



ICARUS Project
TREN/SUB/01-2008



ICARUS Project

Inter - Cultural Approaches for Road Users Safety

Research report

Results

ITALY

CAR DRIVERS (QUESTIONNAIRE SECTION 1)

Sample description

A total of 545 people answered the Section 1 of the questionnaire. Males were 312 (57.2% of the total sample) and females were 233 (42.8% of the total sample). Their mean age was 19.7 years (standard deviation .45), ranging between 18 and 23 years. Age was no significantly different between males and females. Not all the respondents answered all the items of the questionnaire, thus each analysis was run on the largest sample available for that analysis (missing values were not estimated).

Driving habits

Tables 1 to 9 show the distribution as a function of gender of the answers to items concerning the driving habits and experiences. Few Italian young drivers own a car, though female drivers are more likely to own a car than male drivers. They however refer to use a car on a very regular basis (most of them drive everyday, again with a prevalence of male drivers compared to female drivers), and for relatively long trips. Interestingly, male drivers refer to drive after midnight relatively often (about 62% of them drive after midnight more than 2 times a week), where female drivers are far less likely to drive after midnight (about 51% of them do not drive after midnight at all). Male drivers also refer to have received a traffic fine more often than female drivers, mostly for having parked where it was forbidden, and for speeding.

Interestingly, about 40% the sample refers (173 respondents out of 444) state that they have driven at least once after having drunk alcohol (though it must be noticed that the item do not refer to being drunk, but only to driving after having drunk some alcohol). However, less than half of them refer of having recognized some of the symptoms associated with driving under the effects of alcohol, especially doziness and difficulties on keeping focused on the road. This might suggest that a consistent number of young drivers are still unaware of the negative effects of driving under the effects of alcohol.

Summarizing, Italian young drivers seem to be characterized by being frequent drivers, quite expert indeed, also experienced of driving during night hours (especially male drivers), and not very aware of the dangers associated with driving under the effects of alcohol.

Table 1. Frequency distribution of respondents for item H4 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

H_4 Do you own a car?		
	Yes	No
Males	41 (13.18%)	270 (86.82%)*
Females	58 (24.89%)*	175 (75.11%)
Total	99 (18.2%)	445 (81.8%)

Table 2. Frequency distribution of respondents for item H5 as a function of gender. * refers to significant differences ($p<.001$) between males and females.

		H_5 How many times a week do you use the car?					
		Never	1-2 times	3-4 times	5-6 times	Everyday	Only in the weekend
Males		2 (.74%)	15 (5.58%)	38 (14.13%)	40 (14.87%)	171 (63.57%)*	3 (1.12%)
Females		0	17 (9.71%)	37 (21.14%)	27 (15.43%)	89 (50.86%)	5 (2.86%)
Total		2 (.45%)	32 (7.21%)	75 (16.89%)	67 (15.09%)	260 (58.56%)	8 (1.8%)

Table 3. Frequency distribution of respondents for item H6 as a function of gender. * refers to significant differences ($p<.001$) between males and females.

		H_6 How many kilometers do you drive in a week?				
		1-10 Km	11-30 Km	31-50 Km	51-100 Km	More than 100 Km
Males		9 (3.35%)	18 (6.69%)	63 (23.42%)	64 (23.79%)	115 (42.75%)*
Females		15 (8.57%)	47 (26.86%)*	49 (28.0%)	39 (22.29%)	25 (14.29%)
Total		24 (5.41%)	65 (14.64%)	112 (25.23%)	103 (23.2%)	140 (31.53%)

Table 4. Frequency distribution of respondents for item H7 as a function of gender. * refers to significant differences ($p<.001$) between males and females.

		H_7 In the last three months, how often have you driven for more that 2 hours uninterruptedly?			
		Never	1-2 times	2-4 times	More than 4 times
Males		74 (27.51%)	92 (34.2%)	55 (20.45%)	48 (17.84%)*
Females		94 (53.71%)*	46 (26.29%)	22 (12.57%)	13 (7.43%)
Total		168 (37.84%)	138 (31.08%)	77 (17.34%)	61 (13.74%)

Table 5. Frequency distribution of respondents for item H8 as a function of gender. * refers to significant differences ($p<.001$) between males and females.

		H_8 In the last three months, how often have you happened to drive between midnight and 5:00 in the morning?			
		Never	1-2 times	2-4 times	More than 4 times
Males		52 (19.33%)	48 (17.84%)	57 (21.19%)	112 (41.64%)*
Females		89 (50.86%)*	30 (17.14%)	26 (14.86%)	30 (17.14%)
Total		141 (31.76%)	78 (17.57%)	83 (18.69%)	142 (31.98%)

Table 6. Frequency distribution of respondents for item H9 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

H_9 Have you ever got a traffic fine?		
	Yes	No
Males	214 (79.55%)*	55 (20.45%)*
Females	162 (92.57%)*	13 (7.43%)
Total	376 (84.68%)	68 (15.32%)

Table 7. Frequency distribution of respondents for kinds of violations as a function of gender. * refers to significant differences ($p < .001$) between males and females.

	Males	Females	Total
No parking	32 (10.29%)*	7 (3.%)	39 (7.17%)
Running a red light	3 (.96%)	0	3 (.55%)
Running a stop sign	3 (.96%)	1 (.43%)	4 (.74%)
Speeding	18 (5.79%)*	1 (.43%)	19 (3.49%)
Drunk driving	0	0	0
Lack of seatbelts use	7 (2.25%)	0 *	7 (1.29%)

Table 8. Frequency distribution of respondents for item H18 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

H_18 Have you ever driven after drinking alcoholic drink?						
	Never					Often
Males	135 (50.19%)	51 (18.96%)	28 (10.41%)	33 (12.27%)*	7 (2.6%)	15 (5.58%)
Females	136 (77.71%)*	21 (12.%)	11 (6.29%)	5 (2.86%)	2 (1.14%)	0
Total	271 (61.04%)	72 (16.22%)	39 (8.78%)	38 (8.56%)	9 (2.03%)	15 (3.38%)

Table 9. Frequency distribution of respondents for alcohol effects as a function of gender. * refers to significant differences ($p < .001$) between males and females.

	Males	Females	Total
You could hardly follow the trajectory	7 (2.25%)	2 (.86%)	9 (1.65%)
You could hardly keep your head on straight	2 (.64%)	2 (.86%)	4 (.74%)
You had muscle cramps	4 (1.29%)	0	4 (.74%)
You could hardly keep your eyes open	16 (5.14%)	5 (2.15%)	21 (3.86%)
You got stomach cramps	8 (2.57%)	0	8 (1.47%)
You could not focus on the road	19 (6.11%)	9 (3.86%)	28 (5.15%)
Someone who was with you made you notice it	10 (3.22%)	1 (.43%)	11 (2.02%)

Specific dimensions of the questionnaire scales

Scale A, Attitude toward road safety issues.

Data from the Scale A of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.85, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153)=2828.394$, $p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 47.19% of the total variance. Table A.1 shows the eigenvalues and the variance accounted for by each factor. Table A.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Tolerance toward violations", accounting for by the 19.32% of the common variance) refers to a negative attitude toward traffic rules. Items such as "*To keep traffic smooth-flowing you should ignore many of the road traffic rules*" load on this factor.

The second factor (labelled "Negative attitude towards drugs and alcohol", accounting for by the 18,1% of the common variance) refers to a negative attitude toward driving under the effects of substances. Items such as "*I would never drive under the influence of narcotic drugs*" load on this factor.

The third factor (labelled "Positive attitude toward speeding", accounting for by the 14.8% of the common variance) refers to a positive attitude toward going by car with a fast driver. Items such as "*It is ok to go by car with a fast driver if it is the only way to go back home at night*" load on this factor. This factor is negatively correlated to the second factor, and positively correlated to the first factor (Table A.3).

Table A.1. Eigenvalues and variance accounted for by each factor (Scale A).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.953	27.514	27.514	3.478
2	2.332	12.958	40.472	3.258
3	1.209	6.714	47.186	2.664
4	1.076	5.980	53.166	
5	.920	5.114	58.280	
6	.848	4.712	62.993	
7	.825	4.581	67.573	
8	.775	4.308	71.881	
9	.744	4.133	76.014	
10	.681	3.784	79.798	

11	.632	3.510	83.308
12	.591	3.282	86.591
13	.561	3.115	89.705
14	.458	2.544	92.249
15	.451	2.503	94.752
16	.376	2.088	96.840
17	.344	1.909	98.749
18	.225	1.251	100.000

Table A.2. Factor loadings (Scale A).

	Factors		
	Tolerance toward violations	Negative attitude toward drugs and alcohol	Positive attitude toward speeding
A_1	0.647		
A_2	0.634		
A_3			
A_4	0.662		
A_5	0.272		
A_6	0.554		
A_7	0.322		0.288
A_8	0.488		
A_9	0.534		
A_10	0.536		
A_11	-0.336		
A_12			0.750
A_13			0.674
A_14		0.339	
A_15		0.584	
A_16		0.777	
A_17		0.883	
A_18		0.857	

Table A.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.295	.466
2	-.295	1.000	-.424
3	.466	-.424	1.000

Scale B, Locus of Control.

Data from the Scale B of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.74, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(435)=3414.58, p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 31.2% of the total variance. Table B.1 shows the eigenvalues and the variance accounted for by each factor. Table B.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Internal Locus of Control”, accounting for by the 9.62% of the common variance) refers to an internal Locus of Control, as respondents attribute responsibility of road accidents mostly to drivers. Items such as “*A careful driver can prevent any accident*” load on this factor.

The second factor (labelled “External Locus of Control, reversed”, accounting for by the 7.82% of the common variance) refers to an external Locus of Control, as respondents attribute responsibility of road accidents mostly to external causes, independent of drivers’ behaviour. Items such as “*Driving without accidents is mainly a question of good luck*” load on this factor.

The third factor (labelled “Attention related LOC”, reversed, accounting for by the 7.43% of the common variance) refers to an attention-related Locus of Control, as road accidents are considered to be the result of the lack of attention paid by a driver to the task. Items such as “*Driving without accidents depends on driver’s ability to pay attention to what happens on the road and pavement*” load on this factor.

The three factors are not correlated (Table B.3).

Table B.1. Eigenvalues and variance accounted for by each factor (Scale B).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.163	13.875	13.875	2.886
2	2.979	9.931	23.806	2.345
3	2.218	7.393	31.199	2.230
4	1.714	5.713	36.912	
5	1.450	4.833	41.745	
6	1.272	4.241	45.986	
7	1.188	3.961	49.947	
8	1.065	3.550	53.497	
9	1.027	3.422	56.920	
10	.948	3.161	60.080	
11	.912	3.040	63.121	
12	.850	2.835	65.955	

13	.834	2.781	68.736
14	.783	2.609	71.345
15	.757	2.523	73.868
16	.703	2.345	76.213
17	.693	2.310	78.523
18	.663	2.212	80.734
19	.629	2.098	82.833
20	.623	2.078	84.911
21	.598	1.995	86.906
22	.579	1.931	88.836
23	.548	1.828	90.664
24	.537	1.788	92.452
25	.473	1.577	94.029
26	.464	1.545	95.574
27	.408	1.361	96.936
28	.357	1.192	98.127
29	.295	.982	99.109
30	.267	.891	100.000

Table B.2. Factor loadings (Scale B).

	Factor		
	Internal LOC	External LOC	Attention-related LOC (reversed)
B_1		0.419	
B_2		0.397	
B_3			
B_4		0.438	
B_5		0.410	0.274
B_6	0.461		
B_7	0.617		
B_8	0.647		
B_9	0.578		
B_10	0.418		
B_11		0.397	
B_12		0.451	
B_13		0.425	
B_14		0.566	
B_15		0.520	

B_16	0.321		-0.444
B_17	0.520		
B_18			-0.512
B_19			-0.601
B_20		0.329	
B_21			-0.336
B_22			-0.322
B_23			
B_24			
B_25		0.320	
B_26			-0.576
B_27			-0.464
B_28	0.459		
B_29			
B_30	0.458		

Table B.3. Factor correlation matrix

Factor	1	2	3
1	1.000	.044	-.129
2	.044	1.000	-.072
3	-.129	-.072	1.000

Scale D, Rage during driving.

Data from the Scale D of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.79, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(91)=1818.489$, $p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 48.62% of the total variance. Table D.1 shows the eigenvalues and the variance accounted for by each factor. Table D.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Obstacle-related rage”, accounting for by the 21.73% of the common variance) refers to the rage reactions due to obstacles preventing drivers from driving the way they want. Items such as “*You are trapped in traffic jam*” load on this factor.

The second factor (labelled “Insult-related rage”, reversed, accounting for by the 16.5% of the common variance) refers the rage reactions due to insults or aggressive gestures from other drivers. Items such as “*Somebody sounds the horn for your way of driving*” load on this factor.

The third factor (labelled “Violation-related rage”, accounting for by the 9.42% of the common variance) refers to the rage reactions due to other drivers violating the traffic code. Items such as “*Somebody reverses just in front of you without looking back*” load on this factor.

The three factors are however correlated (Table D.3).

Table D.1. Eigenvalues and variance accounted for by each factor (Scale D).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.071	29.082	29.082	3.042
2	1.539	10.990	40.072	2.310
3	1.197	8.551	48.622	1.319
4	.996	7.111	55.733	
5	.926	6.612	62.345	
6	.859	6.134	68.479	
7	.757	5.407	73.887	
8	.679	4.847	78.734	
9	.634	4.530	83.264	
10	.593	4.238	87.503	
11	.569	4.065	91.568	
12	.489	3.496	95.064	
13	.479	3.422	98.486	
14	.212	1.514	100.000	

Table D.1. Eigenvalues and variance accounted for by each factor (Scale D).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.071	29.082	29.082	3.042
2	1.539	10.990	40.072	2.310
3	1.197	8.551	48.622	1.319
4	.996	7.111	55.733	
5	.926	6.612	62.345	
6	.859	6.134	68.479	
7	.757	5.407	73.887	
8	.679	4.847	78.734	
9	.634	4.530	83.264	
10	.593	4.238	87.503	
11	.569	4.065	91.568	
12	.489	3.496	95.064	
13	.479	3.422	98.486	
14	.212	1.514	100.000	

Table D.2. Factor loadings (Scale D).

	Factor		
	Obstacle-related rage	Insult-related rage (reversed)	Violation-related rage
D_1			0.425
D_2	0.481		
D_3			0.482
D_4			0.313
D_5	0.525		
D_6	0.301		0.337
D_7	0.566		
D_8	0.592		
D_9		-0.786	
D_10		-0.949	
D_11	0.533		
D_12	0.649		-0.291
D_13	0.418		
D_14	0.552		

Table D3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.413	.240
2	-.413	1.000	-.316
3	.240	-.316	1.000

Scale F, Personality.

Data from the Scale F of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.77, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(666)=4155.7$, $p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a five-factor solution that accounted for the 38.15% of the total variance. Table F.1 shows the eigenvalues and the variance accounted for by each factor. Table F.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Egocentrism", accounting for by the 5.90 % of the common variance) refers to egoism, indifference, being cool-headed. Items such as "*Some people think I am egoist and egocentric*" load on this factor.

