

Transport and Traffic Psychology at the University of València, Spain

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THE INTRAS: INSTITUTO UNIVERSITARIO DE TRÁFICO Y SEGURIDAD VIAL (UNIVERSITY INSTITUTE OF TRAFFIC AND TRAFFIC SAFETY)

At the University of València, more than ten years ago, various groups of researchers from different university departments became interested in the systematic study of Road Traffic – its regulatory as well as safety aspects. As a result of these efforts, two research groups were formed: the Research Unit in Traffic Psychology and Traffic Safety (later, Transport Psychology and Traffic Safety) and the Integrated Laboratory of Intelligent Systems and Information Technology in Traffic (LISITT). The Research Unit focused on the study of problems involving the human factor and the area of Traffic Safety, while the LISITT group was more involved in Traffic Control and the development of new Computer and Telematic applications in this field.

These two research groups formed the embryo of INTRAS at the University of Valencia, and were later joined by other distinguished researchers who work in diverse fields of study. This broad group includes more than 40 university

professors and researchers in the Departments of Psychology, Education, Physics (Computer Science) and Medicine. In addition, this group works in close collaboration and carries out research with the Traffic Engineers at the Polytechnic University of València.

This extensive group, under the direction of Dr. Luis Montoro Gonzalez, Catedrático in Traffic Psychology and Traffic Safety, is divided into three sections: *Computer and Telematics applied to Traffic and Traffic Safety*, (composed of 15 professors and researchers and directed by Dr. Gregorio Martin, Catedrático of Computer Science and Artificial Intelligence); *Medicine applied to Traffic and Traffic Safety*, (composed of 8 professors and researchers and directed by Dr. Fernando Verdu, Professor Titular in Forensic Medicine); and *Traffic Psychology and Traffic Safety*, (composed of 20 professor and researchers and directed by Dr. Luis Montoro). At the same time, each section includes various subdivisions, each of which strives to achieve the final objectives of the research group which are: to coordinate effort, knowledge, and action in order to provide a solution, from within the University, to one of the major challenges that faces modern society – to resolve the problems of traffic and traffic safety.

As a research centre dedicated to theoretical as well as applied aspects of traffic and traffic safety. The group performs fundamental research

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and provides instruction in this area. At the same time, INTRAS offers Specialised Training, Consulting and Research for Institutions, Businesses, Corporations, Associations as well as other groups that need their services.

Among Spanish university groups that work in the field of Traffic and Traffic Safety this group is one of the most active and productive. This can be seen by reviewing the group's progress, which can be appreciated in the following examples:

a. The members have published a wide variety of technical reports, papers, articles and books on traffic and traffic safety.

b. The group has at its disposal an extensive bibliography of works dealing with traffic and traffic safety and is creating a broad database.

c. The group has carried out and is currently involved in joint studies with various American and European universities and institutes, for example with: France, the USA, Germany, The Netherlands, Italy, Argentina, Brazil, Colombia and Venezuela. The most important currently financed studies in Spain are those performed for the Government Traffic Agency, for private businesses such as AUMAR (motorway concessionaire), for insurance companies and for vehicle inspection centres. Research is performed for international projects like DRIVE, SPRIT, VALUE, ARTIS, ENS and SARTRE.

d. Numerous technical reports and expert testimonies have been carried out for the Spanish Department of Justice.

e. The group has organised national and international congresses as well as sections of congresses dealing with traffic and traffic safety.

f. Some group members took part in the creation of EUROPSYT – European Association of Transport Psychologists. This association's objective is to strengthen the position of specialists in the area of the human factor in transport; improve and broaden knowledge and applications in the field; and, above all, to establish and reinforce fruitful relationships among applied psychologists and researchers of different countries through the exchange of ideas and experiences.

g. The group collaborated in the creation of the Transport and Traffic Division of the IAAP–International Association of Applied Psychology. This division plans activities with two fundamental objectives. First, it aims to improve the

professional status of traffic specialists, and, to this end, it strives to demonstrate the usefulness of the study of the human factor for solving problems concerning transport. Second, this association seeks to enhance communication among applied psychologists and researchers in different countries.

h. The group has participated in and organised diverse instructional activities concerning traffic and traffic safety, within the university as well as in other sectors. Some of these activities are: Master's and Doctoral courses; University Extension Courses; Seminars in Traffic Safety Education; courses to train driving school teachers; courses to train local and regional police officers; courses for health care professionals; courses at the University Menendez-Pelayo; courses at the Civil Guard Traffic Academy; and courses for traffic safety specialists in Italy and France.

