0,43)	1,85 (0,75)	3,96 (0,000)

The most interesting is an another analysis showing the change in aggressive behavior of men in the situation of transporting children in the vehicle. In the absence of material differences in all aspects of aggressive behavior between women having and not having children (table 3), men with children significantly differ from men without children in almost all aspects of aggressive behavior (table 4).

Table 3. Differences between female drivers not having and having children in the range of aggressive behavior

Aggressive behavior	**Having children** *M (SD)*	**Not having children** *M (SD)*	**The significance of differences** *T(p)*
1	*2*	*3*	*4*
Breaking the law	2,60	2,30	0,81 (0,417)
Speeding	2,60	2,57	0,05 (0,958)
Rapid response to errors	1,80	1,96	0,63 (0,529)
Honking	1,30	1,30	0,01 (0,991)
Screaming in a closed car (indirectly)	1,80	1,81	0,05 (0,955)
Screaming directly	1,20	1,27	0,37 (0,713)
Offensive gestures	1,00	1,24	1,23 (0,222)

Continuation tab. 3

1	*2*	*3*	*4*
Overtaking in anger	1,20	1,18	0,06 (0,950)
Racing against others	1,30	0,93	1,60 (0,117)
The desire to harm others	1,00	1,06	0,78 (0,437)
Bad request	1,20	1,24	0,27 (0,787)

Table 4. Differences between male drivers not having and having children in the range of aggressive behavior

Aggressive behavior	**Having children** *M (SD)*	**Not having children** *M (SD)*	**The significance of differences** *T(p)*
Breaking the law	3,05	3,17	0,59 (0,556)
Speeding	2,21	3,39	5,24 (0.000)
Rapid response to errors	1,73	2,78	4,03 (0,000)
Honking	3,00	2,96	0,12 (0,897)
Screaming in a closed car (indirectly)	1,42	2,92	6,37 (0,000)
Screaming directly	1,10	2,42	6,01 (0,000)
Offensive gestures	1,26	2,42	4,75 (0,000)
Overtaking in anger	2,36	2,92	2,15 (0,036)
Racing against others	1,73	2,75	3,57 (0,000)
The desire to harm others	1,31	2,35	4,95 (0,000)
Bad request	1,10	1,85	4,08 (0,000)

Drivers irrespective of the fact of having children achieved average results in scales of acceptance of emotions, empathy, emotional control and understanding of emotions. The highest score was obtained by male drivers with children on the scale of emotional control and general outcome. In these scales as well as on the scale of tendency to risky behavior male drivers having children significantly differ from male drivers without children. Also female drivers received rather average results at all scales of emotional intelligence, as well as on the scale of impulsiveness and tendency to risky behavior. The study does not indicate statistically significant differences between female drivers having and not having children (table 5).

Table 5. Differences between men possessing and lacking the children and women drivers having and not having children in the range of emotional intelligence, impulsivity and inclination to take risks

Features	**Male drivers having children** *M* (*SD*)	**Male drivers not having children** *M* (*SD*)	**The significance of differences** *t* (*p*)	**Female drivers having children** *M* (*SD*)	**Female drivers not having children** *M* (*SD*)	**The significance of differences** *t* (*p*)
Acceptance of emotions	6,15 (0,68)	6,28 (1,76)	0,30 (0,765)	5,20 (1,22)	5,51 (2,51)	0,38 (0,705)
Empathy	7,00 (0,01)	6,35 (1,12)	2,47 (0,017)	5,00 (1,88)	5,69 (2,21)	0,89 (0,373)
Control of emotions	8,00 (0,05)	6,53 (2,58)	2,45 (0,018)	6,50 (1,64)	5,30 (2,24)	1,55 (0,126)
Understanding of emotions	6,25 (0,22)	5,21 (1,89)	1,91 (0,061)	5,80 (1,49)	5,42 (1,83)	0,59 (0,555)
I-E general score	8,00 (1,44)	6,50 (1,83)	3,54 (0,0000	5,65 (1,69)	5,48 (2,30)	0,40 (0,691)
Impulsivity	5,94 (1,22)	6,53 (1,37)	1,84 (0,071)	5,70 (2,09)	4,75 (1,73)	1,58 (0,120)
Inclination to take risks	7,57 (1,68)	9,84 (2,97)	3,25 (0,002)	5,12 (2,46)	7,10 (1,94)	2,64 (0,311)

