



## Self-reported road traffic violations in France and how they have changed since 1983

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### ABSTRACT

**Goals:** The goal was to gain a picture of current driver behaviour, and of the links between committed violations and accident history. It was also to identify how driver behaviour has changed over the last 20 years.

**Methods:** A questionnaire-based cross-sectional study of a sample of 1161 drivers about the frequency of violations and the perception of the dangers and penalties associated with them was used in 2005. Self-reported violations and mental representations were also compared to the results of Biecheler who used similar methods (Biecheler-Fretel, 1983).

**Results, conclusions:** Road traffic violations are frequent in France, particularly among male drivers. Several violations are linked with history of accidents in our sample. Frequently or fairly frequently exceeding the speed limit by 10 km/h (a violation reported by almost 53% of our sample), increases accident occurrence by a factor of 1.4. Progress in drivers' behaviour has been slow and nonuniform, and appears in part to be related to safety campaigns that have been run (seat belts, alcohol). The results could inform future campaigns. In particular, a campaign on the use of indicators would seem worthwhile.

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### 1. Background, goals

There is nothing new, or even particularly French, about breaking the Highway Code. The topic has been discussed, for example, in a paper by Ross entitled "Traffic law violation: a folk crime" (Ross, 1960), Biecheler's doctoral thesis "Infractions coutumières et risque d'accident" (customary violations and accident risk) (Biecheler-Fretel, 1983) as well as Renner's paper which explains that committing violations is a normal behaviour that is symptomatic of a character trait (Renner and Anderle, 2000).

Speeding is invariably the most frequent violation. Gaymard has pointed out that in the case of speed violations "individuals who break the rules believe themselves to be within their rights" (Gaymard, 2006). A team led by Simon has shown that excess speeding is considered to be a minor violation (Simon and Corbett, 1992). Corbett describes a consensus that legitimizes speeding violations (Corbett, 2000). The MARC survey concluded that during the period between December 2002 and March 2003 the violation rate was on the increase in Europe as a whole and estimated that the annual punishment rate per 100,000 km for the 18–24-year-old age group stood at 0.26 for men and 0.06 for women (Coquelet

et al., 2004). In France, before the widespread introduction of the Automated Traffic Enforcement Systems at the end of 2002, Perez-Diaz assessed that 50% of the vehicles on the road were violating the speed limit (Perez-Diaz, 2004). However, the introduction in 2002 of the Automated Traffic Enforcement System brought this situation to a decrease: between 2002 and 2007 punishments for exceeding speed limit by 30 km/h were reduced by 80%, while the mean observed speed decreased by 9 km/h (ONISR, 2007). Before 2002, mean speed was constant.

Although against the law, Highway Code violations are frequently accepted, probably partly because of the difficulty and non-systematic nature of monitoring: enforcement is random and delayed. Drivers do not consider that violations involve guilt. For the "man in the street" complying with the Highway Code is a question of driving like other drivers, staying in the stream of vehicles rather than complying with the law, particularly with regard to speed (Aberg et al., 1997; Saad and Malaterre, 1982).

Among many other studies, research by Gras has shown that accident risk increases with a violation score (Gras et al., 2006).

The goal of this study is to gain a picture of current driver behaviour by gender, and of the links between committed violations and accident history. It is also to identify how driver behaviour has changed, over the last 20 years, by identifying the violations which the subjects reported committing most frequently, and considered the most dangerous and the most frequently punished.

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**Table 1**  
Response modalities for the 1983 and 2005 studies.

	Violations committed	Perceived danger	Perceived risk of punishment
1983	Occasionally, Every time with no risk	Fairly dangerous Very dangerous	Almost always, Occasionally
2005	Often Fairly often	Often Fairly often	Often Fairly often

## 2. Materials and methods

### 2.1. The population and the sample 2005

The population consists of all the drivers in France, who are estimated to number 34,700,410 in 2005 (Nallet, 2009).