The second factor (labelled "Anxiety", reversed, accounting for by the 8.24% of the common variance) refers to the tendency to be insecure, not serene, nervous. Items such as "*I easily panic*" (reversed) load on this factor.

The third factor (labelled "Sensation seeking", accounting for by the 6.91% of the common variance) refers to the Sensation-seeking personality trait. Items such as "*I often wish exciting things*" load on this factor.

The fourth factor (labelled "Impulsivity", accounting for by the 4.84% of the common variance) refers to Impulsivity. Items such as "*I'm easily distracted*" load on this factor.

The fifth factor (labelled "Stability", accounting for by the 5.78% of the common variance) refers to being calm and reflexive. Items such as "*I am tranquil and not irritable*" load on this factor

Factors are not correlated one to each other (Table F.3).

Table F.1. Eigenvalues and variance accounted for by each factor (Scale F).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.082	11.033	11.033	2.182
2	3.900	10.542	21.575	3.047
3	2.661	7.191	28.767	2.558
4	1.777	4.803	33.569	1.790
5	1.695	4.580	38.149	2.137
6	1.336	3.611	41.760	
7	1.245	3.364	45.124	
8	1.189	3.213	48.337	
9	1.152	3.114	51.451	
10	1.057	2.857	54.308	
11	.979	2.647	56.955	
12	.955	2.580	59.535	

13	.912	2.465	62.000	
14	.890	2.404	64.404	
15	.857	2.317	66.721	

Table F.1. ... *continued.* Eigenvalues and variance accounted for by each factor (Scale F).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
16	.779	2.105	68.826	
17	.756	2.044	70.871	
18	.745	2.013	72.883	
19	.719	1.942	74.826	
20	.696	1.882	76.708	
21	.683	1.846	78.554	
22	.664	1.794	80.349	
23	.642	1.736	82.085	
24	.629	1.700	83.785	
25	.599	1.619	85.404	
26	.573	1.548	86.952	
27	.568	1.536	88.489	
28	.525	1.420	89.909	
29	.510	1.380	91.289	
30	.500	1.350	92.639	
31	.465	1.256	93.894	
32	.439	1.186	95.080	
33	.419	1.131	96.211	
34	.390	1.054	97.265	
35	.358	.969	98.234	
36	.351	.948	99.182	
37	.303	.818	100.000	

Table F.2. Factor loadings (Scale F).

	Factor				
	Egocentris m	Anxiety (reversed)	Sensation Seeking	Impulsivit y	Stability
F_1	0.312	0.253			
F_2		-0.426			
F_3	0.440	-0.276			
F_4			0.604	0.276	
F_5		-0.542			
F_6					0.646
F_7					0.449
F_8	0.277				
F_9					
F_10			0.519		
F_11	0.495				
F_12			0.681		
F_13		-0.573			
F_14					0.442
F_15	-0.296				0.314
F_16		-0.291			
F_17					
F_18		-0.265			
F_19	0.499				
F_20			0.629		
F_21		-0.460			
F_22					0.520
F_23	-0.334				
F_24			0.419		
F_25		0.253	0.427		
F_26		-0.503			
F_27	-0.421				
F_28		-0.256	0.284		
F_29		-0.632			
F_30		-0.602			
F_31	-0.468			-0.266	
F_32			0.280		
F_33				-0.583	
F_34		-0.308		0.544	
F_35				-0.300	
F_36			0.343	-0.307	
F_37		-0.292		0.511	

Table F.3. Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000	.028	.091	.181	-.155
2	-.028	1.000	-.086	.088	.175
3	.091	.086	1.000	-.023	.030
4	-.181	.088	-.023	1.000	-.143
5	-.155	-.175	-.030	-.143	1.000

Scale I, Driving Behaviour Questionnaire.

Data from the Scale I of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.93, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(561)=6807.57, p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 38.83% of the total variance. Table I.1 shows the eigenvalues and the variance accounted for by each factor. Table I.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Violations”, accounting for by the 24.79% of the common variance) refers to violations of the traffic code. Items such as “*Exceeded speed limits on the motorway*” load on this factor.

The second factor (labelled “Slips/Lapses”, reversed, accounting for by the 25.15% of the common variance) refers to driving without committing action errors (slips) or lapses. Items such as “*Realised you were driving with your headlights switched off while they should have been switched on*” load on this factor.

The two factors are however notably correlated (Table I.3).

Table I.1. Eigenvalues and variance accounted for by each factor (Scale I).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	10.783	31.715	31.715	8.428
2	2.421	7.121	38.836	8.551
3	1.557	4.581	43.417	
4	1.333	3.922	47.339	
5	1.255	3.692	51.031	
6	.998	2.936	53.967	
7	.963	2.831	56.798	
8	.929	2.732	59.530	
9	.871	2.562	62.093	
10	.804	2.364	64.457	
11	.768	2.259	66.716	
12	.754	2.217	68.934	
13	.725	2.131	71.065	
14	.719	2.114	73.179	
15	.667	1.962	75.141	

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
16	.642	1.887	77.028	
17	.593	1.745	78.773	
18	.590	1.736	80.509	
19	.561	1.651	82.160	
20	.535	1.575	83.735	
21	.522	1.535	85.270	
22	.492	1.448	86.718	
23	.475	1.398	88.115	
24	.467	1.373	89.488	
25	.439	1.291	90.779	
26	.420	1.236	92.015	
27	.403	1.185	93.200	
28	.388	1.140	94.340	
29	.366	1.076	95.416	
30	.348	1.025	96.440	
31	.335	.986	97.426	
32	.310	.912	98.338	
33	.290	.852	99.190	
34	.276	.810	100.000	

Table I.2. Factor loadings (Scale I).

	Factor	
	Violations	Slips/Lapses (reversed)
I_1	0.499	
I_2	0.508	
I_3	0.414	
I_4	0.570	
I_5	0.523	
I_6	0.552	
I_7	0.612	
I_8	0.611	
I_9	0.470	
I_10	0.575	
I_11	0.576	
I_12	0.447	
I_13	0.563	
I_14	0.541	
I_15	0.662	
I_16	0.535	
I_17	0.410	
I_18		-0.451
I_19		-0.698
I_20		-0.630
I_21		-0.570
I_22		-0.485
I_23		-0.619
I_24		-0.592
I_25		-0.489
I_26		-0.576
I_27		-0.484
I_28		-0.595
I_29		-0.436
I_30		-0.573
I_31		-0.533
I_32		-0.618
I_33		-0.647
I_34		-0.496

Table I.3. Factor Correlation Matrix (Scale I)

Factor	1	2
1	-.604	-.604
2	1.000	1.000

Scale J, Imagined driving behaviour.

Data from the Scale J of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.86, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(231)=5146.80$, $p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a five-factor solution that accounted for the 63.35% of the total variance. Table J.1 shows the eigenvalues and the variance accounted for by each factor. Table J.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Risky driving", accounting for by the 21.60% of the common variance) refers to risky driving behaviour. Items such as "*You drive without keeping a safe distance*" load on this factor. The "Risky driving" factor has a strong negative correlation with both factors "Speeding" and "Alcohol/Drugs", whereas the "Slowing" factor correlates negatively with the "Pedestrian-related risky driving" factor (Table J.3).

The second factor (labelled "Slowing", accounting for by the 11.83% of the common variance) refers to the slowing the speed when required by the traffic conditions. Items such as "*You slow down when approaching a danger sign*" load on this factor. The "Slowing" has a strong negative correlation with the "Pedestrian-related risky driving" (Table J.3).

The third factor (labelled "Speeding", reversed, accounting for by the 21.9% of the common variance) refers to speedy driving. Items such as "*You exceed the speed limits by 10 Km/h*" load on this factor.

The fourth factor (labelled "Alcohol/Drugs", reversed, accounting for by the 19.0% of the common variance) refers to driving under the effects alcohol and drugs. Items such as "*You drive after having had a glass of beer/wine*" load on this factor.

The fifth (labelled "Pedestrian-related risky driving", accounting for by the 10.52% of the common variance) refers to omitting of slowing down in proximity of children playing areas. Items such as "*You slow down in a childrens' play area even if there is nobody in sight*" negatively load on this factor.

Table J.1. Eigenvalues and variance accounted for by each factor (Scale J).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	6.515	29.616	29.616	3.875
2	2.836	12.890	42.505	2.556
3	2.089	9.494	51.999	4.679
4	1.338	6.081	58.081	3.733
5	1.160	5.272	63.353	1.967
6	.970	4.409	67.762	
7	.787	3.577	71.339	
8	.754	3.427	74.766	
9	.648	2.943	77.710	
10	.588	2.674	80.384	
11	.513	2.330	82.714	
12	.490	2.229	84.943	
13	.476	2.163	87.106	
14	.408	1.854	88.960	
15	.388	1.763	90.724	
16	.381	1.732	92.456	
17	.339	1.543	93.999	
18	.323	1.467	95.466	
19	.301	1.369	96.836	
20	.247	1.123	97.958	
21	.234	1.065	99.024	
22	.215	.976	100.000	

Table J.2. Factor loadings (Scale J).

	Factor				
	Risky driving	Slowing	Speeding (reversed)	Alcohol/ Drugs (reversed)	Pedestrian-related risky driving
J_1			-0.763		
J_2			-0.791		
J_3			-0.695		
J_4			-0.825		
J_5			-0.699		
J_6	0.613				
J_7	0.703				
J_8	0.767				
J_9	0.566				
J_10	0.272				
J_11				-0.349	-0.270
J_12	0.275			-0.345	
J_13		0.345			
J_14		0.543			
J_15		0.867			
J_16		0.701			
J_17				-0.804	
J_18				-0.882	
J_19					-0.797
J_20					-0.757
J_21			0.525		-0.267
J_22				-0.544	

Table J.3. Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000	-.127	-.376	-.505	-.099
2	-.127	1.000	.163	-.188	-.403
3	-.376	.163	1.000	.365	-.106
4	-.505	.188	.365	1.000	.067
5	-.099	-.403	-.106	.067	1.000

Scale K, Driving under the effect of alcohol.

Data from the Scale K of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.72, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(36)=1111.22$, $p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 50.01% of the total variance. Table K.1 shows the eigenvalues and the variance accounted for by each factor. Table K.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Permissive attitude", accounting for by the 24.83% of the common variance) refers to having had personal experience of driving under the effect of alcohol. Items such as "*You drove less than two hours after having drunk alcohol*" load on this factor. The second factor (labelled "Preventing behaviours", accounting for by the 17.31% of the common variance) refers to having experienced behaviours aimed at preventing someone from driving under the effects of alcohol. Items such as "*You were the designated driver*" load on this factor.

Table K.3. shows that the two factors are positively correlated.

Table K.1. Eigenvalues and variance accounted for by each factor (Scale K).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	3.057	33.969	33.969	2.235
2	1.444	16.047	50.015	1.579
3	1.059	11.771	61.786	
4	.934	10.374	72.160	
5	.719	7.994	80.154	
6	.554	6.152	86.306	
7	.488	5.421	91.727	
8	.407	4.517	96.244	
9	.338	3.756	100.000	

Table K.2. Factor loadings (Scale K).

	Factor	
	Permissive attitude	Preventing behaviours
K_1	0.578	
K_2	0.774	
K_3		0.465
K_4	0.269	0.354
K_5	0.576	
K_6		0.653
K_7		0.608
K_8	0.532	
K_9	0.573	

Table K.3. Factor Correlation Matrix (Scale K).

Factor	1	2
1	1.000	.386
2	.386	1.000

Scale L, Effects of alcohol.

Data from the Scale L of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.85, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(190)=2903.82, p<.001$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 36.8% of the total variance. Table L.1 shows the eigenvalues and the variance accounted for by each factor. Table L.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Positive effects”, accounting for by the 17.85% of the common variance) refers to the supposed positive effects of alcohol assumption. Items such as “*Alcohol makes you more active and alert*” load on this factor.

The second factor (labelled “Underestimation of negative effects”, accounting for by the 12.95% of the common variance) refers to the underestimation of the negative effects of alcohol assumption. Items such as “*Alcohol has little effects on you*” load on this factor.

Table L.3. shows that the two factors are slightly correlated.

Table L.1. Eigenvalues and variance accounted for by each factor (Scale L).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.244	26.221	26.221	3.998
2	2.115	10.577	36.799	2.830
3	1.589	7.944	44.743	
4	1.113	5.566	50.309	
5	1.050	5.248	55.558	
6	.920	4.601	60.159	
7	.878	4.390	64.550	
8	.858	4.288	68.838	
9	.766	3.831	72.669	
10	.710	3.548	76.217	
11	.649	3.246	79.463	
12	.629	3.147	82.610	
13	.594	2.969	85.579	
14	.537	2.685	88.264	
15	.471	2.355	90.619	
16	.441	2.205	92.824	
17	.434	2.170	94.994	
19	.324	1.619	98.487	
20	.303	1.513	100.000	

Table L.2. Factor loadings (Scale L).

	Factor	
	Positive effects	Underestimation of negative effects
L_1	0.346	0.272
L_2	-0.547	
L_3	-0.553	
L_4	0.421	0.364
L_5		0.461
L_6		0.274
L_7	-0.488	
L_8		0.320
L_9	-0.319	0.325
L_10	0.456	0.278
L_11	-0.736	
L_12	0.575	0.261
L_13	-0.501	
L_14	-0.655	
L_15	-0.545	
L_16		0.536
L_17		0.500
L_18		0.645
L_19		0.484
L_20		

Table L.3. Factor Correlation Matrix (Scale L).

Factor	1	2
1	1.000	.277
2	.277	1.000

Cluster analysis

Factor scores on the identified subscales for scales A, B, D, F, I, K, and L were computed through regression analysis, and then submitted to cluster analysis in order to identify groups of respondents. Also the scores on the scale H (Moral disengagement) were included into the analysis. A hierarchical method of cluster analysis was used to identify the number of clusters, then a k-means method was used to identify the groups of respondents.

Results showed three separate groups of respondents. A multivariate analysis of variance yielded a significant difference among the three groups (Wilks' Lambda=0.13, $F_{42,846}=35.19$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,443}=245.04$, $p<.001$) and a significant interaction between group and subscale ($F_{40,8860}= 45.55$, $p<.001$), meaning that each group of respondents shows a specific profile.

1. **RISKY DRIVERS.** One group can be identified as composed of risky drivers. They have a permissive attitude toward driving under the effect of alcohol and recreational drugs, and are not that much aware of the negative effects of alcohol upon driving. They also refer not to have a correct behaviour during driving, and indeed they are quite tolerant toward violations of the traffic code and speeding. Furthermore, risky drivers have high scores on driving related rage, especially due to obstacles, and high scores on moral disengagement. Compared to safe drivers, risky drivers have higher scores on sensation seeking and impulsivity, and have more direct experiences of driving under the effect of alcohol.
2. **OVERCONFIDENT DRIVERS.** People in this group are characterized by being rather overconfident on their abilities as drivers. However, they are more tolerant toward violations of the traffic rules compared to safe drivers, but they show higher levels of rage, both violation- and obstacle-related than safe drivers. Similarly to the risky drivers, however, they show high scores on moral disengagement. They also seem to be aware of the negative effects of alcohol upon driving, though are less involved in preventing behaviors.
3. **SAFE DRIVERS.** Safe drivers are instead characterized by being not tolerant toward driving under the effects of alcohol and drugs, toward violations of traffic rules and speeding. Safe drivers have a rather high score on internal Locus of Control, and show intermediate levels of anxiety. They are also aware of the alcohol negative effects upon driving, and do not feel rage during driving. People in the safe drivers group show low scores on moral disengagement.