Analysis of variance (ANOVA) shows clear differences in average results of some manifestations of aggressive behavior depending on the severity of the performance of individual features of emotional intelligence, impulsivity and inclination to take risks divided into low, average, high. There has been made the analysis of the manifestations of aggressive behaviors that had achieved the highest average. Analysis of *overtaking in anger* and *control of emotions* shows that the main difference (Tukey's test for different N) is present between the results of a high average and a low average (p = 0.000); *overtaking in anger* and *acceptance of emotions* shows that the main difference (Tukey`s test for different N) exists between the results of high and low (p = 0.013); *overtaking in anger* and *inclination to take risks* shows that the main difference (Tukey`s test for different N) occurs between the high and average results as well as between high and low. A similar analysis of *honking* and *the control of emotions* shows that the main difference (Tukey`s test for different N) exists between the results of high and average and between average and low (p = 0.000); *honking* and *impulsivity* shows that the main difference (Tukey's test for different N) is present between the results of high and low (p = 0.037); *honking* and *inclination to take risks* shows that the main difference

(Tukey's test for different N) is present between the results of the average and the high and between high and low (p = 0.000) (table 6 and 7).

Table 6. Analysis of variance ANOVA level of aggressive behaviors (overtaking in anger) depending on the severity of the features of IE, inclination to take risks

Features	**Low** *M* (*SD*)	**Average** *M* (*SD*)	**High** *M* (*SD*)	***ANOVA*** *F* (*p*)
Acceptance of emotions	1,09 (0,53)	2,03 (0,03)	2,30 (0,45)	4,51 (0,013)
Control of emotions	2,08 (0,08)	1,06 (0,85)	2,55 (0,92)	24,29 (0,000)
Inclination to take risks	1,15 (0,68)	1,57 (0,97)	2,57 (0,88)	14,77 (0,000)

Table 7. Analysis of variance ANOVA level of aggressive behaviors (honking) depending on the severity of the features of IE, impulsivity and inclination to take risks

Features	**Low** *M* (*SD*)	**Average** *M* (*SD*)	**High** *M* (*SD*)	***ANOVA*** *F* (*p*)
Acceptance of emotions	2,50 (0,24	1,16 (0,77)	2,76 (0,99)	27,04 (0,000)
Control of emotions	1,44 (0,72)	2,18 (0,26)	2,88 (0,92)	3,41 (0,037)
Inclination to take risks	1,23 (0,72)	1,77 (0,03)	2,80 (0,13)	15,66 (0,000)

The study shows that the characteristics of emotional intelligence, impulsivity and inclination to take risks, correlate with certain forms of aggressive behaviors of drivers. Analysis showed that in the case of female drivers carrying children screaming in a closed car correlates negatively with inclination to take risks, and honking with the general result of emotional intelligence. Violent reaction to errors of other road users coincides with the inclination to take risks in female drivers not having children (table 8).

Table 8. The interdependence of features of emotional intelligence, impulsivity and inclination to take risks with the various manifestations of aggressive behaviors in traffic of women with and without children

Aggressive behaviors	**I-E general score female drivers having children** *R(p)*	**Inclination to take risks female drivers having children** *R(p)*	**Inclination to take risks female drivers not having children** *R(p)*
Rapid response to errors	-----	----	0,47 (0,031)
Screaming in a closed car (indirectly)	-----	- 0,74 (0,014)	-----
Honking	0.66 (0,035)	-----	-----

It is worth to notice the correlation between a screaming directly and acceptance of emotions, in the case of male drivers without children, and a negative correlation between the understanding of emotions and the desire to harm other road users. Other compounds of characteristics of emotional intelligence, impulsivity and inclination to take risks with aggressive behavior of men with and without children is ilustrated in table 9.

