

Book Review

T. Rothengatter & R.D. Huguenin (Eds.)

Traffic and transport psychology: Theory and applications.
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The book is the selected proceedings of the second international conference of traffic and transport psychology (TTP) held in Bern, Switzerland, in 2000. The first conference took place 1996 in Valencia, Spain, the third 2004 in Nottingham, UK (Rothengatter & Carbobell-Vaja, 1997; Underwood, 2005). A casual look at the three volumes from the conferences indicates that their structure and contents are similar. In the volume under review, keynote lectures, selected papers and poster presentations are included. A first part contains an introduction by the editors and three chapters addressing the general issue of theory in a field of applied research such as TTP. The remaining parts are dominated by reported empirical studies with some interspersed overview, conceptual, or discussion chapters. Truthfully representing current TTP research, these include *road user characteristics* (cognition and performance, social and differential psychology, and impairment), *road safety* (driver information and support systems, enforcement and training, and selection and rehabilitation), and *mobility and the environment*.

Selected chapters are likely to be read primarily by other researchers, hopefully many from the engineering disciplines since in particular to them behavior theories may be of value. A critical stance is still made concerning progress since the 1970s. A possible cause is the gap between TTP and mainstream psychology. An illuminating, very condensed, review by Keskinen, Hatakka, Laapaati, Katila, and Peräaho seems to open up for bridging the gap. Although focus is on theories of cognitive and motivational determinants of driver performance, these authors also argue that theories can be used to understand (and forecast?) accident risks. Theory needs to play a role in applied research. In fact, the editors' negative evaluation of achieved applications, accurate or not, is perhaps traceable to a scant concern with theory. A controversial issue is nevertheless how far applied research should go to understand fundamental processes of cognition, motivation, judgment, and decision making. In applications it is furthermore difficult to live with the existence of many, sometimes incompatible theories. Yet, only a minority denies the natural science ideal of theory construction.

Miller, Galanter, and Pribram's (1960) control theory has recently been developed in social and personality psychology assuming that much human behavior is controlled by negative feedback (Carver & Scheier, 1998). Maladaptive "adaptation" (behavioral adaptation) may still result. As insightfully discussed and demonstrated by Brown and Noy, one reason is

biased perceptions of accident risk. False trust in technical systems is another. In discussing how TTP relates to mainstream social psychology, in another insightful analysis Parker makes the distinction between unintentional errors and intentional violations of traffic regulations, thus arguing for an integration of cognition and motivation. This chapter also reviews several innovative TTP applications of social psychology (e.g., attribution bias, illusion of control, stereotyping).

Many of the reported empirical studies are of high quality. But is a 4-year publication lag acceptable? It is furthermore negative that topics are very diverse even within parts, for instance, in the part on road user characteristics ranging from traditional solid experiments (e.g., of speed perception and control, reaction time) that increment our knowledge to non-traditional studies of interpersonal communication among road users. The subsection on social and differential psychology broadens the topics even further by addressing anger and aggressive acts, self-efficacy beliefs and risk-taking, gender roles, and cultural and subcultural differences! As if this is not sufficient, another subsection covers factors impairing driver performance. A useful review chapter by Hartley on fatigue and a reflecting chapter by Brookhuis and de Waard that highlights both the need for and the difficulty to develop valid measures of general driver impairment. Several empirical studies are reported demonstrating the points.

What is known then about how to improve road safety? The classic triad of facilitating the driving task, enforcing and training drivers, and selecting drivers are treated in the middle part. These means should ideally be coordinated. A scholarly, historical review by Haight provides convincing arguments for this.

After a slow start for driver-assistance systems decades ago, Malaterre witnesses to that the development of intelligent transportation system (ITS) now proliferates both among car manufacturers and public research organizations. Studies are also reported of effects on driver performance (some negative) as well as of attitudes. A noteworthy point is made by Carsten that adaptive cruise control systems with likely negative effects are in the market, whereas intelligent speed adaptation devices with likely positive effects are not.

In analyzing enforcement strategies Siegrist introduces another distinction between intentional violations of and failing to pay attention to regulations. A reason for the latter may be the frequency of non-compliance. Another prominent theory in social psychology, the theory of planned behavior (Ajzen, 1991) has been applied to understand such influences of social norms.

Although the laws differ to some extent in different countries, age, health status, committed offenses (e.g., drunk driving, speeding), and responsibility (e.g., being a bus driver) are factors that are taken into account in driver selection. Studies in Austria, Germany, and Norway are reported in addition to a study featuring a test-retest reliability analysis of the British practical driving test.

A somewhat unrelated but very timely final part addresses research on mobility and the environment. A useful overview chapter is unfortunately lacking. Several contributions are included reporting specific studies, for instance, of motives for using the car or not as well as of acceptability and effectiveness of various measures of promoting the use of alternative modes.

The book gives a valuable overview snapshot of TTP in the beginning of the new millennium. It also looks attractive. Still, a disgrace is its lack of subject and author indexes. So is the omission of author addresses. Furthermore, some additional language editing would not have been misplaced.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, vol. 50, pp. 179-211.
- Carver, C.S. and Scheier, M.F. (1998). *On the self-regulation of behavior*. Cambridge: Cambridge University Press.
- Miller, G.A., Galanter, E. and Pribram, K.H. (1960). *Plans and the Structure of Behavior*. Holt, Rinehart and Winston, New York.
- Rothengatter, T., and Carbovell-Vaya, E. (eds.)(1997). *Traffic and transport psychology: Theory and applications*. Oxford: Pergamon.
- Underwood, G. (ed.)(2005). *Traffic and transport psychology: Theory and applications*. Amsterdam: Elsevier.