Interestingly, the three groups do not differ in terms of age or gender, though a prevalence of males can be observed among the risky and overconfident drivers.

The average score per subscale (and standard error) for each group is shown in Table 1. Tables 2, 3, and 4 report the results of the post-hoc comparisons among the three groups. Table 5 shows the respondents' mean age as a function of gender and group. Figure 1 shows the profiles of the three groups of drivers on the subscales. Risky drivers seem to be aware that their behaviour increases the risk of being involved in car accidents, as they rate their risk as higher compared to respondents in the other two groups (Figure 2), though they are not more worried than the other respondents. Also, respondents in the risky drivers group consider their friends as supportive and even encouraging their reckless behaviour more than respondents in the other two groups (Figure 3). Similarly, the same respondents consider that their parents would be less angry for their reckless driving behaviour (Figure 4).

Table 1. Average scores and standard errors for each group on the subscales of the questionnaire.

	SAFE drivers			RISKY drivers			OVERCONFIDENT drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Tolerance toward violations	-0.47	0.05	217	0.77	0.09	66	0.37	0.06	163
Negative attitude toward alcohol/drugs	0.30	0.05	217	-1.09	0.09	66	0.10	0.06	163
Positive attitude toward speeding	-0.37	0.05	217	0.74	0.09	66	0.17	0.06	163
Internal Locus of Control	-0.02	0.06	217	0.19	0.11	66	-0.07	0.07	163
External Locus of Control	-0.39	0.05	217	0.25	0.09	66	0.37	0.06	163
Attention related Locus of Control (rev)	-0.07	0.06	217	0.12	0.10	66	-0.07	0.07	163
Obstacle-related rage	-0.47	0.05	217	0.62	0.09	66	0.39	0.06	163
Insult-related rage (rev)	0.21	0.06	217	-0.01	0.11	66	-0.34	0.07	163
Violation-related rage	-0.06	0.05	217	-0.16	0.09	66	0.16	0.06	163
Moral disengagement	-0.53	0.05	217	0.91	0.08	66	0.39	0.05	163
Egocentrism	-0.29	0.05	217	0.50	0.09	66	0.14	0.06	163
Anxiety (rev)	-0.09	0.06	217	-0.04	0.11	66	0.17	0.07	163
Sensation Seeking	-0.40	0.05	217	0.64	0.10	66	0.24	0.06	163
Impulsivity	-0.29	0.05	217	0.52	0.09	66	0.23	0.06	163
Stability	0.22	0.06	217	-0.18	0.10	66	-0.29	0.06	163
Violations	-0.54	0.04	217	1.28	0.08	66	0.09	0.05	163
Slips(Lapses (rev)	0.37	0.05	217	-1.14	0.09	66	0.09	0.06	163
Alcohol positive effects	-0.30	0.05	217	1.03	0.10	66	-0.05	0.06	163
Underestimation of alcohol effects	-0.42	0.05	217	1.01	0.09	66	0.10	0.06	163
Permissive attitude toward alcohol	-0.35	0.04	217	1.36	0.08	66	-0.16	0.05	163
Prevention behaviours	-0.15	0.05	217	0.55	0.10	66	-0.08	0.06	163

Table 2. Comparison between Safe and Risky drivers on each subscale.

	SAFE drivers	RISKY drivers	Significance
	N=217	N=66	
Tolerance toward violations	-0.47	0.77	p<.001
Negative attitude toward alcohol/drugs	0.30	-1.09	p<.001
Positive attitude toward speeding	-0.37	0.74	p<.001
Internal Locus of Control	-0.02	0.19	ns
External Locus of Control	-0.39	0.25	p<.001
Attention related Locus of Control (rev)	-0.07	0.12	ns
Obstacle-related rage	-0.47	0.62	p<.001
Insult-related rage (rev)	0.21	-0.01	ns

Violation-related rage	-0.06	-0.16	ns
Moral disengagement	-0.53	0.91	p<.001
Egocentrism	-0.29	0.50	p<.001
Anxiety (rev)	-0.09	-0.04	ns
Sensation Seeking	-0.40	0.64	p<.001
Impulsivity	-0.29	0.52	p<.001
Stability	0.22	-0.18	p<.001
Violations	-0.54	1.28	p<.001
Slips/Lapses (rev)	0.37	-1.14	p<.001
Alcohol positive effects	-0.30	1.03	p<.001
Underestimation of alcohol effects	-0.42	1.01	p<.001
Permissive attitude toward alcohol	-0.35	1.36	p<.001
Prevention behaviours	-0.15	0.55	p<.001

Table 3. Comparison between Safe and Overconfident drivers on each subscale.

	SAFE drivers N=217	OVERCONFIDENT drivers N=163	Significance
Tolerance toward violations	-0.47	0.37	p<.001
Negative attitude toward alcohol/drugs	0.30	0.10	p<.001
Positive attitude toward speeding	-0.37	0.17	p<.001
Internal Locus of Control	-0.02	-0.07	ns
External Locus of Control	-0.39	0.37	p<.001
Attention related Locus of Control (rev)	-0.07	-0.07	ns
Obstacle-related rage	-0.47	0.39	p<.001
Insult-related rage (rev)	0.21	-0.34	p<.001
Violation-related rage	-0.06	0.16	ns
Moral disengagement	-0.53	0.39	p<.001
Egocentrism	-0.29	0.14	p<.001
Anxiety (rev)	-0.09	0.17	ns
Sensation Seeking	-0.40	0.24	p<.001
Impulsivity	-0.29	0.23	p<.001
Stability	0.22	-0.29	p<.001
Violations	-0.54	0.09	p<.001
Slips/Lapses (rev)	0.37	0.09	p<.001
Alcohol positive effects	-0.30	-0.05	p<.001
Underestimation of alcohol effects	-0.42	0.10	p<.001
Permissive attitude toward alcohol	-0.35	-0.16	ns
Prevention behaviours	-0.15	-0.08	ns

Table 4. Comparison between Overconfident and Risky drivers on each subscale.

	RISKY drivers N=66	OVERCONFIDENT drivers N=163	Significance
Tolerance toward violations	0.77	0.37	p<.001
Negative attitude toward alcohol/drugs	-1.09	0.10	p<.001
Positive attitude toward speeding	0.74	0.17	p<.001
Internal Locus of Control	0.19	-0.07	ns
External Locus of Control	0.25	0.37	ns
Attention related Locus of Control (rev)	0.12	-0.07	ns
Obstacle-related rage	0.62	0.39	ns
Violation-related rage	-0.01	-0.34	ns
Insult-related rage	-0.16	0.16	ns
Moral disengagement	0.91	0.39	p<.001
Egocentrism	0.50	0.14	ns
Anxiety (rev)	-0.04	0.17	ns
Sensation Seeking	0.64	0.24	p<.001
Impulsivity	0.52	0.23	ns
Stability	-0.18	-0.29	ns
Violations	1.28	0.09	p<.001
Slips/Lapses (rev)	-1.14	0.09	p<.001
Alcohol positive effects	1.03	-0.05	p<.001
Underestimation of alcohol effects	1.01	0.10	p<.001
Permissive attitude toward alcohol	1.36	-0.16	p<.001
Prevention behaviours	0.55	-0.08	p<.001

Table 5. Mean age (years) and standard errors as a function of gender and group.

		Mean age	Standard error	N
Males	Safe drivers	19.60	0.11	97
	Risky drivers	19.85	0.14	61
	Overconfident drivers	19.39	0.11	104
Females	Safe drivers	19.27	0.10	120
	Risky drivers	19.40	0.48	5
	Overconfident drivers	19.31	0.14	59

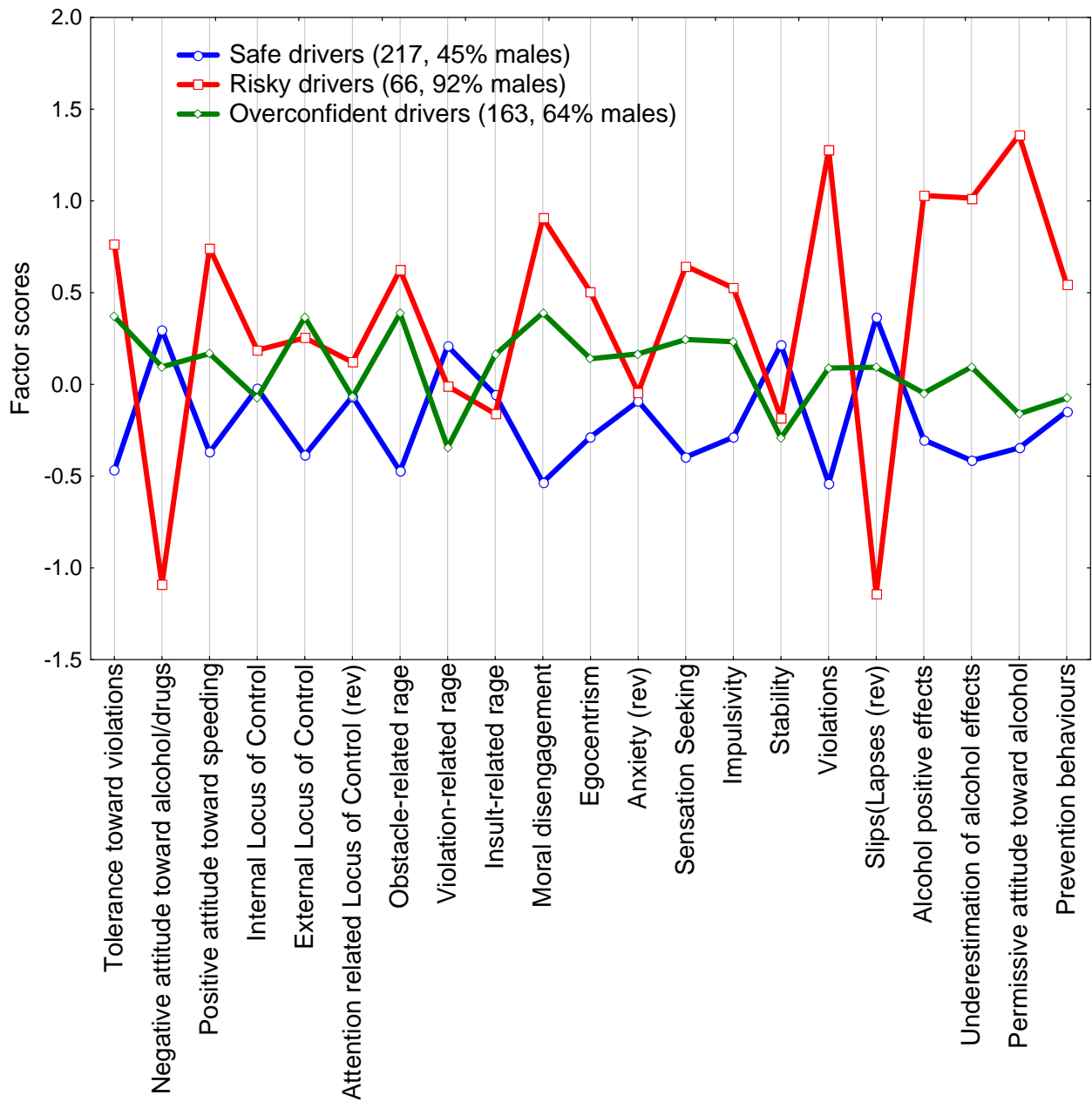


Figure 1. Average scores for each group on the subscales of the questionnaire.

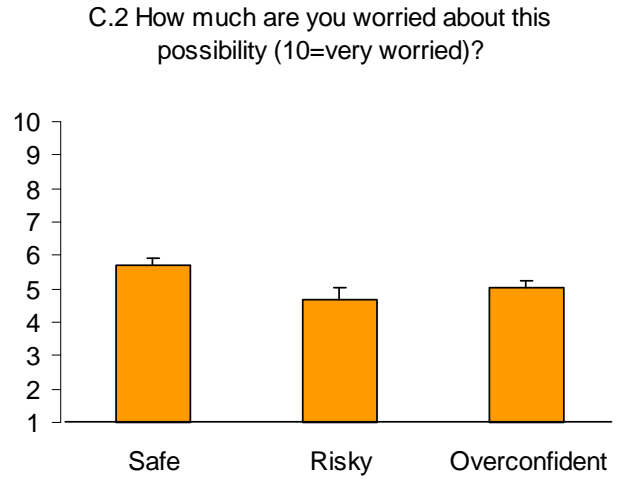
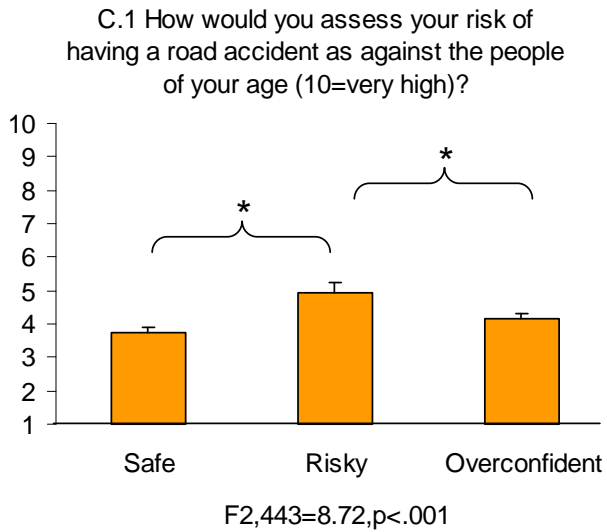


Figure 2. Average scores for each group on items concerning risk perception.

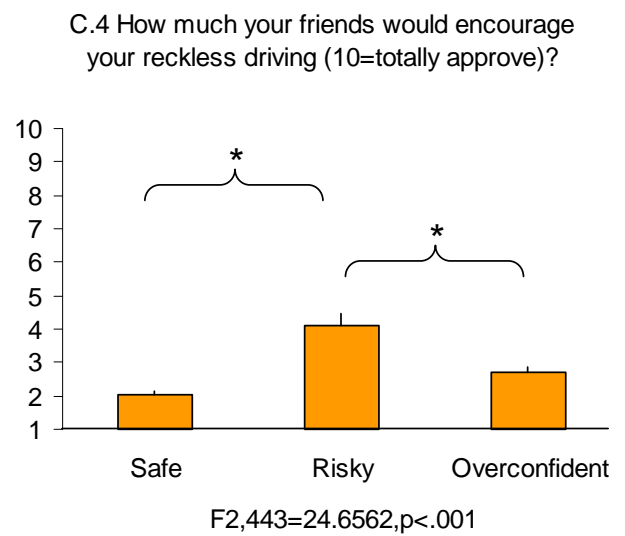
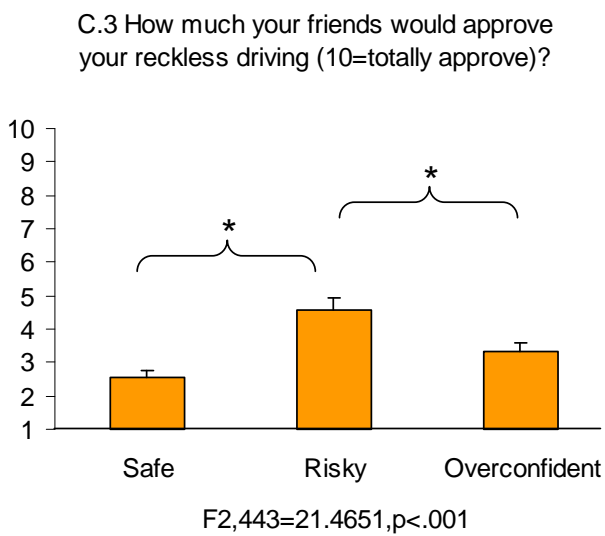


Figure 3. Average scores for each group on items concerning friends' attitude.