Table 9. Interdependence features of emotional intelligence, impulsivity and inclination to take risks with various manifestations of aggressive behavior in traffic of men having and not having children

Aggressive behavior	**Acceptance of emotions male drivers without children** *R(p)*	**Understanding of emotions male drivers without children** *R(p)*	**Impulsivity male drivers with children** *R(p)*	**Inclination to take risks male drivers with children** *R(p)*	**Inclination to take risks male drivers without children** *R(p)*
1	*2*	*3*	*4*	*5*	*6*
Rapid response to errors	-----	-----	0,43 (0,021)	-----	0,47 (0,010)
Screaming in a closed car (indirectly)	-----	-----	-----	-----	0,66 (0,000)

Continuation tab. 9

1	*2*	*3*	*4*	*5*	*6*
Screaming directly	0,42 (0,25)	-----	-----	-----	0,65 (0,000)
Honking	-----	-----	-----	0,64 (0,003)	0,62 (0,000)
Overtaking in anger	-----	-----	-----	0,55 (0,14)	0,30 (0,00)
Racing against others	-----	-----	-----	-----	0,58 (0,001)
The desire to harm others	-----	-----	0,46 (0,014)	-----	-----
Bad request	-----	-0,42 (0,022)	0,48 (0,009)	-----	0,46 (0,014)

The last interesting analysis is the coexistence of emotional intelligence features with impulsivity and risk-taking. In men and women, regardless of the fact of possession and transporting children characteristics of emotional intelligence significantly negatively correlate with impulsivity and positively with the willingness to take risks (table 10).

Table 10. The co-occurrence emotional intelligence features with impulsivity and risk-taking in men and women

Features	**Impulsivity** *M r(p)*	**Impulsivity** *K r(p)*	**Inclination to take risks *M*** *r(p)*	**Inclination to take risks *K*** *r(p)*
Acceptance of emotions	- 0,29 (0,042)	-----	0,64 (0,000)	0,39 (0,009)
Empathy	-----	-----	0,32 (0,023)	----
Control of emotions	-093 (0,000)	- 0,48 (0,001)	0,32 (0,026)	----
Understanding of emotions	-0,84 (0,000)	----	----	----
I-E general score	-0,90 (0,000)	- 0,33 (0,027)	0,35 (0,014)	0,36 (0,040)

Discussion

The fact of transporting a child in the vehicle turns out to be related to the style of driving, and therefore to the safety on the road. Researchers from the University of Michigan show that 90 percent of drivers – parents while transporting their children by car, performs at the same time various other activities, including talking on the phone, writing text messages and change the disc[30]. Parents – drivers disperse also in other ways. The results presented at the meeting of Pediatrics Academic Societies in Washington show that 70 percent of parents – drivers declare performing activities related to the child, such as feeding or lifting a dropped toy. Also, 70 percent of drivers admit that in the car look after their body, for example, eat and performs treatments. Perhaps the need for greater empathy, control and understanding of emotions during child care provides drivers – parents sufficiently high level of communication, which results in a smaller motivation to aggressive behavior. Parents carrying children, focusing on safe driving, on the one hand, and continuous care of the realization of the child's needs no longer have the time or desire to engage in road aggression.

Studies clearly show the diversity in forms of aggressive behavior concerning sex. Male respondents, especially without children, exhibit aggressive behavior at a significantly higher level than women. Numerous studies do not provide conclusive results on this phenomenon. According to the analyzes conducted by psychologists of Motor Transport Institute, there was a strong connection between the driver's gender and the level of committing traffic violations[31]. The average level of wrongdoing for women differs significantly from the average for men. Men tend to commit more traffic violations than women. Researchers from the Prince Henry's Institute in Melbourne argue that the reason for this may be a gene, characteristic of male[32], which makes men more than women aggressive in the face of stress. Australian researchers suggest that the gene Sex Determining Region (SRY) may increase blood flow to organs and cause that they react to stress by increased secretion of catecholamines. This causes at the same time increase the level of aggression and the so-called reaction of "fight or flight". In women, a so-called care and align reaction occurs frequently and estrogen inhibits aggression. These studies confirm the significantly higher mean taking aggressive behavior by men. However, the

[30] M. Macy, P. Carter, R. Cunningham, G. Freed, *Potential distractions and unsafe driving behaviours among drivers of 1 – to 12 – to years-old children*, „Academic Pediatrics" 2014, No. 14 (3), p. 279–286.

