

# Traffic ticket fixing and driving behaviours in a large French working population

E Lagarde, M Chiron, S Lafont

*J Epidemiol Community Health* 2004;**58**:562–568. doi: 10.1136/jech.2003.011833

See end of article for authors' affiliations

Correspondence to:  
Dr E Lagarde, INSERM  
U88, 14, rue du Val  
d'Osne, 94415  
Saint-Maurice Cedex,  
France; emmanuel.  
lagarde@st-maurice.  
inserm.fr

Accepted for publication  
7 October 2003

**Study objective:** The use of connections who have the authority to cancel penalties related to traffic violations seems to be very frequent in France. This study aimed at describing risk taking driving behaviours associated in France with using connections to have traffic tickets cancelled (ticket fixing).

**Design:** Retrospective study on driving behaviour and road safety conducted between March and December 2001 within a cohort of French employees.

**Setting:** France.

**Participants:** Employees of the French national utility company who have been followed up since 1989. The sample comprises 10 594 men aged 53–63 years and 3258 women aged 48–63 in 2001.

**Main results:** One third of the men and one fifth of the women reported that they had had a ticket fixed at some time. Those who reported having tickets fixed were more likely than the others to report high driving speeds (adjusted odds ratios (aOR) were 1.24, 1.52, and 1.66 in built up areas, on rural roads, and on motorways respectively), to report driving while under the influence (aOR = 1.39), and to report risky use of cellular phone while driving (aOR = 1.83). In addition, participants who reported having tickets fixed were more likely to have had at least one serious road traffic accident in the past 11 years (aOR = 1.21).

**Conclusions:** Indulgence and the use of connections are common practices in France. These results suggest that it is to confer a feeling of impunity that jeopardises efforts to combat unsafe driving. Abolition of these traditions is essential to ensure the credibility of preventive and repressive measures.

During the last presidential election in France in May 2002, several French associations for the prevention of road traffic accidents appealed to candidates to renounce the pardon usually granted to people who violated traffic regulations in the six months to one year before the election.<sup>1</sup> In response, the newly re-elected president Jacques Chirac limited the amnesty to non-dangerous parking violations. While this can be considered as a great improvement in the fight to improve road safety in France, amnesty is far from the only French "tradition" of indulgence for traffic violations. Another such tradition entails the use of connections who have the authority to cancel penalties related to traffic violation, that is, to "fix the ticket" in US parlance. This connection is often a police officer, an elected representative, or a member of the intelligence services.<sup>2</sup> A study conducted in 1988 found that 20% of penalties for non-serious violations (mainly parking, seat belts, and failure to have necessary papers on hand) and 33% of penalties for serious violations (mainly speeding and failure to stop violations) received indulgence.<sup>3</sup>

Road traffic accident rates are high in France compared with most European countries. Modelling exercises have compared safety performance between Organisation for Economic Cooperation and Development (OECD) countries<sup>4</sup>: after adjustment for vehicle fleet, population structure, proportion of urban population, per capita alcohol consumption, and employment rate, France ranked 18th in 1980 and 15th in 1994 among the 21 OECD countries. The campaign for road safety has been allocated a top priority by successive governments. Road traffic accident rates started recently to decline in 2002.<sup>5</sup>

Numerous studies have shown the role of human behaviour in the complex chain of events leading to road traffic accidents.<sup>6–7</sup> The risk of involvement in these accidents

has been shown to be associated with the tendency to violate traffic laws, drive fast, and lack thoroughness in decision making.<sup>8</sup> In addition, studies conducted in the UK<sup>9</sup> and in Greece<sup>10</sup> insisted on the importance of aggressive behaviour and irritability. Several other studies have shown that mild social deviance and propensity to violate traffic laws are correlated with an increased risk of accident involvement.<sup>11–14</sup> To our knowledge, however, no published study has assessed the impact of the sense of impunity conferred by the knowledge of immunity from traffic penalties related to the availability of ticket fixing, amnesty, or various other improprieties (considered corrupt or venal in many countries). Nor has the prevalence of this practice been estimated.