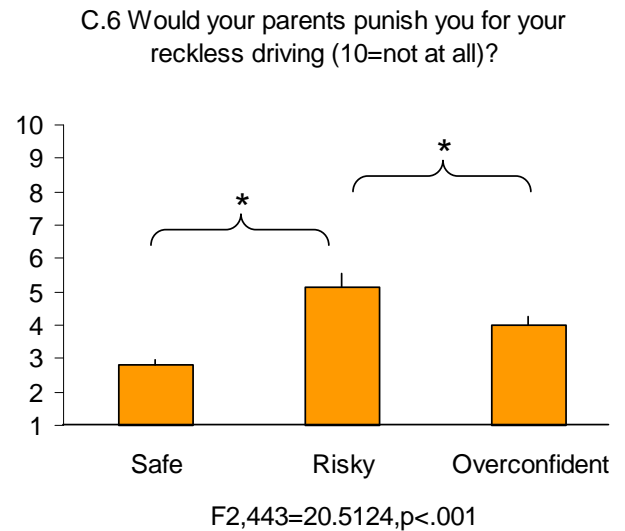
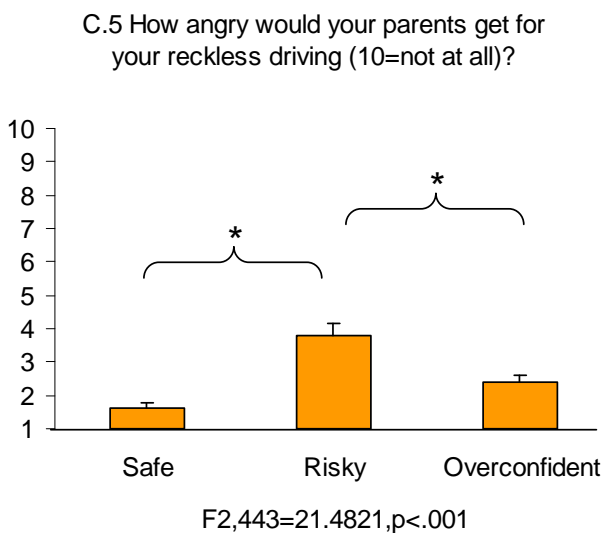


Figure 4. Average scores for each group on items concerning parents' attitude.

SCOOTER DRIVERS (QUESTIONNAIRE SECTION 2)

Sample description

A total of 346 people answered the Section 2 of the questionnaire. Males were 239 (69.1% of the total sample) and females were 107 (30.9% of the total sample). Their mean age was 17.4 years (standard deviation 1.27), ranging between 15 and 20 years. Age was no significantly different between males and females. Not all the respondents answered all the items of the questionnaire, thus each analysis was run on the largest sample available for that analysis (missing values were not estimated).

Driving habits

Tables 1 to 13 show the distribution as a function of gender of the answers to items concerning the driving habits and experiences. Most Italian scooter drivers refer not to use scooters or motorbikes very often (most of them drive a scooter 1-2 times a week, with a prevalence of male drivers compared to female drivers). Their use of scooters is characterized by being very variable in term of number of kilometres travelled, from only few to more than 100 kilometres. Interestingly, male drivers refer to drive after 11.00 pm relatively often (almost 50% of them drive after 11:00 pm more than 2 times a week), where female drivers are far less likely to drive during night hours (about 52% of them do not drive after 11:00 pm at all). Italian scooter drivers also are not normally used to go on as passengers, except after 11:00 pm, when this habit becomes more frequent. Male drivers also refer to have received a traffic fine more often than female drivers, mostly for driving without the helmet. Interestingly, scooter drivers refer not to have been involved in accidents both as drivers or passengers very often, and usually they refer to have had only material damages.

Less than half the sample (32% of the total sample) states that they have driven after having drunk alcohol (though it must be noticed that the item do not refer to being drunk, but only to driving after having drunk some alcohol). However, very few of them refer of having recognized some of the symptoms associated with driving under the effects of alcohol, especially difficulties on keeping focused on the road. This might suggest that a consistent number of young drivers are still unaware of the negative effects of driving under the effects of alcohol.

Summarizing, Italian young scooter drivers seem to be characterized by being infrequent drivers, somehow experienced of driving during night hours (especially male drivers), and not very aware of the dangers associated with driving under the effects of alcohol.

Table 1. Frequency distribution of respondents for item G1.6 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

		G1_6 How many times a week do you use a scooter?					
		Never	1-2 times	3-4 times	5-6 times	Everyday	Only in the weekend
Males		13 (27.08%)	35 (72.92%)	46 (18.47%)	41 (16.47%)	73 (29.32%)	4 (1.61%)
Females		13 (36.11%)*	23 (63.89%)*	14 (15.38%)	10 (10.99%)	18 (19.78%)	0
Total		26 (30.95%)	58 (69.05%)	60 (17.65%)	51 (15.%)	91 (26.76%)	4 (1.18%)

Table 2. Frequency distribution of respondents for item G1.7 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_7 How many kilometres do you drive in a week?					
	1-10 Km	11-30 Km	31-50 Km	51-100 Km	More than 100 Km
Males	42 (16.87%)	43 (17.27%)	47 (19.58%)	47 (19.58%)*	33 (13.75%)*
Females	23 (25.27%)	26 (28.57%)*	19 (19.79%)	8 (8.33%)	2 (2.08%)
Total	65 (19.12%)	69 (20.29%)	66 (19.64%)	55 (16.37%)	35 (10.42%)

Table 3. Frequency distribution of respondents for item G1.8 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_8 In the last three months, how many times have you driven after 11:00 pm?				
	Never	1-2 times	2-4 times	More than 4 times
Males	64 (26.67%)	49 (20.42%)	26 (11.4%)	73 (32.02%)*
Females	50 (52.08%)*	17 (17.71%)	4 (6.56%)	7 (11.48%)
Total	114 (33.93%)	66 (19.64%)	30 (10.38%)	80 (27.68%)

Table 4. Frequency distribution of respondents for item G1.9 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_9 How often in a week do you go on a scooter sitting behind?						
	Never	1-2 times	3-4 times	5-6 times	Everyday	Only in the week end
Males	64 (28.07%)	65 (28.51%)	38 (45.78%)	24 (28.92%)	17 (20.48%)	4 (4.82%)
Females	31 (50.82%)	19 (31.15%)	19 (67.86%)	5 (17.86%)	2 (7.14%)	2 (7.14%)
Total	95 (32.87%)	84 (29.07%)	57 (51.35%)	29 (26.13%)	19 (17.12%)	6 (5.41%)

Table 5. Frequency distribution of respondents for item G1.10 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_10 In the last three months how often you accepted a lift on a scooter after 11:00 pm?				
	Never	1-2 times a month	2-4 times in a month	More than 4 times in a month
Males	103 (64.78%)	56 (35.22%)	25 (47.17%)*	28 (52.83%)*
Females	56 (76.71%)*	17 (23.29%)	3 (60.%)	2 (40.%)
Total	159 (68.53%)	73 (31.47%)	28 (48.28%)	30 (51.72%)

Table 6. Frequency distribution of respondents for item G1.11 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_11 Have you ever been fined?		
	Yes	No
Males	33 (15.57%)*	179 (84.43%)
Females	3 (3.85%)	75 (96.15%)*
Total	36 (12.41%)	254 (87.59%)

Table 7. Frequency distribution of respondents for kinds of violations as a function of gender. * refers to significant differences ($p < .001$) between males and females.

	Males	Females	Total
Running a stop sign	1 (.42%)	0	1 (.29%)
Running a red light	3 (1.27%)	0	3 (.87%)
No parking	4 (1.69%)	1 (.93%)	5 (1.46%)
Passenger	10 (4.24%)	0	10 (2.92%)
Drunk driving	2 (.85%)	0	2 (.58%)
Driving without the helmet	13 (5.51%)	0	13 (3.79%)
Speeding	7 (2.97%)	0	7 (2.04%)

Table 8. Frequency distribution of respondents for item G1.21 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_21 Have you ever been involved in an accident as a driver?			
	Yes	No	No but I was close to
Males	60 (30.46%)*	137 (69.54%)	15 (29.41%)
Females	11 (14.67%)	64 (85.33%)*	3 (27.27%)
Total	71 (26.1%)	201 (73.9%)	18 (29.03%)

Table 9. Frequency distribution of respondents for item G1.23 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_23 What were the consequences?			
	Material damages	Personal injuries	Both
Males	36 (70.59%)	7 (25.93%)	20 (74.07%)
Females	8 (72.73%)	0	4 (100.%)
Total	44 (70.97%)	7 (22.58%)	24 (77.42%)

Table 10. Frequency distribution of respondents for item G1.24 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_24 Have you ever been involved in an accident as a passenger?			
	Yes	No	No but I was close to
Males	59 (28.64%)	147 (71.36%)	6 (13.33%)
Females	18 (24.66%)	55 (75.34%)	5 (31.25%)
Total	77 (27.6%)	202 (72.4%)	11 (18.03%)

Table 11. Frequency distribution of respondents for item G1.26 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_26 What were the consequences?			
	Material damages	Personal injuries	Both
Males	39 (86.67%)	12 (57.14%)	9 (42.86%)
Females	11 (68.75%)	0	7 (100.%)*
Total	50 (81.97%)	12 (42.86%)	16 (57.14%)

Table 12. Frequency distribution of respondents for item G1.27 as a function of gender. * refers to significant differences ($p < .001$) between males and females.

G1_27 Have you ever driven after drinking alcoholic drinks?		
	Yes	No
Males	83 (39.15%)*	129 (60.85%)
Females	10 (12.82%)	68 (87.18%)*
Total	93 (32.07%)	197 (67.93%)

Table 13. Frequency distribution of respondents for alcohol effects as a function of gender. * refers to significant differences ($p < .001$) between males and females.

	Males	Females	Total
You could hardly follow the road	16 (6.78%)	0	16 (4.66%)
You could hardly keep your head on straight	9 (3.81%)	1 (.93%)	10 (2.92%)
You had muscle cramps	5 (2.12%)	0	5 (1.46%)
You could hardly keep your eyes open	14 (5.93%)*	1 (.93%)	15 (4.37%)
You got stomach cramps	14 (5.93%)	2 (1.87%)	16 (4.66%)
You could not focus on the road	21 (8.9%)*	1 (.93%)	22 (6.41%)
Someone who was with you made you notice it	7 (2.97%)	1 (.93%)	8 (2.33%)

Specific dimensions of the questionnaire scales

Scale A1, Attitude toward road safety issues.

Data from the Scale A1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.86, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153) = 1973.209$, $p < .000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 49.19% of the total variance. Table A1.1 shows the eigenvalues and the variance accounted for by each factor. Table A1.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Tolerance toward violations", accounting for by the 22.84% of the common variance) refers to a negative attitude toward traffic rules. Items such as "*It is reasonable to exceed speed limits to overtake slow or inexperienced drivers*" load on this factor. The second factor (labelled "Negative attitude toward drugs and alcohol", accounting for by the 19.16% of the common variance) refers to a negative attitude toward driving under the effects of substances. Items such as "*I would never drive after drinking alcoholic drinks*" load on this factor. This factor is negatively correlated to the first and third factors (Table A1.3). The third factor (labelled "Positive attitude toward speeding", accounting for by the 13.51% of the common variance) refers to a positive attitude toward going by car with a fast driver. Items such as "*It is ok to go by car with a fast driver if it is the only way to go back home at night*" load on this factor. This factor is correlated to the first factor (Table A1.3).

Table A1.1. Eigenvalues and variance accounted for by each factor (Scale A1).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.365	29.807	29.807	4.112
2	2.326	12.920	42.727	3.450
3	1.164	6.465	49.192	2.432
4	1.038	5.768	54.960	
5	.954	5.302	60.262	
6	.901	5.007	65.270	
7	.819	4.549	69.819	
8	.762	4.234	74.053	
9	.653	3.628	77.681	
10	.633	3.517	81.198	

11	.549	3.047	84.245
12	.522	2.899	87.144
13	.487	2.703	89.848
14	.474	2.635	92.483
15	.429	2.382	94.865
16	.376	2.091	96.956
17	.362	2.010	98.966
18	.186	1.034	100.000

Table A1.2. Factor loadings (Scale A1).

	Factors		
	Tolerance to violations	Negative attitude toward drugs and alcohol	Positive Attitude Toward Speeding
A1_1	0.628		
A1_2	0.732		
A1_3			
A1_4	0.641		
A1_5	0.295		
A1_6	0.598		
A1_7	0.447		
A1_8	0.558		
A1_9	0.614		
A1_10	0.673		
A1_11	-0.333		
A1_12			0.541
A1_13			0.806
A1_14		0.400	
A1_15		0.602	
A1_16		0.753	
A1_17		0.872	
A1_18		0.884	

Table A1.3. Factor Correlation Matrix (Scale A1).

Factor	1	2	3
1	1.000	-.381	.436
2	-.381	1.000	-.368
3	.436	-.368	1.000

Scale B1, Locus of Control.

Data from the Scale B1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.71, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(435)=1855.87, p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 29.90% of the total variance. Table B1.1 shows the eigenvalues and the variance accounted for by each factor. Table B1.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Internal Locus of Control”, accounting for by the 8.14% of the common variance) refers to an internal Locus of Control, as respondents attribute responsibility of road accidents mostly to drivers. Items such as “A careful driver can prevent any accident” load on this factor.

The second factor (labelled “External Locus of Control”, accounting for by the 7.57% of the common variance) refers to an external Locus of Control, as respondents attribute responsibility of road accidents mostly to external causes, independent of drivers behaviour. Items such as “Driving without accidents is mainly a question of good luck” load on this factor.

The third factor (labelled “Attention related LOC”, accounting for by the 7.46% of the common variance) refers to an internal, attention-related Locus of Control, as respondents attribute responsibility of road accidents mostly to drivers’ failure to be careful or to pay attention to driving. Items such as “Driving without accidents depends on driver’s ability to pay attention to what happens on the road and pavement” load on this factor.

The three factors are not correlated (Table B1.3).