[31] E. Odachowska, *Temperament a skłonność do zachowań ryzykownych w ruchu drogowym*, „Transport Samochodowy" 2012, nr 1/12.

[32] L. Joohyung, V. Harley, *The male fight – flight response: a result of SRY regulation of catecholamines*, "BioEssays" 2012, p. 454–457.

essential question to be asked, looking at the next analysis, is what is happening with men, that during transporting children in the car, taking by them aggressive behavior so radically changes, what we do not record in the results of women in situations of carrying minors in the vehicle.

The research of scientists from the University of Trieste, the University of Vienna and the University of Freiberg indicates that under stressful situations in men there increases concentration on himself and falls the ability to sense the emotions and intentions of other people, while in women the tension conducives to intensification of empathy and increasing sensitivity to the needs the environment[33]. Stressed men are more self-centered, and women are pro-social. However, men, carrying children, do not have the comfort of concentration only on themselves and probably because of this in a situation of stress in traffic react in a manner characteristic more for women. The men showed significantly higher levels of empathy, emotional control and overall result of emotional intelligence than men without children. Perhaps this sensitivity to the emotions experienced by others made that they have not recorded the material differences in relation to women in all aspects of aggressive behavior. Men without children are different in all aspects of aggressive behavior in traffic from women. However, once they have children, then during carrying them in a car, significant differences in relation to women remain only in the realm of honking, overtaking the anger and the desire to harm others. Studies seem to confirm the sentence of Lawton and Nutter[34], that women express aggression in indirect way, and men in more direct forms[35]. The study opens new questions and creates a place for subsequent analysis. Puzzling question is whether the results indicate that we should therefore encourage men to as often as possible transport their children in cars – because it soothes their aggression, or they may lead to the conclusion that if aggressive behavior becomes milder in men carrying their children, it can mean that these behaviors are more situationally conditioned than personally? Certainly they allow for the supposition, worthy of further analysis in this area, that fact that parents carry a child in the vehicle significantly moderates the road aggression, reducing the tendency to aggressive behavior of drivers – parents. In particular, the relationship revealed in a situation when a child is transported by the driver – a man. A child and interaction with him while driving turns out to be the part of the motivation for reducing aggressive behavior in traffic.

[33] L. Tomova, B. Davans, M. Heinrichs, G. Silani, C. Lamm, *Is stress affecting our ability to tune into others? Evidence for gender differences in the effects of stress on self-other distinction*, [in:] *Psychoneuroendocrinology*, http://dx.doi.org/10.1016/j.psyneuen (cited on: 6.02.2014).

[34] R. Lawton, A. Nutter, *A comparison of reported levels and expression of anger in every day and driving situations*, "British Journal of Psychology" 2002, No. 93 (3), p. 407–423.

[35] J. Deffenbacher, L. Filetti, R. Lynch, E. Dahlen, E. Oetting, *Cognitive-behavioural treatment of high anger drivers*, "Behaviour Research and Therapy" 2002, No. 40, p. 895–910.

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Summary

The issue of aggressiveness on the road today is a huge problem. Accidents with participation of drunken drivers, verbal hassles are a common view on the Polish streets nowadays. Statistics show that young drivers are the most often causers of such behaviour. Statistics of road accidents show that driver with age becomes more responsible, less inclined towards aggression on the road. But is it really so? Certainly in a large compound with aggressive behaviours are personality determinants. Parenting is also factor connected with such behaviour. The drivers, who are parents travelling with their own children in the vehicle, control their emotions, on the one hand, and show more patience on the other, have less tendency to an aggressive behaviour. The application is the thesis that parenthood, is a significant factor that modulates the aggressive behaviour on the road.