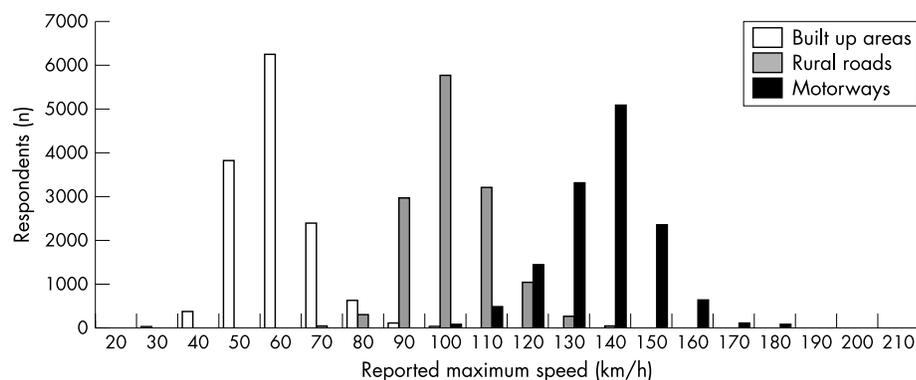
We took advantage of data from a study of road traffic accidents among a cohort of workers in France to investigate the prevalence of the use of connections to avoid paying traffic violation penalties (hereafter called ticket fixing) and to assess its impact on risk taking driving behaviours.

## METHODS

### Study population

The participants were employees of the French national electricity and gas companies, Electricité de France and Gaz de France (EDF-GDF) who volunteered to participate in a research cohort, known as GAZEL. Its principal objectives are to collect data about the annual prevalence and incidence of chronic health problems. Together, these two firms employ about 150 000 people of diversified trades and socioeconomic groups throughout France.

Since 1989, the GAZEL cohort has been under study by the National Institute of Health and Medical Research (INSERM). It initially included 20 625 participants: 15 011



**Figure 1** Distribution of respondents according to reported maximum speed. \* Less than 3% of reported speeds were not multiple of 10 and were grouped with the preceding rounded speed (for example, 20 means 20 and 25, 30 means 30 and 35 etc...).

men aged 40–50 years in 1989 and 5614 women 35–50 years. A comprehensive database has been regularly updated since then with data from the human resources department, the firms’ medical insurance programme, the occupational medicine department, and an annual questionnaire mailed to participants at the beginning of each year. The GAZEL

cohort objectives and methods have been described in more detail elsewhere.<sup>15 16</sup>

**Data from the annual GAZEL cohort questionnaire**

Sociodemographic data from the cohort database included: sex, year of birth, occupational categories, household income.

**Table 1** Proportion of participants who reported ever having traffic tickets fixed, according to individual characteristics

	Number (%) of respondents	% Of respondents who reported having tickets fixed	p for comparison	
<b>Sex</b>				
Men	10458 (76.7)	29.4	<0.001	
Women	3179 (23.3)	19.1		
<b>Year of birth</b>				
Men				
1939–1943	4557 (43.7)	27.4	<0.001	
1944–1948	5874 (56.3)	30.9		
Women				
1939–1943	789 (24.9)	16.5	0.054	
1944–1948	7768 (36.8)	19.5		
1949–1953	1514 (38.3)	20.1		
<b>Driving mileage per year</b>				
<10000 km	3021 (22.4)	20.2	<0.001*	
10000–20000 km	7212 (53.5)	26.4		
>20000 km	3251 (24.1)	34.8		
<b>Alcohol consumption</b>				
Non-drinker	1441 (11.3)	21.0	<0.001*	
Occasional	6387 (50.1)	25.3		
Moderate	3566 (25.6)	28.7		
Heavy drinker	1657 (13.0)	34.0		
<b>Type of vehicle owned in 2001</b>				
City and utilitarian cars	3038 (23.5)	23.7	<0.001*	
Small family cars	3985 (30.9)	25.6		
Large family cars, MPVs, and 4×4	4785 (37.1)	28.4		
Executive, luxury cars and sport cars	1101 (8.5)	33.9		
<b>Missing points on driving licence</b>				
None	12834 (94.8)	26.6	<0.001*	
One or two	331 (2.4)	31.7		
More than two (3–12)	372 (2.7)	36.8		
<b>Occupational category</b>				
Unskilled workers	2237 (16.5)	26.8	0.72†	
Skilled workers	7833 (57.9)	27.2		
Managers	3461 (25.6)	26.5		
<b>Household income group in 1989 in eurost</b>				
–1144	394 (2.0)	23.9	0.66*	
1144–1372	1056 (8.0)	25.0		
1373–1601	1382 (10.5)	26.8		
1602–1982	2536 (19.3)	27.8		
1983–2591	3630 (27.6)	28.7		
2592–3811	3153 (23.9)	27.0		
3812–	1014 (7.7)	23.6		
<b>Score for negative attitudes towards traffic regulations</b>				
0–2	3437 (25.5)	21.5		<0.001*
3–4	4398 (32.3)	24.7		
5–6	3354 (24.6)	28.7		
7–12	2404 (17.6)	36.6		

\* $\chi^2$  trend test; †groups were based on French francs in 1989.