Table B1.1. Eigenvalues and variance accounted for by each factor (Scale B1).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	3.748	12.494	12.494	2.443
2	2.930	9.767	22.261	2.272
3	2.294	7.645	29.906	2.240
4	1.493	4.978	34.884	
5	1.384	4.612	39.496	
6	1.310	4.367	43.864	
7	1.212	4.040	47.904	
8	1.097	3.656	51.560	
9	1.079	3.595	55.155	
10	1.035	3.451	58.606	
11	.975	3.251	61.857	

12	.906	3.018	64.875
13	.855	2.851	67.726
14	.841	2.803	70.528
15	.777	2.591	73.119
16	.764	2.547	75.666
17	.744	2.480	78.146
18	.714	2.381	80.527
19	.640	2.133	82.660
20	.634	2.113	84.773
21	.584	1.948	86.720
22	.572	1.908	88.629
23	.549	1.831	90.459
24	.515	1.715	92.174
25	.480	1.600	93.774
26	.403	1.345	95.119
27	.401	1.336	96.455
28	.377	1.256	97.712
29	.366	1.220	98.932
30	.320	1.068	100.000

Table B1.2. Factor loadings (Scale B1).

	Factor		
	Internal LOC	External LOC	Attention-related Internal LOC
B1_1		0.311	
B1_2		0.465	
B1_3			0.265
B1_4		0.376	
B1_5		0.315	
B1_6	0.425		
B1_7	0.504		
B1_8	0.445		
B1_9	0.441		
B1_10	0.469		
B1_11		0.389	0.392
B1_12		0.328	
B1_13		0.324	0.314
B1_14		0.626	
B1_15		0.589	

Table B1.2. Factor loadings (Scale B1).

	Factor		
	Internal LOC	External LOC	Attention-related Internal LOC
B1_1		0.311	
B1_2		0.465	
B1_16	0.262		0.456
B1_17	0.477		
B1_18			0.437
B1_19			0.498
B1_20		0.382	
B1_21			
B1_22			0.410
B1_23			0.286
B1_24		0.397	
B1_25		0.294	
B1_26			0.395
B1_27			0.418
B1_28	0.595		-0.275
B1_29			
B1_30	0.473		

Table B1.3. Factor correlation matrix (Scale B1).

Factor	1	2	3
1	1.000	-.004	.147
2	-.004	1.000	.050
3	.147	.050	1.000

Scale D1. Rage during driving.

Data from the Scale D1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method. Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy. 0.8, and factorability of the correlation matrix. Bartlett's test of sphericity $\chi^2(91)=928.66$ $p<.000$. were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 45.95% of the total variance. Table D1.1 shows the eigenvalues and the variance accounted for by each factor. Table D1.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Obstacle-related rage", accounting for by the 18.38% of the common variance) refers to the rage reactions due to obstacles preventing drivers to drive the way they want. Items such as "You are trapped in traffic jam" load on this factor.

The second factor (labelled "Insult-related rage", reversed, accounting for by the 14.41% of the common variance) refers to the not rage reactions due insults from other drivers. Items such as "Somebody sounds the horn for your way of driving" load on this factor. This factor is moderately correlated with the factor "Obstacle-related rage" (Table D1.3)

The third factor (labelled "Violation-related rage", accounting for by the 10.23% of the common variance) refers to the rage reactions due to other drivers violating the traffic code. Items such as "Somebody reverses just in front of you without looking back" load on this factor.

Table D1.1. Eigenvalues and variance accounted for by each factor (Scale D1).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	3.781	27.005	27.005	2.573
2	1.483	10.591	37.597	2.017
3	1.169	8.348	45.945	1.432
4	1.075	7.682	53.627	
5	.921	6.581	60.208	
6	.879	6.279	66.487	
7	.796	5.685	72.171	
8	.732	5.228	77.399	
9	.699	4.995	82.394	
10	.625	4.461	86.855	
11	.591	4.224	91.079	
12	.485	3.461	94.541	

13	.392	2.797	97.338
14	.373	2.662	100.000

Table D1.2. Factor loadings (Scale D1).

	Factor		
	Obstacle-related rage	Insult-related rage (reversed)	Violation-related rage
D1_1			.358
D1_2	.444		
D1_3			.691
D1_4			
D1_5	.367		
D1_6			.320
D1_7	.589		
D1_8	.584		
D1_9		-.831	
D1_10		-.708	
D1_11	.515		
D1_12	.546		
D1_13	.368		
D1_14	.479		

Table D1.3. Factor Correlation Matrix (Scale D1.3).

Factor	1	2	3
1	1.000	-.328	.218
2	-.328	1.000	-.400
3	.218	-.400	1.000

Scale F1. Personality.

Data from the Scale F1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method. Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy. 0.73, and factorability of the correlation matrix. Bartlett’s test of sphericity $\chi^2(666)=2517.1$, $p<.000$. were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a five-factor solution that accounted for the 36.76% of the total variance. Table F1.1 shows the eigenvalues and the variance accounted for by each factor. Table F1.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Stability”, reversed, accounting for by the 6.02% of the common variance) refers to being irritable, in a bad mood. Items such as “*I am tranquil and not irritable*” (reversed) load on this factor.

The second factor (labelled “Anxiety”, accounting for by the 6.79% of the common variance) refers to Anxiety. Items such as “*I easily panic*” load on this factor.

The third factor (labelled “Sensation seeking”, accounting for by the 7.08% of the common variance) refers to the Sensation-seeking personality trait. Items such as “*I often wish exciting things*” load on this factor.

The fourth factor (labelled “Egocentrism”. Accounting for by the 4.42% of the common variance) refers to being self-centred. Items such as “*I think I’m generous with who is in trouble*” (reversed) load on this factor.

The fifth factor (labelled “*Conscientiousness*”, reversed, accounting for by the 5.74% of the common variance) refers to low responsibility, commitment, attention. Items such as “*I’m easily distracted*” load on this factor.

The five factors are not correlated (Table F1.3).

Table F1.1. Eigenvalues and variance accounted for by each factor (Scale F1).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	3.937	10.641	10.641	2.227
2	3.481	9.408	20.049	2.514
3	2.932	7.923	27.973	2.622
4	1.758	4.752	32.725	1.634
5	1.494	4.039	36.764	2.125
6	1.281	3.462	40.225	
7	1.252	3.384	43.610	
8	1.150	3.107	46.717	
9	1.136	3.071	49.787	
10	1.091	2.948	52.736	
11	1.076	2.908	55.644	
12	.988	2.669	58.313	
13	.975	2.636	60.949	

14	.966	2.612	63.561
15	.910	2.460	66.021
16	.878	2.374	68.395
17	.836	2.260	70.655
18	.805	2.176	72.831
19	.767	2.073	74.904
20	.756	2.043	76.947
21	.704	1.903	78.849
22	.690	1.864	80.714
23	.639	1.726	82.440
24	.630	1.702	84.141
25	.609	1.646	85.787
26	.583	1.575	87.362
27	.535	1.446	88.809
28	.515	1.392	90.201
29	.503	1.359	91.560
30	.471	1.274	92.834
31	.432	1.167	94.001
32	.422	1.140	95.141
33	.403	1.089	96.230
34	.383	1.036	97.266
35	.372	1.005	98.271
36	.343	.927	99.197
37	.297	.803	100.000

Table F1.2. Factor loadings (Scale F1).

	Factor				
	Stability (reversed)	Anxiety	Sensation Seeking	Egocentrism	Conscientiousness (reversed)
F_1		-0.270			0.256
F_2		0.324			
F_3				0.353	
F_4			0.524		0.274
F_5		0.527	-0.427		
F_6	-0.621		-0.323		
F_7	-0.445				
F_8				0.275	

Table F1.2. Factor loadings (Scale F1).

	Factor				
	Stability (reversed)	Anxiety	Sensation Seeking	Egocentrism	Conscientiousness (reversed)
F_1		-0.270			0.256
F_2		0.324			
F_9	-0.271				
F_10			0.390		
F_11				0.508	
F_12			0.654		
F_13		0.552			
F_14	-0.428				
F_15	-0.370	0.272			
F_16		0.349	-0.329		
F_17					
F_18		0.318		0.312	
F_19				0.444	
F_20			0.581		
F_21		0.530			-0.305
F_22	-0.503				
F_23	-0.264				
F_24			0.384		
F_25			0.375	0.278	
F_26		0.398			
F_27	-0.320	0.257			
F_28					
F_29		0.586			
F_30		0.410			
F_31					
F_32					
F_33					
F_34					
F_35					-0.306
F_36			0.380		
F_37					0.558

Table F1.3. Factor Correlation Matrix (Scale F1).

Fattore	1	2	3	4	5
1	1.000	-.029	-.134	.095	.239
2	-.029	1.000	-.033	.061	.058
3	-.134	-.033	1.000	.049	.114
4	.095	.061	.049	1.000	.218
5	.239	.058	.114	.218	1.000

Scale I1. Driving Behaviour Questionnaire.

Data from the Scale I1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method. Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy. 0.88, and factorability of the correlation matrix. Bartlett’s test of sphericity $\chi^2(253)=3781.01.04$, $p<.000$. were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 60.17% of the total variance. Table I1.1 shows the eigenvalues and the variance accounted for by each factor. Table I1.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Violations”, accounting for by the 24,38% of the common variance) refers to violations of the traffic code. Items such as “*To drive without keeping the safe distance*” load on this factor.

The second factor (labelled “Slowing”, accounting for by the 12.97% of the common variance) refers to safety behaviours while driving a scooter, slowing the speed when required by the traffic conditions. Items such as “*To slow down near a sign of danger*” load on this factor.

The third factor (labelled “Complying with the traffic code”, accounting for by the 18% of the common variance) refers to a safe driving behaviour. Items such as “*To exceed the speed limit by over 10 Km/h*” (reversed) load on this factor. This factor correlates negatively with the first factor (table I1.3).

The fourth factor (labelled “Alcohol/drugs”, accounting for by the 13.08% of the common variance) refers to alcohol and drugs related behaviours. Items such as “*You drive after having had a glass of beer/wine*” load on this factor. This factor is correlated with the first factor.

Table I1.1. Eigenvalues and variance accounted for by each factor (Scale I1).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance		Total
1	7.202	31.315	31.315	5.607
2	3.491	15.179	46.494	2.983
3	1.920	8.350	54.843	4.141
4	1.224	5.323	60.166	3.009
5	.966	4.201	64.368	
6	.894	3.887	68.254	
7	.743	3.231	71.485	
8	.694	3.017	74.502	
9	.615	2.673	77.175	
10	.588	2.554	79.729	
11	.540	2.347	82.077	
12	.530	2.305	84.382	
13	.496	2.155	86.537	
14	.429	1.864	88.401	

15	.412	1.789	90.190
16	.370	1.609	91.800
17	.350	1.524	93.323
18	.318	1.382	94.705
19	.292	1.271	95.976
20	.270	1.173	97.149
21	.257	1.116	98.265
22	.222	.967	99.232
23	.177	.768	100.000

Table I1.2. Factor loadings (Scale I1).

	Factor			
	Violations	Slowing	Complying with the traffic code	Alcohol/Drugs
I1_1			-0.731	
I1_2			-0.717	
I1_3	0.274		-0.630	
I1_4	0.331		-0.613	
I1_5			-0.649	
I1_6	0.652			
I1_7	0.581			
I1_8	0.727			
I1_9	0.680			
I1_10	0.504			
I1_11	0.528			
I1_12	0.695			
I1_13		0.478		
I1_14		0.633		
I1_15		0.690		
I1_16		0.668		
I1_17			-0.336	0.683
I1_18				0.764
I1_19	0.555			0.384
I1_20		0.681		
I1_21		0.681		
I1_22		0.577	0.340	
I1_23	0.469			0.328

Table I1.3. Factor Correlation Matrix (Scale I1).

Factor	1	2	3	4
1	1.000	-.091	-.390	.418
2	-.091	1.000	-.045	-.113
3	-.390	-.045	1.000	-.154
4	.418	-.113	-.154	1.000

Scale J1. Imagined driving behaviour.

Data from the Scale J1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method. Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy. 0.86 and factorability of the correlation matrix. Bartlett’s test of sphericity $\chi^2(231)=3162.70$. $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a five-factor solution that accounted for the 57.89% of the total variance. Table J1.1 shows the eigenvalues and the variance accounted for by each factor. Table J1.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Risky driving”, accounting for by the 16.03% of the common variance) refers to risky driving behaviour. Items such as “You drive without keeping a safe distance” load on this factor.

The second factor (labelled “Slowing”, accounting for by the 15% of the common variance) refers to the slowing the speed when required by the traffic conditions. Items such as “You slow down when approaching a danger sign” load on this factor.

The third factor (labelled “No Speed”, accounting for by the 18.53% of the common variance) refers to not speeding. Items such as “You exceed the speed limits by 10 Km/h” (inverse) load on this factor.

The fourth factor (labelled “No Alcohol/Drugs”, accounting for by the 19.0% of the common variance) refers to not alcohol and drugs related behaviours. Items such as “You drive after having had a glass of beer/wine” (inverse) load on this factor. This factor has a negative correlation with the first factor “Risky driving”, and the third factor “No Speed” (Table J1.3).

Table J1.1. Eigenvalues and variance accounted for by each factor (Scale J).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	6.332	28.780	28.780	3.526
2	3.237	14.716	43.496	3.302
3	1.848	8.401	51.897	4.077
4	1.319	5.996	57.893	3.884
5	1.040	4.726	62.619	
6	.929	4.223	66.843	
7	.788	3.583	70.425	
8	.726	3.301	73.726	
9	.685	3.115	76.841	
10	.630	2.865	79.706	
11	.555	2.525	82.231	
12	.505	2.294	84.526	

13	.470	2.136	86.661
14	.446	2.029	88.691
15	.422	1.919	90.610
16	.402	1.826	92.435
17	.338	1.537	93.972
18	.316	1.436	95.409
19	.290	1.318	96.727
20	.257	1.168	97.895
21	.243	1.105	98.999
22	.220	1.001	100.000

Table J.2. Factor loadings (Scale J).

	Factor			
	Risky driving	Slowing	No Speed	No Alcohol/ Drugs
J_1			-0.767	
J_2			-0.785	
J_3			-0.692	
J_4			-0.656	
J_5			-0.672	
J_6	0.541		-0.281	
J_7	0.748			
J_8	0.630			
J_9	0.564			
J_10				-0.365
J_11				-0.348
J_12				-0.357
J_13		0.481		
J_14		0.675		
J_15		0.742		
J_16		0.704		
J_17				-0.810
J_18				-0.819
J_19		0.676		
J_20		0.641		
J_21		0.534		
J_22				-0.568

Table J1.3. Factor Correlation Matrix (Scale J1).

Factor	1	2	3	4
1	1.000	-.183	-.304	-.481
2	-.183	1.000	.102	.180
3	-.304	.102	1.000	.387
4	-.481	.180	.387	1.000

Scale K1. Driving under the effect of alcohol.

Data from the Scale K1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method. Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy. 0.72, and factorability of the correlation matrix. Bartlett’s test of sphericity $\chi^2(36)=1003.19$ $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a two-factor solution that accounted for the 53.03% of the total variance. Table K1.1 shows the eigenvalues and the variance accounted for by each factor. Table K1.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Permissive attitude toward alcohol”. accounting for by the 31,37% of the common variance) refers to driving under the effect of alcohol. Items such as “You drove less than two hours after having drunk alcohol” load on this factor.

