

# Investigation of the Impact of Driver's Individual Psychology and Socio-psychology on Driving Behavior

Sun Mingling & Chen Yongsheng

Transportation Research Center of Beijing University of Technology  
 100 Ping Le Yuan, Beijing, P.R. China  
 100022 Beijing, China  
 Phone: 010-67393075  
 Fax: 010-67391509  
 E-mail: mlsun@emails.bjut.edu.cn, yschen@bjut.edu.cn

## Introduction

Driver's individual and social psychology undoubtedly impact traffic safety. Stable psychological characteristic, positive psychological activity, strong sense of social responsibility, and competent professional ethics, all play important roles in driving safety. At the same time, the impact socio-psychology has on driving safety should not be ignored. Socio-psychology controls people's behavior imperceptibly. There are many studies about driver's psychology, but only dealing with individual psychology, not socio-psychology. In this paper, individual psychology is investigated based on questionnaire survey, and socio-psychology is further investigated by the employment of field survey. Finally comparison between individual and social psychology via traffic safety is analyzed.

## Driver's individual psychology

Individuality is psychological characteristic, which is comprised of the attitude to society, work and human being's relationship. Driver's psychology mostly includes temperament, sense, perception, notice, thought, mood and will.

Improving driver's psychological characteristic and removing negative psychological activity make sense for defending traffic accidents and insuring driving safely. On account of the particularity of driver's behavior, driver should keep a good mood in the process of driving. Based on the past studies, the author realizes there is direct and indirect relationship between traffic accidents and driver's psychological activity. In this paper, emotion as one important psychological characteristic has been investigated. The author has analyzed 70 pieces of questionnaire, and has got the figures as is shown in table2-1, and table2-2.

Table2-1 the fluctuation of emotion when a driver in a low mood

	driving speed	rapidity of reaction	capacity of rational analysis	consciousness	evaluate the result
normal	8.7%	32.9%	45.7%	21.4%	20%
abnormal	91.3%	67.1%	54.3%	78.6%	80%

Annotate: the row of "normal" indicates the rate of investigated drivers whose driving behaviors are not influenced, the row of "abnormal" indicates the rate of investigated drivers whose driving behaviors are influenced.

Table2-1 the fluctuation of emotion when a driver in a high mood

	driving speed	rapidity of reaction	capacity of rational analysis	consciousness	evaluate the result
normal	14.3%	17.2%	24.3%	34.6%	77.1%
abnormal	85.7%	82.8%	75.7%	65.4%	22.9%

Annotate: the row of "normal" indicates the rate of investigated drivers whose driving behaviors are not influenced, the row of "abnormal" indicates the rate of investigated drivers whose driving behaviors are influenced.

When in a low mood, among all the abnormal phenomena, 85.9% of the drivers slow down their speeds, 80.9% of the drivers are unable to react quickly, 69.0% of the drivers drop the capacity of rational analysis, and 67.3% of the drivers weaken the action of conscious control.

Usually we consider driving at a lower speed is safe, but if the reaction, the capacity of rational analysis and the action of conscious control become slow, too, driving will become unsafe. When in a high mood, among all the abnormal phenomena, 83.3% of the drivers speed up their vehicles, 70.7% of the drivers raise the capacity of rational analysis, and all drivers better the action of conscious control and are able to react quickly. Quickening the rapidity of reaction is good for a driver to make response immediately when encounter dangerous complexion. But it will make a menace to traffic safety that driving a car very fast, especially at an excessive speed.

So by the analysis above, we know that emotion has an impact on driving behavior, the two extremes on the spectrum of emotion have negative impact on driving behaviors. When driver is in a low mood, the capability of apperception drops, the collection of information is not efficient, the capacity of rational analysis and the action of conscious control become weak, and what's more, most drivers can't judge their behaviors correctly. It has a negative impact on driving safety. At the same time, when driver is in a high mood or over excited, he tends to drive at a higher speed. The capacity of rational analysis and the action of conscious control become weak, too.

## Driver's socio-psychology

Socio-psychology is the objective thing mirrored in social groups' mind, and is consist of social group's perception, consciousness, memory, thought, emotion and character. It has a very strong "inherent force", which controls people's behavior imperceptibly. Conformity is a typical socio-psychology, and has direct and close relationship with driving safety.

## Conformity

Conformity is the phenomenon that individual point of view and behavior change towards group's, because of group's indication and pressure. In short, conformers have two objectives. First, avoid committing a mistake. Second, conform to others' expectation, and earn others' favor. Conformity makes positive function for the stability of transport system and the lasting of social culture, but blind conformity will make a person lose the capability of individual development, the opportunity of finding new problems and thinking in a creative way. This not only prevents development of individual competence, but also holds back social progresses.