**Table 2** Proportion of participants who reported ever having traffic tickets fixed, according to history of a serious road traffic accident (SRTA) and risk taking driving behaviours

	% Among respondents who did not reported having tickets fixed (n)	% Among respondents who reported having tickets fixed (n)	p for comparison
Maximum speed in built up areas >55	66.8 (9884)	74.8 (3664)	<0.001
Maximum speed on rural roads >100	30.7 (9872)	43.6 (3659)	<0.001
Maximum speed on motorways >145	19.9 (9825)	33.5 (3650)	<0.001
Drinking and driving in the past 12 months	19.9 (9904)	26.9 (3671)	<0.001
Risky use of cellular phone while driving	9.9 (9946)	18.7 (3677)	0.001
At least one SRTA as a driver of a four wheel vehicle in the follow-up period	5.3 (9956)	6.8 (3681)	<0.001

An alcohol consumption variable was derived from questions about frequency and quantity of alcohol consumption in the 2001 annual questionnaire. Drinking habits were classified into four categories: non-drinker, occasional, moderate, and heavy drinker.

### Data from the driving behaviours and road safety questionnaire

The 19 894 living members of the GAZEL cohort received a questionnaire about driving behaviours and road accidents in March 2001. The questionnaire was pilot tested in December 2000 on 500 randomly selected participants, 330 of whom responded. We used their answers and comments to finalise the questionnaire. It was designed primarily to elicit descriptions of serious traffic accidents over the past decade. Participants were asked to report all of their serious road traffic accidents (SRTA) in the follow up period (defined as traffic accidents in which one or more persons were injured). Reminders were provided by the medical department, which list their sick leaves for traffic accidents during the period covered by the questionnaire. Participants were asked whether (yes or no) they ever had used connections to avoid paying the fine for a traffic violation (what we call ticket fixing in this paper).

Risk taking driving behaviours were examined by five questions: maximum speed in built up areas, on rural roads, and on motorways (a circle had to be drawn on a scale for each location with marks labelled with multiple of 10; when the circle was placed between two marks, say 40 and 50, it was coded 45), a question on drinking and driving, and a question on the use of cellular phone while driving. Maximum reported speeds were categorised in two groups: under and above the legal limit + 10%. The question on drinking and driving was: in the past 12 months, have you ever driven after drinking too much alcohol. As far as phone and driving is concerned, participants were considered to have risky behaviour when they reported to answer a phone call whatever the driving circumstances or when they reported not to stop the vehicle before starting a phone call.

Drivers were asked how many kilometres they drove a four wheel vehicle in the past 12 months. The history of traffic violations was estimated from the number of points remaining on their driving licence: a point demerit system was introduced in France in 1992. All new licensed drivers start with 12 points. The main offences for which points are lost relate to conviction for speeding and driving under the influence of alcohol. When all points are lost the driving licence is withdrawn. Points can be recovered with time and with attending training sessions. The type of the principal vehicle owned in January 2001 was coded in five categories corresponding to increasing average maximum speed. These categories were: (1) city cars and utilitarian vehicles, (2) small family cars, (3) large family cars, MPVs, and 4×4, (4)

executive and luxury cars, (5) sports cars. Finally, attitudes towards traffic regulation were assessed by asking participants whether they agreed or disagreed with a set of 12 assertions related to the debate on traffic regulations and enforcement in France in 2001. We derived from them a score that was further categorised in four groups with balanced relative sizes. Assertions were either positive or negative and were related to speed limitation (for example, "Speed limitation should depend on driver skill"), to seat belt use (for example, "Seat belt use should be driver decision"), to drinking and driving (for example, "The maximum blood concentration while driving should be reduced to 0 g/l", or "maximum blood concentration should depend on driver ability to withstand alcohol"), or to the overall traffic regulation system (for example, "The point demerit system is useless" or "The driving licence should be updated regularly").

### Analysis

Two different people separately entered the data from the questionnaires into a database. The two entries were compared, discrepancies were corrected, and inconsistencies checked for. Data analysis used the Statistical Package for Social Sciences (SPSS 11.0 for Windows, Chicago, USA).