i. The Spanish Senate invited researchers from the group to participate in the *Special Survey and Research Commission on Traffic Safety and Automobile Use*.

j. The group is an official member of the Traffic and Traffic Safety Commission in the Autonomous Community of València and has carried out many activities in this function.

k. The group acts as delegates for the National Traffic Agency on various European commissions.

l. The group received the VIII Annual Award of the Official Psychologists' Association for its efforts in informing the public about topics in Psychology through the media.

m. The Ministry of Justice and Interior, which is responsible for the National Traffic Agency, presented the group an award in recognition of its research in the area of traffic and traffic safety.

As a result of this extensive and varied history the professors and researchers in the group proposed the creation of the University Institute of Traffic and Traffic Safety – INTRAS –, which is presently in the final stages of approval.

THE TRAFFIC PSYCHOLOGY AND TRAFFIC SAFETY SECTION

The current *Traffic Psychology and Traffic Safety* section had its origin in the Traffic Psy-

TABLE 1

A. Supporting Areas

Documentation and Reports
Method, Design and Research Techniques in Traffic Safety

B. Fundamental Research

Cognitive Processes and Traffic Safety: ergonomics, perception and decision-making.
Psychosocial Aspects: motivation, attitudes, values and beliefs.
Risk Factors and Special Groups.
Environmental Aspects, Mobility and Alternative Transportation

C. Applied Research

Epidemiology, research and analysis of accident conflicts
Driver Selection and Evaluation.
Preventive Interventions: user analysis, evaluations of interventions and educational campaigns.
Education, training and instruction.
Regulations, surveillance and law enforcement.

chology and Traffic Safety Research Unit (later called Transport and Traffic Safety Unit) of the Psychology Department. This section started its work at the beginning of the 1980's, following a Spanish tradition of interest in this field dating back to the 1920's.

In fact, as long as traffic accidents have been a problem in Spain, Spanish psychologists have strived to find solutions. The first Spanish psychologists involved in psychological assessment, like Emilio Mira i Lopez and Jose Germain, had at their disposition a network of Municipal Psychological Assessment Institutes and Official Psychological Assessment Laboratories. These institutions were the first in Spain to be in charge of the selection of professional drivers of public vehicles.

Moreover, from these beginnings, the psychologists in Spain strove to broaden the application of psychology in the field of traffic safety beyond that of selection. Some of these later areas of application were: driver education, traffic safety information in schools, advertising campaigns, research in the field, and assessment of the design of traffic signals and roadways. Unfortunately, the progress made by these psychologists was truncated by the Civil War and did not become reestablished until the 1980's.

Dr. Heliodoro Carpintero, distinguished Ca-

tedrático in the History of Psychology at the University of València, was of major importance in this resurgence. He directed the work of the psychologists at the University of València who were interested in «driver psychology». The study of «driver psychology» evolved into traffic psychology and from there into transport psychology and traffic safety. Today, this Section's activities are organised into three blocks (Table 1).

A. The block of Supporting Areas has two subdivisions. The area of documentation and reports is directed by Dr. Francisco Tortosa, Catedrático in Documentation and in the History of Psychology. The areas of Method, Designs and Techniques in Traffic Safety Research are directed by Dr. Jaime Sanmartin, Professor Titular of Methodology in the Behavioural Sciences. Both of these sub-areas provide the other major areas with necessary tools and information; at the same time, they are fields of study in their own right that keep abreast of new technologies and current documentadon. Regarding documentation, this Section is presently developing a broad database in traffic safety which will include the following information: laws and their enforcement, engineering, economics, sociology, education, and, of course, psychology. This project is financed by the National Traffic Agency.

Blocks B and C, coordinated by Dr. Enrique J. Carbonell, Professor Titular of Psychology, have as their objective: to perform research within both Spanish and European scientific programs; to offer services relating to the area of transport and traffic, especially research, to institutions and both public and private businesses.