The second factor (labelled “Preventing behaviours”. accounting for by the 18.37% of the common variance) refers to the behaviours aimed at preventing someone from driving under the effects of alcohol. Items such as “You were the designated driver” load on this factor.

The two factors are correlated (Table K1.3).

Table K.1. Eigenvalues and variance accounted for by each factor (Scale K1).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Totale
1	3.432	38.129	38.129	2.823
2	1.341	14.903	53.033	1.653
3	1.218	13.538	66.570	
4	.848	9.424	75.994	
5	.726	8.067	84.061	
6	.470	5.222	89.283	
7	.458	5.090	94.374	
8	.293	3.253	97.627	
9	.214	2.373	100.000	

Table K1.2. Factor loadings (Scale K1).

	Factor	
	Permissive attitude	Preventing behaviours
K_1	.621	
K_2	.898	
K_3		
K_4	.426	
K_5	.755	
K_6		.851
K_7		.600
K_8	.555	
K_9	.588	

Table K1.3. Factor Correlation Matrix (Scale K1).

Factor	1	2
1	1.000	.420
2	.420	1.000

Scale L1. Effects of alcohol.

Data from the Scale L1 of the questionnaire were submitted to exploratory factor analysis (Principal Axis method. Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy. 0.85, and factorability of the correlation matrix. Bartlett’s test of sphericity $\chi^2(190)=1771.54, p<.000.$ were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 43.60% of the total variance. Table L1.1 shows the eigenvalues and the variance accounted for by each factor. Table L1.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Positive effects”, accounting for by the 20.91% of the common variance) refers to the supposed positive effects of alcohol assumption. Items such as “Alcohol increases concentration capacity” load on this factor.

The second factor (labelled “Underestimation of negative effects”, accounting for by the 8.62% of the common variance) refers to the underestimation of the negative effects of alcohol assumption. Items such as “Alcohol has little effects on you” load on this factor. This factor correlates positively with the “Positive effects” factor (Table L1.3).

The third factor (labelled “Negative effects”, accounting for by the 15.72% of the common variance) refers to the negative effects of alcohol assumption. Items such as “Alcohol decreases the level of attention” load on this factor. This factor has negative correlates with the “Positive effects” factor (Table L1.3).

Table L1.1. Eigenvalues and variance accounted for by each factor (Scale L1).

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.326	26.630	26.630	4.183
2	2.070	10.350	36.980	1.725
3	1.324	6.619	43.599	3.145
4	1.163	5.814	49.413	
5	.985	4.923	54.336	
6	.966	4.831	59.167	
7	.933	4.666	63.833	
8	.826	4.129	67.963	
9	.768	3.841	71.803	
10	.713	3.565	75.368	
11	.685	3.423	78.791	
12	.624	3.119	81.910	
13	.605	3.023	84.933	

14	.550	2.748	87.681
15	.529	2.645	90.326
16	.519	2.596	92.922
17	.427	2.135	95.057
18	.377	1.886	96.943
19	.352	1.758	98.701
20	.260	1.299	100.000

Table L1.2. Factor loadings (Scale L1).

	Factor		
	Positive effects	Underestimation of negative effects	Negative effects
L_1	0.700		
L_2			0.780
L_3			0.758
L_4	0.579		
L_5	0.474		
L_6	0.635		
L_7	-0.271		0.324
L_8	0.633		
L_9			
L_10	0.599		
L_11	-0.376		0.307
L_12	0.653		
L_13			0.420
L_14			0.482
L_15			0.495
L_16		0.369	
L_17		0.498	
L_18		0.633	
L_19		0.516	
L_20	0.700		

Table L1.3. Factor Correlation Matrix (Scale L1).

Factor	1	2	3
1	1.000	.354	-.457
2	.354	1.000	.047
3	-.457	.047	1.000

Cluster analysis

Factor scores on the identified subscales for scales A, B, D, F, I, K, and L were computed through regression analysis, and then submitted to cluster analysis in order to identify groups of respondents. Also the scores on the scale H (Moral disengagement) were included into the analysis. A hierarchical method of cluster analysis was used to identify the number of clusters, then a k-means method was used to identify the groups of respondents.

Results showed three separate groups of respondents. A multivariate analysis of variance yielded a significant difference among the three groups (Wilks' Lambda=0.09, $F_{48,520}=24.83$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,283}=142.80$, $p<.001$) and a significant interaction between group and subscale ($F_{46,6509}= 39.40$, $p<.001$), meaning that each group of respondents shows a specific profile.

4. **RISKY DRIVERS.** One group can be identified as composed of risky drivers. They have a permissive attitude toward driving under the effect of alcohol and recreational drugs, and are not that much aware of the negative effects of alcohol upon driving. They also refer not to have a correct behaviour during driving. They are also quite tolerant toward violations of the traffic code and speeding and, more interestingly, they see reasons why the traffic code should be violated, as such violations are useful to keep traffic flowing smoothly. Furthermore, risky drivers have high scores on driving related rage, especially due to obstacles, and high scores on moral disengagement.
5. **SPEEDING DRIVERS.** People in this group are characterized by having a positive attitude toward speeding. Interestingly, compared to people in the other two groups they are characterized by an external Locus of Control rather than internal, meaning that they do not consider accidents as essentially due to drivers' errors and mistakes. However, they are tolerant toward violations of the traffic rules, but they show higher levels of obstacle-related rage. Interestingly enough, similarly to the risky drivers, speeding drivers show high scores on moral disengagement. However, differently from the risky drivers, speeding drivers are not tolerant toward drunk driving as they are aware of alcohol negative effects upon driving.
6. **SAFE DRIVERS.** Safe drivers are instead characterized by being not tolerant toward driving under the effects of alcohol and drugs, toward violations of traffic rules and speeding. Safe drivers have a rather high score on external Locus of Control, and show intermediate levels of anxiety. They are also aware of the alcohol negative effects upon driving, and do not feel rage during driving. People in the safe drivers group show low scores on moral disengagement.

Interestingly, the three groups do not differ in terms of age or gender, though a (not significant) prevalence of males can be observed among the risky drivers.

The average score per subscale (and standard error) for each group is shown in Table 1. Tables 2, 3, and 4 report the results of the post-hoc comparisons among the three groups. Table 5 shows the respondents' mean age as a function of gender and group. Figure 1 shows the profiles of the three groups of drivers on selected subscales. The three groups of drivers are not different in terms of perceived probability of being involved in an accidents, though safe drivers are more worried about that than the other two groups (Figure 2). Also, respondents in the safe drivers group consider their friends as less supportive and even encouraging their reckless behaviour than respondents in the other two groups (Figure 3). Similarly, the same respondents consider that their parents would be more angry for their reckless driving behaviour (Figure 4).

Table 1. Average scores and standard error for each group on the subscales of the questionnaire

	SPEEDING drivers			SAFE drivers			RISKY drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Tolerance to violations	0.19	0.07	111	-0.66	0.08	104	0.67	0.09	71
Negative attitude toward alcohol/drugs	0.32	0.07	111	0.43	0.07	104	-0.98	0.08	71
Positive attitude toward speeding	0.06	0.07	111	-0.48	0.08	104	0.58	0.09	71
Internal Locus of Control	-0.04	0.08	111	-0.14	0.09	104	0.26	0.10	71
External Locus of Control	0.08	0.08	111	-0.40	0.08	104	0.35	0.10	71
Attention related Locus of Control	0.17	0.08	111	0.13	0.08	104	-0.44	0.10	71
Obstacle-related rage	0.27	0.08	111	-0.36	0.08	104	0.14	0.10	71
Insult-related rage (rev)	-0.22	0.08	111	0.09	0.08	104	0.22	0.10	71
Violation-related rage	0.15	0.07	111	0.17	0.07	104	-0.43	0.09	71
Moral disengagement	0.19	0.07	111	-0.67	0.07	104	0.65	0.08	71
Stability (rev)	0.01	0.08	111	-0.22	0.08	104	0.46	0.10	71
Anxiety	-0.06	0.08	111	0.19	0.09	104	-0.14	0.11	71
Sensation Seeking	0.26	0.08	111	-0.45	0.08	104	0.09	0.10	71
Egocentrism	0.07	0.07	111	-0.40	0.07	104	0.56	0.08	71
Conscientiousness (rev)	0.08	0.07	111	-0.45	0.07	104	0.58	0.09	71
Violations	-0.04	0.06	111	-0.72	0.06	104	1.10	0.07	71
Slowing	-0.03	0.08	111	0.26	0.09	104	-0.32	0.10	71
Complying with traffic code	-0.46	0.07	111	0.73	0.07	104	-0.34	0.09	71
Driving under the effects of alcohol/drugs	-0.26	0.07	111	-0.42	0.07	104	0.93	0.09	71
Permissive attitude	-0.24	0.06	111	-0.63	0.06	104	1.17	0.07	71
Prevention behaviors	-0.08	0.08	111	-0.32	0.08	104	0.53	0.10	71
Alcohol positive effects	-0.15	0.06	111	-0.60	0.07	104	1.01	0.08	71
Underestimation of alcohol negative effects	0.14	0.07	111	-0.50	0.07	104	0.48	0.09	71
Alcohol negative effects	0.20	0.07	111	0.37	0.07	104	-0.89	0.09	71

Table 2. Comparison between Speeding and Safe drivers on each subscale.

	SPEEDING drivers	SAFE drivers	Significance
	N=111	N=104	
Tolerance to violations	0.19	-0.66	p<.001
Negative attitude toward alcohol/drugs	0.32	0.43	ns
Positive attitude toward speeding	0.06	-0.48	p<.001
Internal Locus of Control	-0.04	-0.14	ns
External Locus of Control	0.08	-0.40	p<.001

Attention related Locus of Control	0.17	0.13	ns
Obstacle-related rage	0.27	-0.36	p<.001
Insult-related rage (rev)	-0.22	0.09	ns
Violation-related rage	0.15	0.17	ns
Moral disengagement	0.19	-0.67	p<.001
Stability (rev)	0.01	-0.22	ns
Anxiety	-0.06	0.19	ns
Sensation Seeking	0.26	-0.45	p<.001
Egocentrism	0.07	-0.40	p<.001
Conscientiousness (rev)	0.08	-0.45	p<.001
Violations	-0.04	-0.72	p<.001
Slowing	-0.03	0.26	ns
Complying with traffic code	-0.46	0.73	p<.001
Driving under the effects of alcohol/drugs	-0.26	-0.42	ns
Permissive attitude	-0.24	-0.63	p<.001
Prevention behaviors	-0.08	-0.32	ns
Alcohol positive effects	-0.15	-0.60	p<.001
Underestimation of alcohol negative effects	0.14	-0.50	p<.001
Alcohol negative effects	0.20	0.37	ns

Table 3. Comparison between Speeding and Risky drivers on each subscale.

	SPEEDING drivers N=111	RISKY drivers N=71	Significance
Tolerance to violations	0.19	0.67	p<.001
Negative attitude toward alcohol/drugs	0.32	-0.98	p<.001
Positive attitude toward speeding	0.06	0.58	p<.001
Internal Locus of Control	-0.04	0.26	ns
External Locus of Control	0.08	0.35	ns
Attention related Locus of Control	0.17	-0.44	p<.001
Obstacle-related rage	0.27	0.14	ns
Insult-related rage (rev)	-0.22	0.22	p<.001
Violation-related rage	0.15	-0.43	p<.001
Moral disengagement	0.19	0.65	p<.001
Stability (rev)	0.01	0.46	p<.001
Anxiety	-0.06	-0.14	ns
Sensation Seeking	0.26	0.09	ns
Egocentrism	0.07	0.56	p<.001
Conscientiousness (rev)	0.08	0.58	p<.001
Violations	-0.04	1.10	p<.001
Slowing	-0.03	-0.32	ns
Complying with traffic code	-0.46	-0.34	ns
Driving under the effects of alcohol/drugs	-0.26	0.93	p<.001
Permissive attitude	-0.24	1.17	p<.001
Prevention behaviors	-0.08	0.53	p<.001

Alcohol positive effects	-0.15	1.01	p<.001
Underestimation of alcohol negative effects	0.14	0.48	ns
Alcohol negative effects	0.20	-0.89	p<.001

Table 4. Comparison between Risky and Safe drivers on each subscale.

	SAFE drivers	RISKY drivers	Significance
	N=104	N=71	
Tolerance to violations	-0.66	0.67	p<.001
Negative attitude toward alcohol/drugs	0.43	-0.98	p<.001
Positive attitude toward speeding	-0.48	0.58	p<.001
Internal Locus of Control	-0.14	0.26	ns
External Locus of Control	-0.40	0.35	p<.001
Attention related Locus of Control	0.13	-0.44	p<.001
Obstacle-related rage	-0.36	0.14	p<.001
Insult-related rage (rev)	0.09	0.22	ns
Violation-related rage	0.17	-0.43	p<.001
Moral disengagement	-0.67	0.65	p<.001
Stability (rev)	-0.22	0.46	p<.001
Anxiety	0.19	-0.14	ns
Sensation Seeking	-0.45	0.09	p<.001
Egocentrism	-0.40	0.56	p<.001
Conscientiousness (rev)	-0.45	0.58	p<.001
Violations	-0.72	1.10	p<.001
Slowing	0.26	-0.32	p<.001
Complying with traffic code	0.73	-0.34	p<.001
Driving under the effects of alcohol/drugs	-0.42	0.93	p<.001
Permissive attitude	-0.63	1.17	p<.001
Prevention behaviors	-0.32	0.53	p<.001
Alcohol positive effects	-0.60	1.01	p<.001
Underestimation of alcohol negative effects	-0.50	0.48	p<.001
Alcohol negative effects	0.37	-0.89	p<.001

Table 5. Mean age (years) and standard errors as a function of gender and group.