## Investigation of the impact of driver's conformity on driving behavior

Driver as an essential part of traffic system, besides other parts of traffic system such as vehicle, road and environment, his behavior is also influenced by other drivers in the same system. In different environment, driver is unable to solve all problems he confronted with completely. In order to keep traffic order and obey traffic regulations, then he will learn from other drivers who are in the same circumstance by the way of conformity. For an instance, a driver who is from a country where driver must drive on the right comes to a country where driver must drive on the left, and then he will change his driving behavior, and drive on the left. On a road, a driver dose not know what is the limit speed, he will follow other drivers, and drive his car at an average speed, dose not step up or step down. So conformity is at a certain extent good for forming a favorable traffic system, correcting driving behavior, and forming a uniform traffic behavior criterion, and ensuring driving safe and expedite.

By contrary, blind conformity destroys the stability of traffic system. Blind conformity makes driver loose the capability of analyzing problem rationally and lose the probability of finding latent danger, it forms a huge menace to traffic safety. For example, on an expressway, if most drivers are under the limit speed, then other drivers will abide the limit speed, too. But when several drivers run their cars at a speed that exceeds the prescriptive limit speed, some drivers are possible to be influenced by saving time, hankering stimulation, and holding the aleatory psychology that he can not be punished, step on their cars blindly. In addition, at an intersection, we often see pedestrians running red light in group, pedestrians don't use crosswalk and overpass, as long as there is only one pedestrian crossing the road at a middle section, there will be two or three pedestrians following him at the same time, as well as a few cars against red light together, and so on. All are the negative impacts of conformity.

The author has taken an hour investigation of a pedestrian signal on Songyu road in Beijing. There were 38 cars taking the lead in running red light, 17 cars were followed by one or more vehicles. The number of the cars which followed the lead car varied form 1 to 5, 6 vehicles were followed by 1 vehicle each, 4 vehicles were followed by 2 vehicles each, 3 vehicles were followed by 3 vehicles each, 3 vehicles were followed by 4 vehicles each, and 1 vehicle was followed by 5 vehicles. 40 vehicles had the phenomena of conformity in total. Meanwhile, there were many pedestrians waiting for green light in their direction to cross the road, but there were so many vehicles running red light in just an hour. So blind conformity not only disturbs traffic order, but also influences traffic safety, and in particular does harm to vulnerable road users. This case distinctively shows negative conformity is at large in china's traffic system.

## Comparison analysis of diver's individual psychology and socio-psychology

Due to the differences of drivers' backgrounds and experiences, their individual psychology is dissimilar. Driver's socio-psychology is a result of the mutual effect of all drivers in traffic system. Socio-psychology has socialization characteristic and is varied by the differences of social environment. Everything has two sides, so does conformity. We should learn to make good use of positive socio-psychology, and get rid of negative socio-psychology, such as blind conformity.

Driver's individual and social psychology influence and is influenced each other. On one hand the formation of driver's individual psychology is influenced by the progresses of society, social regulation and morality. And on the other hand the generation of driver's socio-psychology is restricted by individual psychology. A driver who has nicer individual

psychology and is not influenced by external factors will drive his car by already formed habit. But when put him in a specific circumstance, he is most likely to be influenced by other adjacent drivers, and generates irrational socio-psychology. In order to resist irrational socio-psychology, such as blind conformity, we ought to take full advantage of individual psychology, and make good use of nicer psychological characteristic, competent professional ethics, and unwavering will to reject the socio-psychology blind conformity.

## Conclusion

In this paper driver's individual psychology and socio-psychology are analyzed. It shows that individual psychology and socio-psychology play extremely important roles in the process of driving. Drivers who have good individual psychology can detect potential danger in time, promptly make reactions, and take correct reply measures. Drivers who have good socio-psychology can well get along with the changeful circumstances, can put conformity and rational analysis together, and can abide traffic rule self-consciously. For blind conformity the bad socio-psychology, we can via improving driver's individual psychology to fight with it. Driver's individual psychology and socio-psychology are unified in the driving process, mutual affected, and mutual restricted. The formation of individual psychology can not deviate from the impact of social surroundings, and the function of socio-psychology is enslaved to individual psychology. We should be good at using the mutual effect of individual psychology and socio-psychology to guide them to form a benign circle. We also need to adopt positive measures to optimize driving behavior, and ensure traffic safety.

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