



Report no. 2018-T-10-SEN

## **Risk taking and aggression**

Thematic file Road safety N°20



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## Summary

This thematic dossier deals - in a general road safety context - with the (pre-)willingness to take risks and to show aggressiveness while driving.

In doing so, one of the first steps undertaken in this report was to clarify these concepts (section 1.1) because there is no standard and unanimous definition of them; this complicates the conduct and comparison of studies addressing these issues. Some researchers consider aggression in traffic strictly as behaviour aimed at harming others, such as verbal or physical aggression. This is also referred to as emotional aggressiveness. However, other authors broaden this definition by adding behaviours that involuntarily put other people at risk to achieve a personal goal. In this sense - also referred to as instrumental aggressiveness - the potential harm is tacitly assumed even though the intent to harm is not the cause of the mischief. These may include, for example, speeding, risky overtaking or failure to respect safety distances. These behaviours may also be related to a predisposition to take risks. The tendency to take risks can be understood as a type or trait of personality and is therefore stable in the person. On the other hand, it underlies a certain form of aggressiveness (or rather endangerment) which, if it is not intentional, can be directed both towards others and towards oneself - the person also endangerment by taking risks. Finally, the notions of risk-taking and aggressiveness at the wheel refer to the notion of "anger at the wheel". This notion of "anger at the wheel" is an emotion that results mostly from frustration - related to the traffic situation - but does not necessarily lead to any form of aggressiveness.

A review of the available literature and empirical data (Section 1.2) indicates that road users and experts indicate that aggressiveness and risk-taking behaviour while driving is not a rare phenomenon and appears to be on the rise in traffic. Various research results document the prevalence, perception and risk of collision resulting from aggressive and risky behaviour in traffic as well as the characteristics of the road users involved. Nevertheless, the various studies show very varied figures, particularly because of a lack of a clear and unambiguous definition of the concepts investigated and the difficulty of operationalizing them and understanding them empirically. For example, aggressive behaviour does not systematically result in an offence or an arrest and behaviour perceived as aggressive may simply be the result of distraction or negligence.

In any case, aggression and risk-taking have important implications for road safety (Section 1.3). A large-scale European survey (ESRA 2015), for example, has shown that almost half of all motorists report an increase in aggressive and careless drivers in recent years. 48% of ESRA 2015 drivers admitted to driving aggressively at least once in the past year and about 61% did not respect the safety distance from the vehicle in front of them at least once. A real-world driving study conducted in the United States revealed a 13.5-fold increase in the risk of collision when safety distances are not respected and a 14.4-fold increase in the risk of collision when passing illegally or dangerously. In addition, ESRA 2015 data indicate that road users who drive in a dangerous and aggressive manner while neglecting the safety distance from the vehicle in front of them are more involved in accidents. However, respondents themselves defined what they consider "aggressive". A statistically significant association between the probability of being involved in an accident and the increasingly severe forms of aggression reported by the driver (intentional aggressive behaviours only) was found in a Canadian sample.

Aggressiveness and risk-taking were also investigated in terms of their probable causes and possible contributing factors (Section 1.4). While intentional aggression is usually the result of frustration or anger (in traffic, for example due to traffic congestion or the behaviour of others), unintentional aggression is often a learned behaviour (e.g. awkward or abrupt driving style). However, the expression of frustration or anger depends on situational and behavioural factors. Situational factors include, for example, current mental state, time pressure and impairment due to substance use or the presence of other observers. Dispositional influencing factors are gender and age (young men tend to be more aggressive), personality traits (such as sensation-seeking or impulsivity) and clinical aspects (such as narcissism). In addition, perception biases play a role in the occurrence of aggression. For example, individuals are subject to "hostile attribution bias", which is the tendency to interpret observed behaviour as hostile, even if it is neutral or benevolent. The perceived aggression in turn can trigger an additional aggression. The willingness to take risks in traffic is also associated with gender, age and similar personality traits, but also with the tendency to be bored, lack norms and the tendency to take risks even outside traffic.

Section 2 of this report provides an inventory of different approaches and measures to prevent or reduce aggressive and risky behaviour. These vary considerably, ranging from law enforcement to education, sensitization or driving learning aspects (such as teaching perception bias, raising awareness among novice drivers or specific training for at-risk groups), training similar to alcohol-impaired driving programs, interventions and therapeutic measures (such as developing coping strategies or relaxation training). In addition, more "lenient" infrastructure, and driver assistance systems (e.g. detection of emotional states) can be useful in mitigating the effects of harmful behaviour on the road or even preventing its occurrence. Finally, aspects relating to legislation and its enforcement can also contribute to a better consideration of aggressiveness, risk-taking and associated dangers. These aspects concern in particular a system of increased penalties when an offence is committed in a context of aggression or the establishment of a Community system of vigilance against aggression - where testimonies of acts of violence/aggression can be reported to the authorities. Overall, these types of measures appear to be effective, although very few studies have yet empirically demonstrated their effectiveness.

In addition to the literature review, which aims to report on the current state of knowledge in this field and the possible and available measures to curb the phenomenon of aggressiveness and/or risk-taking at the wheel, this thematic dossier also gives particular emphasis to the situation in Belgium. Thus, the regulations and measures in force - or planned - in our country were also examined and are presented in Section 3. Strictly speaking, there is no law specifically and directly concerning aggressiveness - and even less risk-taking - when driving, but some provisions have nevertheless been included in a Ministry of Justice directive dating from 2000. This directive provides for a system of increased penalties for traffic offences committed in a context of aggression and for acts of aggression that do not specifically constitute a traffic offence. Although it is not an obligation, the Directive nevertheless requires police forces to be more vigilant with regard to any act of aggression in traffic (e.g. drawing up detailed reports) and the public prosecutor to adopt increased sanctions - in a proportionate and adequate manner - for example by doubling the multiplier of fines, by using the summons, by proceeding more quickly to the withdrawal of the driving licence or by requesting the immobilisation/ confiscation of the vehicle. Although the merits of this directive are quite obvious, its effectiveness has, to our knowledge, never been firmly and empirically assessed.

Finally, key figures presented in Section 4 concern in particular the prevalence and evolution of aggression and risk-taking at the wheel, the socio-demographic characteristics of the people concerned and comparative data between Belgium and other EU countries. Several databases - national but also international (e.g. Touring, Vias institute, ESRA, etc.) - were examined and show fairly disparate prevalence and evolution levels (probably due to the concepts used and the target behaviours that can ostensibly vary from one study to another). For example, the rate of people reporting having been victims of aggression in traffic over the past 12 months varies between 14% and 57% depending on the study. Prevalence also varies according to the type of behaviour, with proven and intentional facts of aggression (e.g. bullying, physical assault, insults, obscene gestures) generally being less frequently reported than unintentional facts but nevertheless perceived as aggressive (e.g. failure to respect safety distances, dangerous passing, dangerous offences). In addition, in the ESRA 2015 study, respectively 37% and 41% of Belgian drivers surveyed acknowledged that they had driven in a dangerous or aggressive manner at least once in the past year. The ESRA 2015 study also revealed that a large majority of Belgian drivers surveyed (59%) considered that aggressiveness in traffic was on the rise. With regard to aggressive behaviour reported by the drivers interviewed, it appears that it is more frequent among young male drivers (although the studies are not unanimous on this point). Finally, compared to other EU countries, Belgian drivers report on average less dangerous and aggressive driving by other road users (37-41% for Belgian drivers vs. 41-47% for the European average).



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