Differences in proportions were assessed with  $\chi^2$  tests for overall differences across categories or trends across categories. Proportion of participants who reported having tickets fixed were computed according to individual characteristics, risk taking behaviours (maximum speed in built up areas, on rural roads, on motorways, driving after drinking too much during the past 12 months, and risky use of cellular phone while driving) and SRTA as a driver of a four wheel vehicle during the 11 year follow up period. To assess the impact of potential confounders on the association with ticket fixing we fitted several logistic regression models with each five risk taking behaviours and SRTA as a driver taken as dependent variables in distinct models. Associations between a given dependent variable and ticket fixing were measured with adjusted odds ratios. To assess the effect of potential confounders, we computed odds ratios in five types of models. In type 1 models, the only independent variable was ticket fixing. Type 2 models adjusted the association on sex, age, driving mileage per year (three groups), alcohol consumption (five groups), and vehicle categories (four groups). Because those who reported ever having fixed tickets were more likely to reject traffic regulations we added the score of negative attitudes towards safety regulations as an extra independent variable in type 3 models. Finally, because a traffic citation is necessary for having the fine cancelled we assessed the change in the association when adding the number of points on the driving licence (three groups) in type 4 models. We also performed this analysis among the sub-group of participants who reported fewer than 12 points on their driving license (type 5 models).

**Table 3** Associations between risk taking driving behaviours (dependent variables) and report of ever having tickets fixed (independent variable). Results from multivariate logistic regression models\*

Models	Dependent variables						
	Maximum speed in built up areas >55 km/h	Maximum speed on rural roads >100 km/h	Maximum speed on motorways >145 km/h	Drinking and driving in the past 12 months	Risky use of cellular phone while driving	At least one SRTA as a driver of a four wheel vehicle in the follow up period	
Type 1 models: unadjusted OR	1.48 (1.35 to 1.61)	1.75 (1.62 to 1.89)	2.02 (1.85 to 2.20)	1.69 (1.55 to 1.85)	2.09 (1.88 to 2.32)	1.29 (1.11 to 1.51)	
Type 2 models: OR estimated with logistic regression multivariate model adjusted on sex, age, driving mileage per year (three groups), alcohol consumption (five groups), and vehicle categories (four groups)	1.28 (1.16 to 1.40)	1.61 (1.48 to 1.75)	1.79 (1.63 to 1.97)	1.44 (1.30 to 1.59)	1.90 (1.69 to 2.13)	1.22 (1.03 to 1.44)	
Type 3 models = type 2 models + score of negative attitudes towards traffic regulations	1.24 (1.13 to 1.37)	1.52 (1.40 to 1.66)	1.67 (1.52 to 1.84)	1.39 (1.26 to 1.54)	1.84 (1.63 to 2.07)	1.22 (1.03 to 1.45)	
Type 4 models = type 3 models + missing points on driving licence	1.24 (1.13 to 1.37)	1.52 (1.39 to 1.65)	1.66 (1.51 to 1.83)	1.39 (1.26 to 1.53)	1.83 (1.62 to 2.05)	1.21 (1.02 to 1.44)	
Type 5 models = same as type 3 models among participants with less than maximum number of points (12) on driving licence	1.78 (0.75 to 1.85)	1.49 (1.04 to 2.14)	1.76 (1.22 to 2.56)	1.56 (1.06 to 2.30)	1.84 (1.19 to 2.86)	1.05 (0.54 to 2.06)	

\*Adjusted odds ratios are only shown for the independent variable 'report of ever having tickets fixed'. All independent variables appear in table 4 (for type 4 models).

**RESULTS**

In all, 14 226 participants returned completed questions; 26 participants were excluded because of data discrepancies with the general cohort database, and 14 200 questionnaires could be used in the analysis (71.4%). The response rate was higher among men (73.7%) than women (65.3%), and respondents were slightly younger than non-respondents (mean age in 1 March 2001 was 56.6 years versus 57.3 years for men and 53.4 years versus 54.0 years among women). We also observed an upward trend in response rates with occupational category: among men the response rate was 61.8% among unskilled workers but reached 74.4% among skilled workers and 80.0% among managers; the comparable figures for women were 57.4% among unskilled workers, 67.7% among skilled workers, and 77.1% among managers.

Another 348 participants were excluded from the analysis because they did not drive in 2001. The sample for the analysis was therefore 13 852 (10 594 men and 3258 women). In the 11 year follow up period 5.5% of men and 5.2% of women reported one SRTA as a driver of a four wheel vehicle; 0.22% of men and 0.52% of women reported two SRTA as a driver of a four wheel vehicle, and no men and women reported three such accidents.

