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SOCIAL AND COGNITIVE BIAS IN THE CONTEXT OF ROAD TRAFFIC

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Currently, there is a great concern for the components related to road traffic, and especially for the central element represented by the man himself, i.e. the driver. In the specialized literature, there are a number of concepts from social or cognitive psychology already established in explaining risky driving behaviors. The article analyzes the types of social and cognitive biases, which represent specific illusions of traffic participants, distortions that in certain contexts can influence the behavior of drivers and cause accidents or human losses. Many of the drivers, especially those with little experience, do not know the inherent risk they are in, it being in some places veiled by these biases, and accordingly do nothing to prevent or avoid risky situations. Information and education about these issues can save lives.

Keywords*: drivers, risk, social and cognitive biases, prevention.*

BIASURILE SOCIALE ȘI COGNITIVE ÎN CONTEXTUL TRAFICULUI RUTIER

Actualmente se atestă o mare preocupare pentru componentele ce țin de traficul rutier și în special de elementul central reprezentat de omul în sine, adică conducătorul auto. *În literatura de specialitate există o serie de concepte provenite din psihologia socială sau cognitivă deja consacrate în explicarea comportamentelor riscante la volan. Articolul analizează tipurile de* biasuri sociale și cognitive, care reprezintă iluzii specifice ale participanților la trafic, distorsiuni care în anumite contexte pot influența comportamentul conducătorilor auto și cauza accidente sau pierderi umane. Mulți dintre conducătorii auto, în special cei cu puțină experiență nu cunosc riscul inerent în care se află, acesta fiind pe alocuri voalat de aceste biasuri și, respectiv, nu întreprind nimic pentru a preveni sau a evita situațiile de risc. Informarea și educația cu privire la aceste aspecte poate salva vieți.

Cuvinte-cheie: *conducători auto, risc, biasuri sociale și cognitive, prevenție.*

Introduction

In obtaining a driver’s license, all people follow the same path, there is a universal and equal form of training for everyone who wants to drive a motor vehicle, so, if every driver would respect and strictly follow everything that is taught in a driving school, with great certainty the overall picture in road traffic would be different than what can be observed currently. When we talk about the image of road traffic, we refer to: the various forms of aggression, the risky behavior, the number of accidents, the number of traumas, the number of violations, etc. Regardless of the behavior shown by the drivers, and how much or how little risk the drivers assume, it is certain that in the evaluation of traffic situations each person has a certain predisposition towards certain biases, which do not always have a positive role.

Bias is a subjective tendency of the individual, manifested through an error of judgment or reasoning, often unconscious, in a positive or negative sense, caused by internal or external influences on the person. For a general translation into Romanian, the most appropriate terms are distortion and prejudice, in social psychology – tendency or subjective preference, in cognitive psychology – error of judgment or influence of a phenomenon, in traffic psychology – illusion of drivers. As a whole, precisely these illusions can cause the distortion of the driver’s psychological reality when driving a motor vehicle [3].

In this context, we can delimit two categories of biases: biases of a social nature that are based on the evaluation of one’s own person and the evaluation of others, and cognitive biases that distort the subjective reality through errors of judgment or processing of information received from the external environment. Even if they are divided into two distinct categories, most biases are still a sociocognitive combination, so that in each bias we will find elements related to subjective reasoning and judgments, as well as elements related to the image of one’s own person. And, because we live in a world where, as the author Michael Fœssel states, arrogance has become a social passion, we cannot get over a first bias that is based on this

arrogance, namely the illusion of superiority [10]. In this case, it is about that type of behavior in which the person tends to place his own performance above that of others, even if in reality it is not quite true.

It is interesting to notice a sociological study led by James Reason, professor emeritus at the University of Manchester, England. In an attempt to understand what exactly causes traffic accidents, Reason surveyed 520 drivers, asking them to estimate how many times they committed violations and what the cause was: Did they not carefully check their position in the rearview mirror? Did they enter the wrong lane when approaching an intersection? Did they signal or not when they changed lanes? Alongside the questions, Reason asked them to self-assess their driving capabilities compared to others. Of the 520 drivers, only five rated themselves as weaker than average – less than 1%. The others, even the truly abysmal drivers who constantly made mistakes, considered themselves to be at least as good as most, or thought themselves much better. It was, essentially, a mass delusion that made them completely blind to their own failings. The consequences of this „blindness" are caused, in large part, by the tendencies of a society obsessed with success, which does not allow mistakes and which cruelly condemns any slip-up. But these slips exist, even if they are cosmeticized, and can be from serious to fatal – because the arrogance of a driver who thinks he is better than he really is can be the arrogance of a doctor, or a judge, or a political leader [2]. The greatest danger of this bias, and living it in traffic, is that it causes people not only to reach erroneous conclusions and make unfortunate choices, but the incompetence they indulge in prevents them from recognizing their own inabilities.