B. Fundamental Research. In order to highlight the most relevant research in this block, it is convenient to make reference to the following areas. (1) In the area of *cognitive processes* and traffic safety, the most important contribution has been made in collaboration with the Computer and Telematic Section and consists of research and development of an interactive driving simulator that permits the study of these cognitive processes. In addition, public institutions like the Valencian Community Autonomous Government and businesses such as ASDE, S.A. have financed research dealing with decision-making. (2) The *psychosocial aspects* have traditionally been one of the special interests of this Section with numerous contributions, especially concerning attitudes, which have been financed by European projects such as (Autopolis) DRIVE and SARTRE, and Spanish institutions and businesses like MAPFRE. (3) Regarding *risk factors and special groups*, during the last few years the group has concentrated on professional drivers (taxis, trucks and driving school instructors) and young drivers, especially those who drive mopeds and motorcycles. Furthermore, the study and development of instruments to evaluate anxiety and stress in traffic and produced by traffic – ISAT, ISRAT and IAAT (the latter is in the final stages of preparation) – is one of the Section's most important lines of research. (4) Lastly, *transport alternatives* such as trains and planes, as well as urban alternatives like buses, bicycles and pedestrians, have been studied.

C. Applied Research. Recently, most of the group's research has been in this block of areas, and these studies have received the most funding. (1) In the area of accident research, without a doubt the most complete study was performed for the *motorway concessionaire*, AUMAR, S.A. This study analysed the accidents and other incidents that occurred in the last ten years on

this company's highway and assessed, in detail, the users' perception of safety factors. (2) As mentioned earlier, the tradition of *driver selection and evaluation* began in Spain in the 1920's. That is why it comes as no surprise that the group also has given this topic its attention. However, the research group's interest has been in the development of instruments that measure motivational variables rather than aptitudes, for example, Evaluation or Perception of Risk and Acceptance of Risk or Reckless Attitudes. (3) Regarding *Preventive Interventions*, the group has collaborated in diverse campaigns for the national as well as the autonomous community governments. These collaborative efforts involved planning, advising and performing appraisals. With respect to user evaluation, the above mentioned study for AUMAR as well as a study performed for SEPIVA (the company that manages the ITVs – Technical Inspection of Vehicles) are of special interest. (4) *Education, training and instruction* are among the group's most important areas of application in the field. This work includes such activities as advising, planning and research, especially regarding the behaviour of children as pedestrians. (5) Lastly, *law enforcement and surveillance* have a clear impact upon the human factor in traffic safety. Specifically, the effects of these strategies, their acceptance by the various users (Traffic Control branch of the Civil Guard, Municipal Police and drivers) and the technical procedures employed are important factors to take into account in this area. All of these factors have been analysed by the research group (in the Autopolis study, for example) and are the core of the training that is imparted to law enforcement and surveillance specialists.

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After these many years of work in the field, it is an honour to be able to complete this summary of the history of Traffic Psychology and Transport at the University of Valencia by announcing the group's next project which without a doubt will bring great satisfaction to the specialists in this field – the first *International Conference on*

Traffic and Transport Psychology (ICTTP'96) which will be held in València, Spain during May 22, 23, 24 and 25 of 1996. The congress' scientific sessions will be held at the Palau de Pineda and the opening ceremony will take place at the University of València. Attending the conference will be 300 scientists from around the world.

The *ICTTP'96* will be presided by Dr. Luis Montoro, Catedrático of Traffic Psychology and Traffic Safety at the University of València. The Organisation Committee, presided by Dr. Enrique Carbonell, is formed by professors at the University of València. The Scientific Committee is presided by Dr. Talib Rothengatter, Director of the Traffic Research Centre, University of Groningen (The Netherlands) and President of the Traffic and Transport Division of the IAAP. The members of this committee are: Dr. Pierre E. Barjonet, Director of Research of the Laboratoire de Psychologie de la Conduite of INRETS (France), President of Europsyt; Dr. J. Groeger, Institute for Transport Studies, Professor of the

Department of Psychology, University of Leeds (United Kingdom), Secretary of the BPS, Management Committee IAAP Division; Dr. Frank McKenna, Department, of Psychology, University of Reading (United Kingdom), Management Committee Europsyt.; Dr. Rafael D. Huguenin Swiss Council for Accident Prevention (Switzerland), Management Committee Europsyt; Dr. Luis Montoro, Traffic Psychology of the University of València, Treasurer of IAAP Division; and Dr. Enrique Carbonell, Professor of the University of València, Management Committee Europsyt.

We hope you attend *ICTTP'96* and join us in this friendly city that for three days will be host to specialists in Traffic and Transport Psychology from around the world who wish to share their knowledge and technical developments, as well as establish relationships that will enhance future collaborative efforts.