**Risk taking driving behaviours variables**

Figure 1 shows the distribution of reported maximum speed in built up areas, on rural roads, and motorways. The mode of each distribution is systematically 10 km/h above the legal limit (legal speed limits are 50, 90, and 130 respectively). Answers to the question on drinking and driving in the past 12 months were never (77.1%), a few times in the year (22.0%), about once a month (0.2%), about once a week (0.04%), more than once a week (0.02%). About 1% did not answer the question, either by leaving the question blank (133 participants) or by choosing the answer "I don't want to answer" (53 participants). A total of 1687 participants (12.2%) reported a risky use of cellular phone while driving as defined above.

**Ticket fixing**

Almost one third of the men (29.4%) and one fifth of the women (18.9%) reported using connections to have a ticket fixed at least once. Table 1 reports the variations in this percentage according to individual characteristics. Ticket fixing was significantly more frequent among younger participants and much more frequent among those who reported spending the most time on the road in the past 12 months. The proportion of those who reported having tickets fixed increased significantly with alcohol consumption groups, with type of vehicle owned in 2001 and with the number of missing points on driving licence. The same proportion did not vary either according to occupational categories or according to household income. We also compared proportions of participants who reported ticket fixing according with their attitudes towards traffic regulations. The proportion of participants who admitted ever having tickets fixed was significantly higher among the participants hostile to road safety regulations and enforcement as measured by a score built from 11 items.

**Ticket fixing, risk taking behaviours, and serious road traffic accidents**

We assessed whether the driving behaviours and the risk of SRTA for participants who admitted having tickets fixed differed from that of other road users. Part of the data came from annual cohort questionnaires. The sample size was therefore reduced because of missing values. Table 2 shows that all risk taking driving behaviours as estimated by the five selected variables were associated with reports of having

**Table 4** Associations between risk taking driving behaviours (dependent variables) and report of ever having tickets fixed (independent variable). Results from multivariate logistic regression for type 4 models