This type of bias can also take shape against the background of the phenomenon of social comparison described by the author L. Festinger. The evaluation process that each person carries out since childhood on their own physical and mental attributes, abilities, behaviors, performances in relation to others, continues in adulthood. Thus, people tend to resort to social comparison for several reasons: to self-evaluate; to strive for self-perfection, to strengthen and maintain their self-esteem. People compare themselves with others, not only to obtain relevant information regarding self-evaluation, but also to maintain and strengthen their self-esteem. This can be achieved most easily by comparing with those who have succeeded in life less than us, have more modest achievements (material, family, professional, etc.). This tactic is called .„downward social comparison", and it is a very good therapeutic tool that we use in our everyday life to maintain and strengthen our self-esteem [4].

The phenomenon of social comparison can be complemented by two other biases such as: the illusion due to exaggerated optimism and the illusion of control. Optimism error refers to an excess of optimism that usually characterizes drivers and causes them to judge that the chances of being involved in a negative event are lower than in reality. The error occurs when the majority assesses their own risk significantly below the group average and is produced by perceiving a low probability of negative events and a high probability of positive events. Thus, people are guided in their behavior by such thoughts: if something bad can happen, it will not happen to me in particular. In this case, people tend to believe that only others are vulnerable to the consequences of risky or unhealthy behaviors. It is believed that the optimism error could increase the chances that drivers will take risks or reduce the chances that they will take preventive and protective measures, such as wearing a seat belt. Also, due to this type of error, we could have a major inefficiency in the persuasiveness of some accident prevention campaigns, because these people will think that those messages are not addressed to them, but to other drivers, because they do not perceive themselves to be threatened by possible dangers. The illusion of control represents the belief that a person can deal with risky situations, in other words, it is the tendency of individuals to perceive that they have more control over their own behavior than they actually have [3]. Thus, people tend to believe that in the event that something unforeseen happens, they are very good drivers and will act in such a way that they will definitely be able to avoid an accident. Such an approach is nothing but an underestimation of the danger of risky situations for one's own person and, at the same time, an overestimation of one's own capacities and abilities.

Another type of bias commonly encountered in traffic is self-justification, which is the tendency to believe that one's own behavior is justified and justifiable, when the behavior of others is not. This type of bias can be seen in situations where the driver expresses their dissatisfaction with other drivers who speed past them, using criticism or specific remarks, while they themselves exhibit this type of behavior at the wheel,

but the fact that they are speeding is perfectly normal and usually justified by a „noble cause”. For example, a common justification for such drivers is related to the type of car driven, more precisely the brand of the car. Thus, the drivers of very technically well-equipped cars with powerful engines claim that such cars are made for speed.

In the article by the authors B. Claus and L. Warlop, we find an addition regarding the type of car and its connection with the risk in traffic. Starting from the idea that higher levels of social connectivity can give people a sense of security that positively affects their tolerance for risk in financial decisions – a mechanism he labels the „cushion hypothesis”, he comes to the idea that risk perception – not attitude toward risk – determines risk-taking behavior. Risk appraisals are much more affective than cognition-based appraisals, and risk tolerance is closely related to feelings of control. Comfort, stability and security in the social realm can make one feel supported, making financial risk seem less daunting. Conversely, losing control in one domain (a game) affects subsequent financial risk-taking, and focusing on loss control affects risk-taking in domains such as health, social environments, ethics, and gambling.

Similar to the general cushion hypothesis is proposed – the „car cushion hypothesis”: Larger cars give people a sense of security and control which — similar to other cases of security and control – will lead to taking more risks [7].

Even if this hypothesis was confirmed in a study, this would only represent one side of the coin, because we cannot overlook the fact that it is precisely the large and highly technically equipped automobiles that also have the highest survival rate in case of accident. At the same time, the accident is not always caused by the driver of this car, it can be another driver or other external factors, which would only justify the choice of drivers in favor of these cars, people choose comfort and safety.

Another bias that is on the same segment as self-justification, only at the opposite pole is – the false consensus. In the dictionary of psychology this concept is defined as the tendency to assume that one’s own opinions, beliefs, attributes or behaviors are more widely shared than they actually are. The false consensus effect is often attributed to the desire to see one’s thoughts and actions as appropriate, normal, and correct [5].

One of the main reasons this bias occurs is because it helps boost self-esteem, because believing that other people think and act the same way we do makes us feel good about ourselves, so we are motivated to think that other people are just like us.

Moreover, this type of thinking can justify our own behavior, which happens in traffic when drivers who engage in certain violations believe that other road users also commit the same violations and even with a higher frequency [6].