		Mean age	Standard error	N
Males	Speeding drivers	17.32	0.13	91
	Safe drivers	17.30	0.18	46
	Risky drivers	16.86	0.16	58
Females	Speeding drivers	17.65	0.27	20
	Safe drivers	17.79	0.16	58
	Risky drivers	18.31	0.34	13

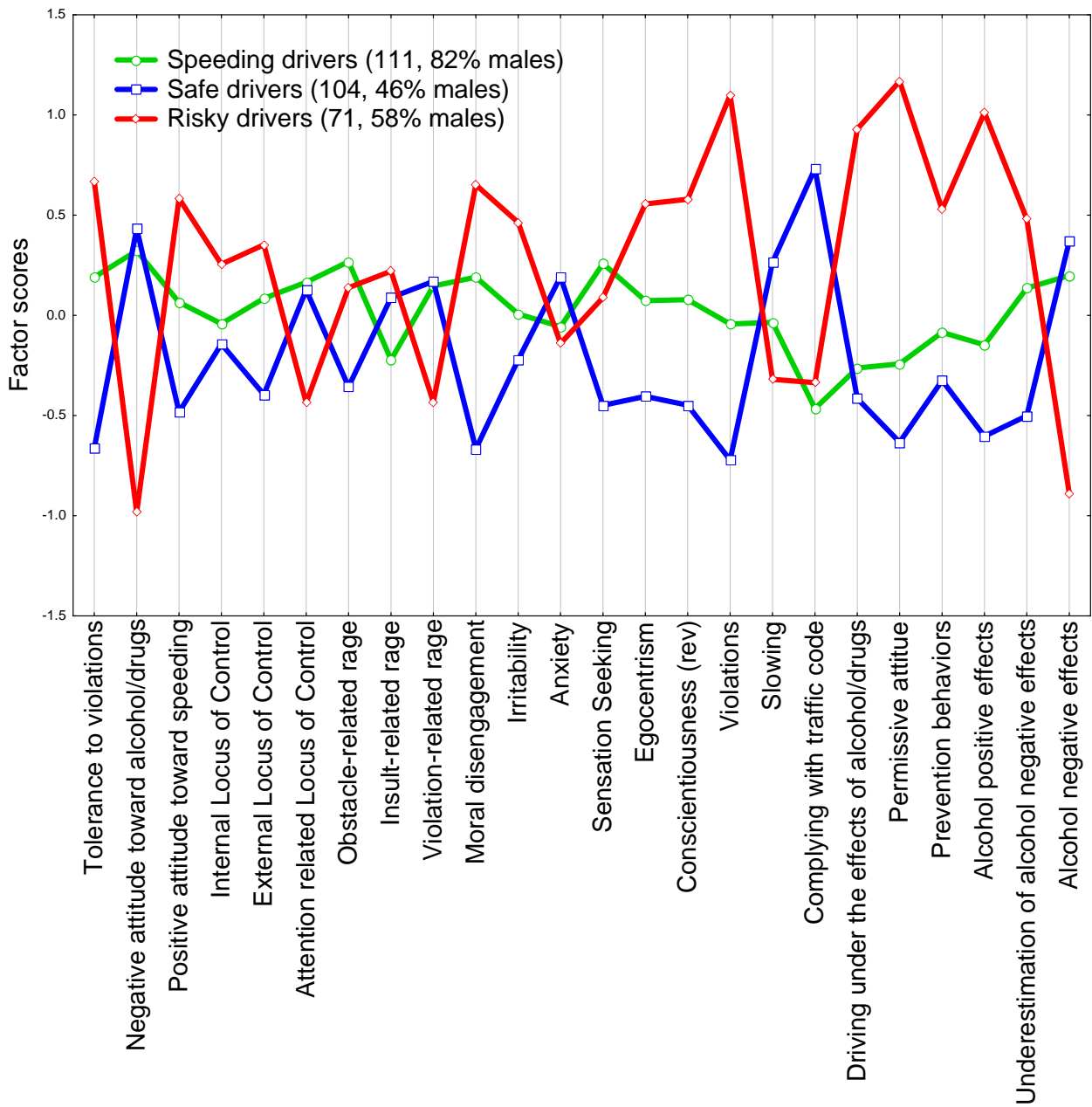


Figure 1. Average scores for each group on the subscales of the questionnaire.

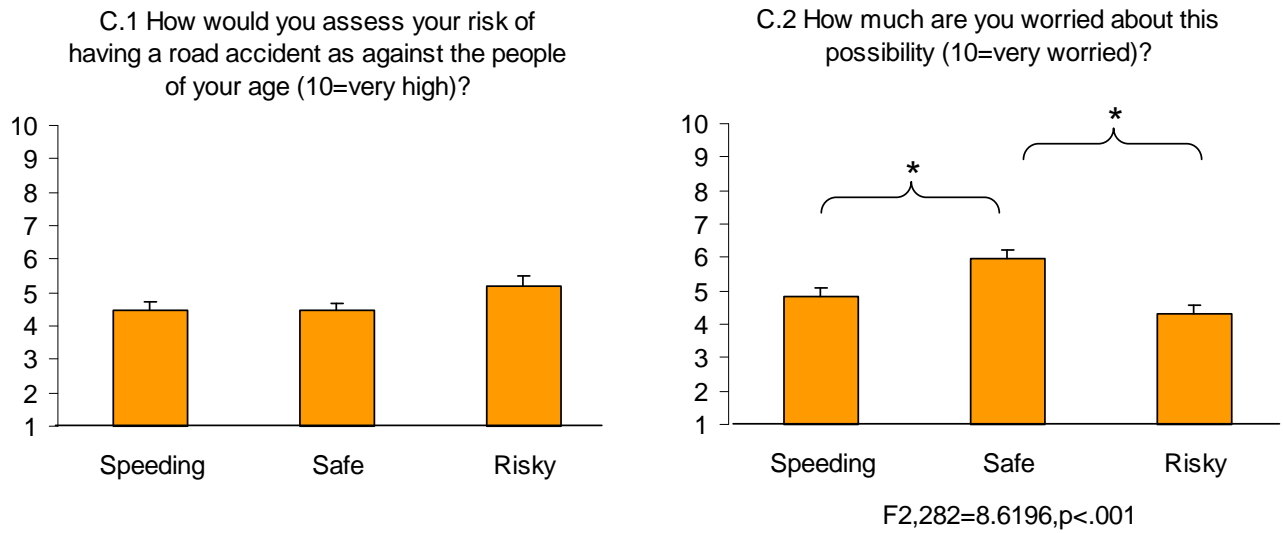


Figure 2. Average scores for each group on items concerning risk perception.

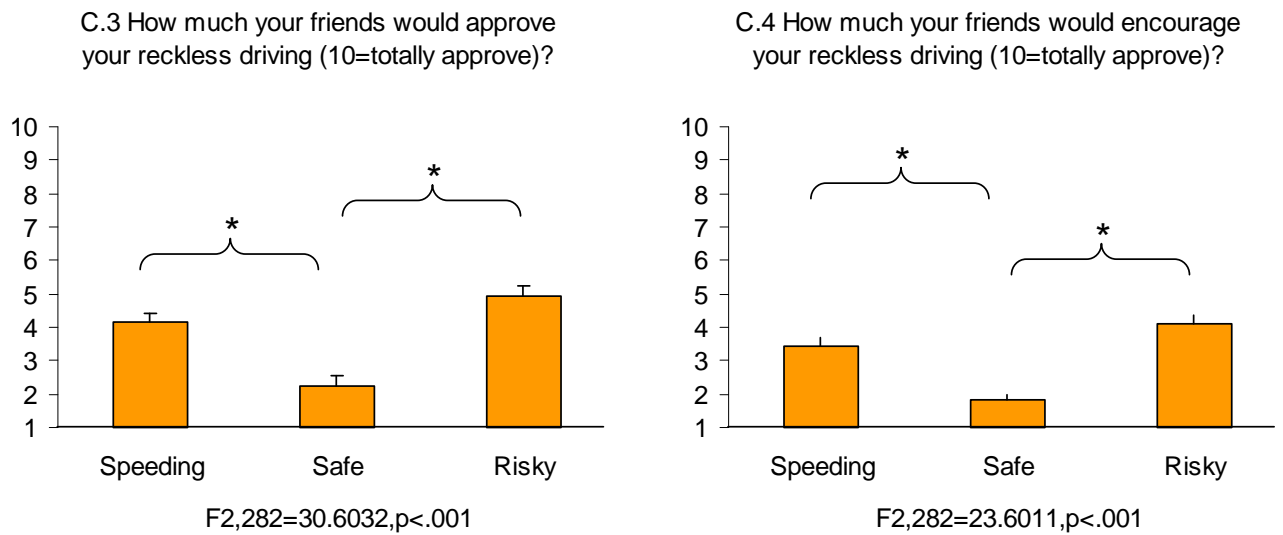


Figure 3. Average scores for each group on items concerning friends' attitude.

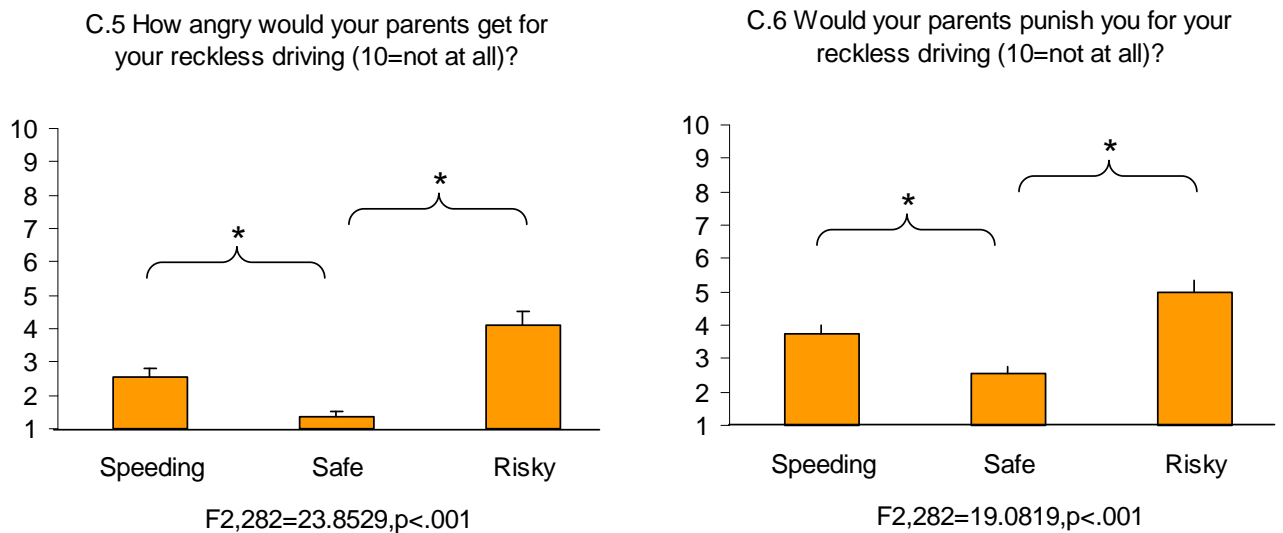


Figure 4. Average scores for each group on items concerning parents' attitude.

NON DRIVERS (QUESTIONNAIRE SECTION 3)

Sample description

A total of 352 people answered the Section 3 of the questionnaire. Males were 147 (41.76% of the total sample) and females were 205 (58.24% of the total sample). Their mean age was 17.2 years (standard deviation 1.55), ranging between 14 and 22 years. Age was no significantly different between males and females. Not all the respondents answered all the items of the questionnaire, thus each analysis was run on the largest sample available for that analysis (missing values were not estimated).

Specific dimensions of the questionnaire scales

Scale M, Attitude toward road safety issues.

Data from the Scale M of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.82, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153) = 1707.460, p < .000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a four-factor solution that accounted for the 45.2% of the total variance. Table M.1 shows the eigenvalues and the variance accounted for by each factor. Table M.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Tolerance toward violations", accounting for by the 16.26% of the common variance) refers to a negative attitude toward traffic rules. Items such as "*It is reasonable to exceed speed limits to overtake slow or inexperienced drivers*" load on this factor.

The second factor (labelled "Negative attitude toward drugs and alcohol", accounting for by the 18,72% of the common variance) refers to a negative attitude toward driving under the effects of substances. Items such as "*I would never drive under the influence of narcotic drugs*" load on this factor. This factor is negatively correlated to the first factor (Table M.3).

The third factor (labelled "Positive attitude toward speeding", accounting for by the 7.7% of the common variance) refers to a negative attitude toward going by car with a fast driver. Items such as "It is ok to go by car with a fast driver if it is the only way to go back home at night" load on this factor.

Table M.1. Eigenvalues and variance accounted for by each factor (Scale M)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total
1	4.418	24.546	24.546	2.926
2	2.442	13.567	38.114	3.370
3	1.275	7.084	45.197	1.386
4	1.092	6.068	51.266	
5	1.068	5.932	57.197	
6	.943	5.241	62.438	
7	.876	4.865	67.303	
8	.825	4.581	71.884	
9	.731	4.063	75.947	
10	.712	3.956	79.903	
11	.642	3.566	83.469	
12	.633	3.517	86.986	
13	.536	2.978	89.964	
14	.481	2.673	92.637	
15	.477	2.650	95.286	
16	.379	2.105	97.391	
17	.284	1.580	98.971	
18	.185	1.029	100.000	

Table M.2. Factor loadings (Scale M).

	Factors		
	Tolerance to violations to traffic rules	Negative attitude toward drugs and alcohol	Positive Attitude Toward Speeding
M_1	0.462		
M_2	0.521		
M_3			
M_4	0.500		
M_5	0.254		
M_6	0.475		
M_7	0.511		

M_8	0.452		
M_9	0.697		
M_10	0.572		
M_11			
M_12			0.636
M_13			0.580
M_14		0.521	
M_15		0.668	
M_16		0.833	
M_17		0.884	
M_18		0.885	

Table M.3. Factor Correlation Matrix (Scale M).

Fattore	1	2	3
1	1.000	-.320	.286
2	-.320	1.000	-.198
3	.286	-.198	1.000

Scale N, Locus of Control.

Data from the Scale N of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.75, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(435)=2135.65, p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 31.95% of the total variance. Table N.1 shows the eigenvalues and the variance accounted for by each factor. Table N.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Attention related LOC”, accounting for by the 8.41% of the common variance) refers to an internal, attention-related Locus of Control, as respondents attribute responsibility of road accidents mostly to drivers’ failure to be careful or to pay attention to driving. Items such as “Driving without accidents depends on driver’s ability to pay attention to what happens on the road and pavement” load on this factor

The second factor (labelled “External Locus of Control”, accounting for by the 7.57% of the common variance) refers to an external Locus of Control, as respondents attribute responsibility of road accidents mostly to external causes, independent of drivers behaviour. Items such as “*It is difficult to prevent accidents involving children since they are unpredictable when in the street*” load on this factor.

The third factor (labelled “Internal Locus of Control”, accounting for by the 7.47% of the common variance) refers to an internal Locus of Control, as respondents attribute responsibility of road accidents mostly to drivers. Items such as “*It is difficult to prevent accidents when you drive in bad conditions, such as darkness, rain, narrow roads, bends, etc.*” (reversed) load on this factor.

The three factors are not correlated (Table N.3).

Table N.1. Eigenvalues and variance accounted for by each factor (Scale N)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	3.748	12.494	12.494	2.443
2	2.930	9.767	22.261	2.272
3	2.294	7.645	29.906	2.240
4	1.493	4.978	34.884	
5	1.384	4.612	39.496	
6	1.310	4.367	43.864	
7	1.212	4.040	47.904	
8	1.097	3.656	51.560	
9	1.079	3.595	55.155	
10	1.035	3.451	58.606	
11	.975	3.251	61.857	

12	.906	3.018	64.875
13	.855	2.851	67.726
14	.841	2.803	70.528
15	.777	2.591	73.119
16	.764	2.547	75.666
17	.744	2.480	78.146
18	.714	2.381	80.527
19	.640	2.133	82.660
20	.634	2.113	84.773
21	.584	1.948	86.720
22	.572	1.908	88.629
23	.549	1.831	90.459
24	.515	1.715	92.174
25	.480	1.600	93.774
26	.403	1.345	95.119
27	.401	1.336	96.455
28	.377	1.256	97.712
29	.366	1.220	98.932
30	.320	1.068	100.000

Table N.2. Factor loadings (Scale N).