Dependent variables		At least one SRTA as a driver of a four wheel vehicle in the follow up period n = 11833 Cox and Snell $r^2 = 0.004$ aOR 95%CI	Risky use of cellular phone while driving n = 11820 Cox and Snell $r^2 = 0.051$ aOR 95%CI	Drinking and driving in the past 12 months n = 11809 Cox and Snell $r^2 = 0.114$ aOR 95%CI	Maximum speed on motorways > 145 km/h n = 11732 Cox and Snell $r^2 = 0.111$ aOR 95%CI	Maximum speed on rural roads > 100 km/h n = 11776 Cox and Snell $r^2 = 0.065$ aOR 95%CI	Maximum speed in built up areas > 55 km/h n = 11789 Cox and Snell $r^2 = 0.053$ aOR 95%CI
Report of ever having tickets fixed							
Yes		1.21 (1.02 to 1.44)	1.83 (1.62 to 2.05)	1.39 (1.26 to 1.53)	1.66 (1.51 to 1.83)	1.52 (1.39 to 1.65)	1.24 (1.13 to 1.37)
No (baseline)							
Sex							
Women		1.12 (0.88 to 1.43)	0.88 (0.72 to 1.06)	0.22 (0.18 to 0.27)	0.67 (0.58 to 0.79)	0.77 (0.67 to 0.87)	0.56 (0.50 to 0.63)
Men (baseline)							
Age (y)							
Driving mileage per year		1.12 (0.98 to 1.29)	1.82 (1.63 to 2.02)	1.32 (1.21 to 1.45)	1.51 (1.38 to 1.64)	1.39 (1.29 to 1.49)	1.32 (1.23 to 1.42)
>20000 km		1.98 (1.51 to 2.59)	2.92 (2.39 to 3.56)	1.30 (1.10 to 1.53)	2.22 (1.89 to 2.60)	1.64 (1.44 to 1.88)	1.65 (1.44 to 1.88)
10000–19999 km		1.59 (1.25 to 2.02)	1.45 (1.20 to 1.75)	1.35 (1.16 to 1.56)	1.52 (1.31 to 1.75)	1.33 (1.19 to 1.50)	1.48 (1.33 to 1.65)
<10000 km (baseline)							
Alcohol consumption							
Heavy drinker		0.87 (0.63 to 1.19)	1.56 (1.21 to 2.02)	14.0 (10.3 to 19.0)	1.67 (1.37 to 2.04)	1.31 (1.10 to 1.54)	1.66 (1.40 to 1.97)
Moderate		0.86 (0.65 to 1.12)	1.47 (1.17 to 1.85)	7.58 (5.63 to 10.2)	1.37 (1.14 to 1.64)	1.11 (0.95 to 1.28)	1.63 (1.41 to 1.87)
Occasional		0.81 (0.63 to 1.03)	1.44 (1.15 to 1.79)	4.60 (3.43 to 6.17)	1.28 (1.08 to 1.52)	1.12 (0.97 to 1.28)	1.42 (1.25 to 1.62)
Non-drinker (baseline)							
Vehicle categories							
Executive and luxury cars		0.85 (0.61 to 1.18)	1.55 (1.25 to 1.93)	0.78 (0.65 to 0.95)	2.51 (2.09 to 3.01)	1.36 (1.16 to 1.60)	1.29 (1.08 to 1.54)
Large family cars, MPVs, and 4x4		0.87 (0.70 to 1.09)	1.18 (1.00 to 1.39)	0.87 (0.76 to 0.99)	1.92 (1.67 to 2.20)	1.35 (1.21 to 1.52)	1.14 (1.02 to 1.28)
Small family cars		1.04 (0.84 to 1.29)	0.84 (0.71 to 1.00)	0.90 (0.78 to 1.03)	1.30 (1.13 to 1.50)	1.16 (1.03 to 1.31)	1.01 (0.90 to 1.13)
City cars and utilitarian vehicles (baseline)							
Score of negative attitudes towards traffic regulations							
7–12		0.98 (0.76 to 1.26)	1.51 (1.27 to 1.80)	1.64 (1.42 to 1.89)	3.70 (3.21 to 4.28)	2.45 (2.16 to 2.77)	1.62 (1.42 to 1.85)
5–6		1.15 (0.92 to 1.43)	1.25 (1.06 to 1.48)	1.24 (1.08 to 1.42)	2.35 (2.05 to 2.70)	1.75 (1.56 to 1.96)	1.36 (1.21 to 1.52)
3–4		1.18 (0.96 to 1.45)	1.09 (0.92 to 1.28)	1.15 (1.01 to 1.31)	1.49 (1.30 to 1.71)	1.25 (1.12 to 1.40)	1.11 (1.00 to 1.23)
0–2 (baseline)							
Missing points on driving licence							
More than 2 (3–12)		1.17 (0.76 to 1.80)	1.43 (1.08 to 1.91)	1.07 (0.82 to 1.39)	1.65 (1.29 to 2.10)	1.51 (1.20 to 1.90)	1.24 (0.94 to 1.63)
One or two		1.18 (0.74 to 1.88)	1.24 (0.90 to 1.71)	1.17 (0.89 to 1.54)	1.45 (1.12 to 1.89)	1.39 (1.09 to 1.77)	1.33 (0.99 to 1.78)
None (baseline)							

tickets fixed. Moreover, reporting having tickets fixed was also associated with the risk of SRTA in the 11 years of follow up.

Odds ratios for these associations were further estimated using a logistic regression model (table 3). Bivariate analyses are tabulated in the "type 1 models" line. Odds ratios for associations ranged from 1.48 to 2.09 for risk taking variables and was 1.29 for the risk of SRTA. Type 2 models adjusted on factors found to be associated with ticket fixing in table 1 (sex, age, driving mileage per year (three groups), alcohol consumption (five groups), and vehicle categories (for groups)). When compared with type 1 models, odd ratios decreased only slightly.

To check whether the effect of ticket fixing might simply reflect an overall individual attitude towards traffic regulation we added in type 3 models our score for negative attitudes towards traffic regulation. Measures for associations with ticket fixing remained almost unchanged when compared with type 2 models.

Finally, because the effect of ticket fixing might also reflect the rate of traffic violations, we assessed the variation of the coefficients associated with ticket fixing when including (type 4 models) the number of points missing on the driving licence (in three groups, see table 1). Here again these coefficients were remarkably stable when compared with type 3 models. We also performed this analysis among the sub-sample of participants who reported losing points for demerits (type 5 models). The power of the analysis was much lower. The association with speed in urban areas and the risk of SRTA became not significant. The other four variables remained associated with ticket fixing.

Detailed results from the most comprehensive type of models (type 4 models) are tabulated in table 4, showing association measures for all independent variables. There is a strong association between a risky use of cellular phone while driving and a high yearly driving mileage. As expected, we also note a strong trend in the association between drinking and driving and levels of alcohol consumption.