The sample was recruited from all parts of France and consisted of 1161 drivers from 19 sampling locations that were selected to be as different as possible. Each sampling location provided at most 4.3% of the total sample. The sampling locations were as follows: the premises of a grouping of farmers, the Rhône Department Employers' Federation, patients attending two doctor's surgeries and the general public attending two district town halls. The sample also included parents and teachers drawn from a number of schools (School of Metallurgy, two classes in a private secondary school and one class from a State primary school). In the sample, 56.4% of drivers were men.

### 2.2. Type of survey

The survey was a self-administered questionnaire-based cross-sectional survey conducted in 2005. The questionnaire described 21 violations and asked the subjects to give their opinion on the perceived danger, the risk of prosecution and the most frequently adopted attitude. In deed it measured mental representations, and not actual behaviour.

The self-reported performance scales used were similar to those used by Biecheler in 1983 (Biecheler-Fretel, 1983). One violation which did not exist at the time (telephoning) was added.

**Table 2**  
Violations reported to be committed often or fairly often in 2005.

21 violations	Drivers (n = 1161)			p	Relative risk men/women
	Men (n = 655) %	Women (n = 506) %			
Exceeding the speed limit by 10 km/h on a motorway	55.8	48.7	0.01	1.1	
Daytime excess speeding on a road	44.5	34.1	0.0004	1.3	
Night-time excess speeding on a road	38.0	22.5	<0.0001	1.7	
Exceeding the speed limit in a built up area	27.1	21.4	0.03	1.3	
Driving through an amber traffic light	21.6	22.0	ns	0.98	
Exceeding the speed limit by 30 km/h on a motorway	21.1	12.5	0.0001	1.7	
Telephoning while driving	21.1	14.9	0.008	1.4	
Tailgating	20.2	9.1	<0.0001	2.2	
Constant lane changing on a motorway	17.3	17.0	ns	1.0	
Overtaking on the right on a motorway	17.3	13.8	ns	1.2	
Failing to indicate	16.6	10.3	0.002	1.6	
Illegal parking	14.2	10.1	0.03	1.4	
Failing to give way at an intersection	11.7	9.7	ns	1.2	
Not wearing a seat belt	9.6	5.4	0.008	1.8	
Risky overtaking	8.5	5.3	0.03	1.6	
Driving too slowly <sup>a</sup>	7.5	7.8	ns	0.96	
Drink driving	5.7	0.9	<0.0001	6.3	
Cutting in front of another driver	5.3	2.2	0.008	2.4	
Crossing a continuous white line	3.8	2.0	ns	1.9	
Driving on emergency stopping lane	3.2	1.4	0.05	2.3	
Driving the wrong way down a one-way street	2.8	0.7	0.009	4.0	
Ignoring a stop sign	2.6	0.8	0.03	3.2	

<sup>a</sup> This is not a violation.

Unlike Biecheler-Fretel, for the sake of consistency we have used the same choice of responses for all aspects of the violation (a single scale for the committed, dangerous and punished violations) with four response modalities "never, almost never, often, fairly often".

Before each scale a different question was asked:

- State which of the behaviours listed below you perform. . .
- In your opinion people who commit the following violations are arrested by the police. . .
- State which of the behaviours listed below are dangerous. . .

### 2.3. Comparison with a 1983 study

We have compared the situation with regard to these three aspects of violations in our 2005 study and Biecheler's 1983 study. This study concerned 1002 French drivers of several geographical areas, aged from 20 to 60 years, of whom 75% were men.

The comparison between the two studies is based on the equivalence, as shown in Table 1, between some grouped modalities of 1983 study and 2005 study.

In the case of the responses concerning the perceived danger, the modalities in 1983 were almost identical to those in 2005, while for violations committed and punishment the 2005 responses were more clear-cut. The comparison is therefore more concerned with the order in which the subjects placed the violations than with the modalities as such.

### 2.4. Analysis

All the analyses were conducted with Version 9.1 of the SAS software. Before the analysis the sample was corrected to reflect

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