Thus, a driver under the influence of this type of bias will most likely tend to exhibit risky behavior considering it common and appropriate.

As I mentioned before, most biases are still a socio-cognitive combination, and when we talk about the cognitive side, we mean the errors that inevitably occur at the level of cognitive-sensory mental processes – perception, higher mental processes – memory, thinking, or mental states – attention, which can cause any of the following effects:

- Distortion of some aspects of the reality perceived by the driver compared to the objective reality;
- Logical errors (judgment or information processing);
- Inappropriate or contraindicated actions in regulating driving behavior [3].

Perception consists in a knowledge of objects and phenomena in their integrity and at the moment when they act on the sensory organs [1].

Perceptual bias refers to the tasks that a driver has to perform when behind the wheel, such as: estimating the speed of travel and the surrounding elements, the distances between these objects, as well as the combinations of all these variables in order to act efficiently according to the available time. These estimates become difficult when we depend on the dynamics of the movement. Linear perspective plays an important role in the perception of depth and distance, because more distant objects are higher in the field of view, and the result of this is that the angle of inclination from which one looks influences the distance estimate. Thus, if we are in a vehicle that is closer to the ground, such as sports cars, we will tend to perceive objects

further away than they actually are, and conversely, if the vehicle is higher, we will perceive objects at a smaller distance. This bias is extremely important in avoiding collisions, especially when drivers are trained in overtaking.

In the research of the author Groeger J., an average underestimation of the speed by 5-10 km/h is reported. This is because drivers rarely look at the speedometer. In natural studies, engine sound and background noises help to better perceive speed, while simulator studies mainly highlight the importance of visual perception [8].

In the given context, we can ask what will be the impact of electric cars over time, because they are technically created in such a way that they practically do not produce any sound, while engine is powerful and, respectively, the speed is very high.

The cognitive category also includes attention biases, which are considered to be the main cause of accidents. Attention is a synthesis function, gathering all available data and resources around an object or phenomenon, and when drivers are engaged in other cognitive tasks while driving, there is a delay in making a decision such as whether to brake. One type of attention error is the phenomenon of inattentional blindness, which is the refusal to see certain things that are as visible as possible. In this case, the attention is very much requested by an informational element, so that it abstracts from other elements in the same context [3].

In relation to memory biases, there is such a phenomenon called „pink retrospection", which refers to the fact that a biased perception of the past in relation to the future can lead to inaccurate assessments of both time periods. When we monitor progress over time, one is more likely to perceive the past as better than it was. Pink hindsight is a product of how our brains process memory over time. One reason older adults have a rosier picture of the past, which for them is young adulthood, may be that those periods of time coincide with more emotionally important memories. If we make an analogy with the activity of driving, then the danger of this bias lies in the impact on the thinking of drivers who in the past either showed risky behavior in traffic, or committed violations or were part of road accidents and now, thanks to the bias, have thoughts which sounds like this: „It wasn't really that serious", „If I didn't suffer anything, it means I know how to handle myself" or these events can be completely excluded from memory [9]. Distorting or removing from memory these elements without extracting a lesson from them, will lead to the repeated manifestation of risky behavior with the intensification of „dangerous courage".

However, the differences between real and perceived safety are most frequently found, a fact that can be explained by the discrepancy between real and perceived risk. Sometimes we worry about minor things and ignore the important ones, so we have some biased estimates. Among the most common ways of distorting the perceived risk compared to the real one are:

- most people fear new risks more than those they have experienced in the past;
- most people are more afraid of natural risks – earthquake, volcanic eruption, than of man-made ones – accidents;
- most people are more afraid of the risks imposed by others – the threat of other drivers, than the risks they take – their own behaviour;
- most people are less afraid of the risks that bring them the desired benefits;
- most people are less afraid of taking risks when they feel in control – in traffic, and more afraid when they feel they are out of control – flying;
- most people are more afraid of risks they are aware of than of unknown risks;
- people fear risks that directly affect them more than those that threaten others;
- adults fear the risks their children may be exposed to more than the risks to themselves;
- most people fear more when uncertainty is greater than when they have a lot of information [3].

Thus, we notice that consciously or not, but people have a tendency to distort reality, which is why they often do not perceive the danger they are venturing into and even more so do not have the resources and skills necessary for a prompt reaction, essentially: risk without realizing that they are in danger.

In **conclusion**, we reiterate that bias represents an individual subjective tendency that is part of human nature, being a natural result of the imperfection and subjectivity of each of us. It is precisely for this reason

that it is within our control to alter this trend pattern. The moment we learn about the existence of these biases, we can identify them in our own behavior and manage them so that we invest in our safety and health. Information and education about these concepts are the main pillars in preventing risky driving behavior and reducing the number of road accidents.

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