## DISCUSSION

In our study of a large French working population (10 594 men and 3258 women), more than a quarter admitted having used connections to avoid paying a traffic violation penalty. Our data also showed a strong association between the reports of ticket fixing and driving at high speeds, after drinking too much, and risky use of cellular phone while driving. Participants who reported having tickets fixed were also more likely to have had SRTA as a driver in the past 11 years.

Previous work on driving behaviour has brought out a number of factors correlated with risk taking behaviour and number of accidents. To our knowledge, however, no studies have ever looked at the potential impact of the feeling of impunity conferred by the knowledge of ability to avoid punishment for traffic offences. It was similarly difficult to assess the importance of these practices in countries other

than France. Web searching with automated search engines like Google (<http://www.google.fr>) left us with the impression that, at least in English speaking countries, it is less common or at least less discussed than in France. It is, in any case, illegal in those countries.

Characteristics of those who reported ticket fixing were partly consistent with a previous study on traffic penalty indulgence conducted in France in 1988.<sup>3</sup> This study showed that indulgence rates were higher for intermediary profession and for transportation professionals and were not the privilege of the upper socioeconomic groups. This study showed that most often, penalties were cancelled through the intercession of a family member.

We were concerned that the effect of ticket fixing could simply be part of a general behaviour that led drivers both to violate traffic regulation and to try and avoid paying penalties. Because the questionnaire was also designed to study drivers' attitudes towards road safety and traffic regulation, we were able to compute a score based on 11 items. The slight variation in association coefficients when this score was included in the models (type 3 models) reassured us that the associations between ticket fixing and risk taking behaviours indicators were not totally confounded by general attitudes towards traffic law.

Another important methodological concern here was to ensure that reports of ticket fixing were not actually a surrogate for traffic violations, because evidently a traffic citation and ensuing fine are necessary prerequisites for having the fine cancelled. For this reason, we assessed the variation in regression coefficients with the number of licence demerit points included and excluded. The remarkable stability of these coefficients supports our interpretation that a feeling of impunity has a genuine impact on risk taking behaviours (type 4 models). None the less, the question on ticket fixing covered the respondent's lifetime, while the number of points on the licence refers only to a recent period. Moreover, points can be recovered after a period free of any penalty or attending retraining classes, and, of course, those who can have tickets fixed are also likely to be able to avoid losing points. Therefore, to confirm our interpretation, we conducted the same analysis on the small sub-sample of subjects who reported having fewer than 12 points (the maximum) on their driving licence (type 5 models). This sensitivity analysis confirmed the stability of the association between self reported risk taking behaviours and ticket

### Key points

- We report here results that show that a very substantial proportion of French citizens admit having used connections to cancel traffic penalties.
- We also strongly suggest that these people are more likely to report driving fast and driving after drinking too much, as well as to have had more serious road traffic accidents in the past 11 years.

### Policy implications

- The current practice in France permits a wide range of people, including elected representatives, police officers, and intelligence officers, to cancel fines and penalties for traffic offences. This practice, called ticket fixing in US parlance, appears to be illegal in most English speaking countries and, while it occurs, involves corruption, veniality, and is subject to criminal penalties.
- It seems as if this practice has declined recently in France. However, this behaviour has not disappeared and could easily re-emerge as few juridical and administrative barriers have been established to prevent it.
- The results of this study call for an increased awareness of the potential consequences of this practice and should help policy makers to issue more dissuasive rules.

fixing. The association with risk of SRTA was however not significant in that sub-sample.

Because we asked about having tickets fixed retrospectively, we were unable to assess the temporal sequence with risk taking behaviours. While participants who have risky driving behaviours might have more opportunity to fix a ticket, which we partially assessed using the points on driving licence, it is unlikely that a road traffic accident led to more opportunity to fix a ticket. Ideally however, history and details on all penalties would have been very useful.

It is also possible that the association we found between ticket fixing and risk taking behaviours may be biased by the higher participation rate in our study by some categories of workers. In particular we found that the response rate was higher among men than among women, higher among higher occupational categories, and that respondents were slightly younger than non-respondents. We adjusted for sex and age in the multivariate models and found no association between ticket fixing and occupational categories in our sample but we cannot be sure that our results apply to non-respondents.

To our knowledge only one study<sup>17</sup> has examined the validity of self reported speed by observing driving behaviours independently in a population questioned about driving behaviour. The results indicated that self reports of driving speed can be used as surrogate for actual driving speed.

Our results point out the urgency of abolishing the practice of using connections to have traffic fines cancelled in France. Elected representatives are often participants in this practice; they also have the authority to stop it. Our results show that this practice not only contravenes the democratic principle that no one is above the law: it is also dangerous.

#### ACKNOWLEDGEMENTS

We thank all those who supported this work and in particular the staff of unit 88 of INSERM. Very special thanks go to Sébastien Bonenfant, Jean-François Chastang, Alice Gueguen, Marcel Goldberg, Nadine Kaniewsky, Annette Leclerc, Nathalie Lopes, Danièle Luce, and Marie Zins for their valuable comments throughout the study and the preparation of the manuscript.

#### Authors' affiliations

**E Lagarde**, INSERM U88, IFR69, Saint-Maurice, France  
**M Chiron, S Lafont**, UMRETTTE-INRETS, Bron, France

Funding: the project was funded by Electricité de France, Gaz de France and Fondation MAIF.

Conflicts of interest: none declared

#### REFERENCES

- 1 **Dorozynski A**. French presidential elections can kill. *BMJ* 2001; **323**:1021.
- 2 **Perez-Diaz C**. Les régulations rationnelles de contrôle des contraventions. Cahiers de la sécurité. No 25. Paris: La documentation Française, 1996.
- 3 **Pérez-Diaz J**. *Jeux avec des règles pénales, Le cas des contraventions routières*. Paris: L'Harmattan, 1988. [Collection "Logiques Sociales". Série Déviance/CESDIP.]
- 4 **Page Y**. A statistical model to compare road mortality in OECD countries. *Accid Anal Prev* 2001; **33**:371-85.
- 5 **ONISR**. (Observatoire national interministériel de sécurité routière). La sécurité routière en France. *Bilan de l'année*. Paris: La documentation Française, 2002.
- 6 **Karlberg L**, Uden AL, Elofsson S, *et al*. Is there a connection between car accidents, near accidents, and type A drivers? *Behav Med* 1998; **24**:99-106.
- 7 **Magnavita N**, Narda R, Sani L, *et al*. Type A behaviour pattern and traffic accidents. *Br J Med Psychol* 1997; **70**:103-7.
- 8 **Elander J**, West R, French D. Behavioral correlates of individual differences in road-traffic crash risk: an examination method and findings. *Psychol Bull* 1993; **113**:279-94.
- 9 **Lajunen T**, Parker D, Stradling JR. Dimensions of driver anger, aggressive and highway code violations and their mediation by safety orientation in UK drivers. *Transportation Research* 1998; **1F**:107-21.
- 10 **Chliaoutakis JE**, Demakakos P, Tzamalouka G, *et al*. Aggressive behavior while driving as predictor of self-reported car crashes. *Journal of Safety Research* 2002; **33**:431-43.
- 11 **Meadows ML**, Stradling SG, Lawson S. The role of social deviance and violations in predicting road traffic accidents in a sample of young offenders. *Br J Psychol* 1998; **89**:417-31.
- 12 **West R**, Elander J, French D. Mild social deviance, type-A behaviour pattern and decision-making style as predictors of self-reported driving style and traffic accident risk. *Br J Psychol* 1993; **84**:207-19.
- 13 **Parker D**, West R, Stradling S, *et al*. Behavioural characteristics and involvement in different types of traffic accident. *Accid Anal Prev* 1995; **27**:571-81.
- 14 **Kontogiannis T**, Kossivelou Z, Marmaras N. Self-reports of aberrant behaviour on the roads: errors and violations in a sample of Greek drivers. *Accid Anal Prev* 2002; **34**:381-99.
- 15 **Goldberg M**, Leclerc A, Chastang JF, *et al*. Mise en place d'une cohorte épidémiologique à Electricité de France - Gaz de France. Recrutement des volontaires. Principales caractéristiques de l'échantillon. *Rev Epidemiol Sante Publique* 1990; **38**:265-8.
- 16 **Goldberg M**, Leclerc A, Bugel I, *et al*. La cohorte GAZEL, laboratoire épidémiologique. Bilan des cinq premières années (1989-1993) de suivi des 20 000 volontaires d'Electricité de France - Gaz de France. [In French]. Paris: INSERM - Collection Grandes Enquêtes, 1994.
- 17 **West R**, French D, Kemp R, *et al*. Direct observation of driving, self reports of driver behaviour, and accident involvement. *Ergonomics* 1993; **36**:557-67.