	Factor		
	Attention-related LOC	External LOC	Internal LOC
N_1		0.308	
N_2		0.350	
N_3			-0.363
N_4		0.332	
N_5		0.528	
N_6	0.449		
N_7	0.636		
N_8	0.621		
N_9	0.539		
N_10	0.473		
N_11		0.358	-0.410
N_12		0.306	-0.354
N_13		0.371	-0.383
N_14		0.570	
N_15		0.586	
N_16	0.472		-0.288
N_17	0.507		
N_18	0.398		-0.293
N_19	0.337		-0.357

Table N.2. Factor loadings (Scale N).

	Factor		
	Attention-related LOC	External LOC	Internal LOC
N_1		0.308	
N_2		0.350	
N_20		0.446	
N_21	0.332		
N_22			-0.435
N_23			-0.362
N_24		0.315	
N_25			-0.264
N_26			-0.334
N_27	0.256		-0.419
N_28	0.453		0.258
N_29	0.316		
N_30	0.459	0.305	0.362

Table N.3. Factor correlation matrix (Scale N)

Factor	1	2	3
1	1.000	.014	-.137
2	.014	1.000	-.121
3	-.137	-.121	1.000

Scale P, Rage.

Data from the Scale P of the questionnaire were submitted to exploratory factor analysis (Principal Axis method. Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy. 0.83, and factorability of the correlation matrix. Bartlett’s test of sphericity $\chi^2(91)=1244.82$ $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 57.02% of the total variance. Table P.1 shows the eigenvalues and the variance accounted for by each factor. Table P.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Insult-related rage, accounting for by the 21.82% of the common variance) refers the rage reactions due insults from other drivers. Items such as “*Somebody makes an obscene gesture for your way of driving*” load on this factor.

The second facto (labelled “Fine-related rage”, accounting for by the 13.76% of the common variance) refers to the rage reactions due to being in a condition of being fined. Items such as “*You passed by a speed camera*” load on this factor.

The third factor (labelled “Violation-related rage”, accounting for by the 14.86% of the common variance) refers to the rage reactions due to other drivers violating the traffic code. Items such as “*Somebody does not stop at a red traffic light or a stop sign.* This factor is correlated with the first factor (Table P.3).

The fourth factor (labelled “Obstacle-related rage”, reversed, accounting for by the 19.66% of the common variance) refers to the rage reactions due to obstacles preventing drivers to drive the way they want. Items such as “*You are driving behind a huge lorry blocking your view*” (reversed) load on this factor.

The four factors are however correlated (Table P.3).

Table P.1. Eigenvalues and variance accounted for by each factor (Scale D)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance		Total
1	4.438	31.701	31.701	3.056
2	1.335	9.537	41.238	1.927
3	1.189	8.491	49.728	2.080
4	1.020	7.287	57.015	2.752
5	.949	6.781	63.797	
6	.900	6.427	70.224	
7	.726	5.186	75.410	
8	.681	4.865	80.275	
9	.599	4.280	84.555	
10	.513	3.662	88.216	
11	.470	3.355	91.571	
12	.458	3.271	94.842	
13	.426	3.046	97.887	
14	.296	2.113	100.000	

Table P.2. Factor loadings (Scale P).

	Factor			
	Insult-related Rage	Fine-related rage	Violation-related rage	Obstacle-related rage (reversed)
P_1			0.370	
P_2				
P_3			0.823	
P_4			0.354	
P_5		0.630		
P_6		0.306	0.368	
P_7				-0.393
P_8	0.308			-0.336
P_9	0.834			
P_10	0.835			
P_11	0.371			
P_12		0.694		
P_13				-0.623
P_14				-0.709

Table P.3. Factor Correlation Matrix (Scale P).

Factor	1	2	3	4
1	1,000	,383	,444	-,557
2	,383	1,000	,257	-,377
3	,444	,257	1,000	-,369
4	-,557	-,377	-,369	1,000

Scale R, Personality.

Data from the Scale R of the questionnaire were submitted to exploratory factor analysis (Principal Axis method. Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy. 0.75. and factorability of the correlation matrix. Bartlett’s test of sphericity $\chi^2(666)=2458.27, p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a five-factor solution that accounted for the 40.63% of the total variance. Table R shows the eigenvalues and the variance accounted for by each factor. Table R.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Altruism”, accounting for by the 5.06% of the common variance) refers to being kind and attentive to other people. Items such as “*I try to be kind with all the persons I meet*” load on this factor.

The second factor (labelled “Sensation seeking”, accounting for by the 7.1% of the common variance) refers to the Sensation-seeking personality trait. Items such as “*I often wish exciting things*” load on this factor.

The third factor (labelled “Anxiety”, accounting for by the 6.1% of the common variance) refers to Anxiety. Items such as “*I easily panic*” load on this factor.

The fourth factor (labelled “Egocentrism”, accounting for by the 6.57% of the common variance) refers Egoism. Items such as “*I think I’m generous with who is in trouble*” (reversed) load on this factor.

The fifth factor (labelled “Stability”, accounting for by the 4.62% of the common variance) refers to the tendency to be secure, not nervous. Items such as “*I often feel tense and nervous*”(reversed) load on this factor.

The sixth factor (labelled “Conscientiousness”, accounting for by the 4.02% of the common variance) refers to responsibility, commitment, attention. Items such as “*I’m easily distracted*” load on this factor.

The six factors are not correlated (Table R.3).

Table R.1. Eigenvalues and variance accounted for by each factor
(Scale R)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.067	10.991	10.991	1.875
2	3.177	8.587	19.578	2.627
3	2.989	8.079	27.657	2.258
4	1.896	5.125	32.781	2.432
5	1.464	3.958	36.739	1.712
6	1.440	3.891	40.630	1.489
7	1.230	3.326	43.956	

8	1.183	3.196	47.152
9	1.073	2.901	50.053
10	1.055	2.851	52.904
11	1.037	2.802	55.705
12	1.008	2.725	58.430
13	.967	2.612	61.042
14	.952	2.573	63.616
15	.864	2.334	65.950
16	.835	2.256	68.205
17	.801	2.166	70.372
18	.790	2.135	72.507
19	.753	2.035	74.541
20	.736	1.988	76.529
21	.705	1.907	78.436
22	.676	1.826	80.262
23	.639	1.726	81.989
24	.620	1.676	83.664
25	.597	1.613	85.277
26	.576	1.557	86.834
27	.547	1.477	88.311
28	.534	1.442	89.754
29	.513	1.387	91.140
30	.489	1.320	92.461
31	.470	1.271	93.731
32	.448	1.211	94.942
33	.429	1.159	96.101
34	.412	1.114	97.215
35	.374	1.012	98.227
36	.352	.951	99.178
37	.304	.822	100.000

Table R.2. Factor loadings (Scale R).

	Factor					
	Altruism	Sensation seeking	Anxiety	Egocentrism	Stability	Conscientiousness
R_1			-0.419			
R_2					-0.348	
R_3				0.364		
R_4		0.667				
R_5			0.661			
R_6	0.602					
R_7	0.477					
R_8						
R_9	0.300					
R_10		0.548				
R_11				0.627		
R_12		0.591				
R_13			0.382		-0.496	
R_14	0.258					
R_15	0.320			-0.386		
R_16			0.400			
R_17						
R_18					-0.401	
R_19				0.508		
R_20		0.660				
R_21			0.366			
R_22	0.395					
R_23				-0.450		
R_24		0.284				
R_25		0.273	-0.493			
R_26					-0.549	
R_27				-0.569		
R_28		0.309				
R_29			0.454			
R_30			0.346		-0.263	
R_31						
R_32						
R_33						-0.458
R_34						0.496
R_35						
R_36						
R_37						0.516

Table R.3. Factor Correlation Matrix

Fattore	1	2	3	4	5	6
1	1.000	.033	-.044	-.245	-.083	-.163
2	.033	1.000	-.143	.002	-.171	.182
3	-.044	-.143	1.000	-.083	-.179	-.069
4	-.245	.002	-.083	1.000	-.032	.069
5	-.083	-.171	-.179	-.032	1.000	-.016
6	-.163	.182	-.069	.069	-.016	1.000

Scale S, Imagined driving behaviour.

Data from the Scale S of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.87 and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(231)=2498.27, p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a five-factor solution that accounted for the 51.71 % of the total variance. Table S.1 shows the eigenvalues and the variance accounted for by each factor. Table S.2 shows the item loadings after Oblimin rotation.

The first factor (labelled “Risky driving”, accounting for by the 13.76% of the common variance) refers to risky driving behaviour. Items such as “You drive without keeping a safe distance” load on this factor.

The second factor (labelled “Slowing”, accounting for by the 14,77% of the common variance) refers to the slowing the speed when required by the traffic conditions. Items such as “You slow down when approaching a danger sign” load on this factor.

The third factor (labelled “Complying with the traffic code”, accounting for by the 15,70% of the common variance) refers to correct behaviour. Items such as “You violate traffic rules in order to move more smoothly” (reversed) load on this factor. This factor correlates negatively with the first factor (table S.3).

The fourth factor (labelled “Correct Behaviour and no use Alcohol/Drugs”, accounting for by the 18.07% of the common variance) refers to correct driving behaviour, particularity alcohol and drugs related behaviours. Items such as “You drive after having had a glass of beer/wine” (reversed) load on this factor. This factor has a modest negative correlation with the first factor “Risky driving (Table S.3).

Table S.1. Eigenvalues and variance accounted for by each factor (Scale S)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	6.480	29.453	29.453	3.028
2	2.165	9.842	39.295	3.249
3	1.478	6.717	46.012	3.455
4	1.253	5.694	51.707	3.976
5	1.033	4.695	56.402	
6	.966	4.391	60.793	
7	.915	4.160	64.953	
8	.783	3.561	68.514	
9	.725	3.293	71.807	
10	.699	3.178	74.985	

11	.668	3.038	78.023
12	.606	2.755	80.778
13	.563	2.559	83.337
14	.551	2.503	85.839
15	.515	2.339	88.179
16	.456	2.072	90.251
17	.449	2.040	92.290
18	.402	1.827	94.118
19	.377	1.715	95.833
20	.339	1.542	97.375
21	.325	1.478	98.853
22	.252	1.147	100.000

Table S.2. Factor loadings (Scale S).

	Factor			
	Risky driving	Slowing	Complying with the traffic code	Correct Driving Behaviour
S_1			-0.650	
S_2			-0.628	
S_3	0.253		-0.513	
S_4			-0.625	
S_5			-0.536	
S_6	0.486			-0.253
S_7	0.348			-0.369
S_8				-0.516
S_9	0.317			-0.277
S_10	0.259			
S_11	0.489		-0.262	
S_12	0.507			
S_13		0.396		
S_14		0.549		
S_15		0.631		
S_16		0.547		
S_17				-0.677
S_18				-0.750
S_19		0.532		0.259
S_20		0.653		
S_21		0.317	0.274	
S_22	0.255			-0.396

Table S.3. Factor Correlation Matrix (Scale S)

Fattore	1	2	3	4
1	1.000	-.276	-.306	-.376
2	-.276	1.000	.183	.372
3	-.306	.183	1.000	.344
4	-.376	.372	.344	1.000

Scale T, effects of alcohol.

Data from the Scale T of the questionnaire were submitted to exploratory factor analysis (Principal Axis method, Oblimin rotation). The Kaiser-Meyer-Olkin measure of sampling adequacy, 0.82, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(190)=1758.1$, $p<.000$, were both adequate. The criteria used to identify acceptable factors were (a) Scree test, (b) eigenvalues greater than 1, and (c) the percentage of the total variance accounted for by the factor solution. This yielded a three-factor solution that accounted for the 43.02% of the total variance. Table T.1 shows the eigenvalues and the variance accounted for by each factor. Table T.2 shows the item loadings after Oblimin rotation.

The first factor (labelled "Positive effects", accounting for by the 18.03% of the common variance) refers to the supposed positive effects of alcohol assumption. Items such as "Alcohol increases concentration capacity" load on this factor.

The second factor (labelled "Negative effects", accounting for by the 10.1% of the common variance) refers to the supposed negative effects of alcohol assumption. Items such as "Alcohol decreases the level of attention" load on this factor.

The third (labelled "Estimation of negative effects", accounting for by the 13.76% of the common variance) refers to the estimation of the negative effects of alcohol assumption. Items such as "Alcohol has little effects on you" load on this factor. This factor has correlates negatively with the "Positive effects" factor (Table T.3).

Table T1.1. Eigenvalues and variance accounted for by each factor (Scale T)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.889	24.443	24.443	3.606
2	2.319	11.595	36.039	2.753
3	1.397	6.986	43.025	2.020
4	1.248	6.242	49.267	
5	1.023	5.113	54.379	
6	.957	4.784	59.164	
7	.858	4.290	63.454	
8	.835	4.177	67.631	
9	.814	4.071	71.702	
10	.760	3.798	75.501	
11	.662	3.309	78.809	
12	.649	3.243	82.053	
13	.581	2.907	84.960	
14	.543	2.715	87.675	
15	.515	2.573	90.248	

16	.501	2.503	92.751
17	.430	2.148	94.899
18	.399	1.995	96.894
19	.386	1.930	98.823
20	.235	1.177	100.000

Table T.2. Factor loadings (Scale L).

	Factor		
	Positive effects	Negative effects	Underestimation of negative effects (reversed)
T_1	0.409		
T_2	-0.277	0.539	
T_3		0.458	
T_4	0.594		
T_5	0.596		
T_6	0.479		
T_7		0.488	
T_8	0.594		
T_9		0.276	-0.264
T_10	0.709		
T_11		0.558	
T_12	0.720		
T_13		0.525	
T_14		0.627	
T_15		0.586	
T_16			-0.499
T_17			-0.671
T_18			-0.664
T_19			-0.263
T_20			

Table T.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.270	-.453
2	-.270	1.000	-.033
3	-.453	-.033	1.000

Cluster analysis

Factor scores on the identified subscales for scales M, N, P, R, and T were computed through regression analysis, and then submitted to cluster analysis in order to identify groups of respondents. Also the scores on the scale Q (Moral disengagement) were included into the analysis. A hierarchical method of cluster analysis was used to identify the number of clusters, then a k-means method was used to identify the groups of respondents.

Results showed three separate groups of respondents. A multivariate analysis of variance yielded a significant difference among the three groups (Wilks' Lambda=0.11, $F_{40,550}=27.32$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,294}=69.94$, $p<.001$) and a significant interaction between group and subscale ($F_{38,5586}=40.31$, $p<.001$), meaning that each group of respondents shows a specific profile.

7. **RISKY DRIVERS.** One group can be identified as composed of risky drivers. They have a permissive attitude toward driving under the effect of alcohol and recreational drugs, and are not aware of the negative effects of alcohol upon driving. They also refer not to have a correct behaviour during driving, and indeed they are quite tolerant toward violations of the traffic code and speeding. Furthermore, risky drivers have high scores on driving related rage, especially due to obstacles, and high scores on moral disengagement. Compared to safe drivers, risky drivers have higher scores on sensation seeking and aggressive driving, and have more direct experiences of driving under the effect of alcohol.
8. **ANGRY DRIVERS.** People in the second group are especially characterized by having higher scores on the rage-related subscales being. Interestingly, compared to people in the other two groups they are characterized by an external Locus of Control rather than internal, meaning that they consider accidents as essentially due to external causes and factors. Furthermore, these people have rather high scores on the anxiety subscale. Similarly to the risky drivers, however, they show high scores on moral disengagement.
9. **SAFE DRIVERS.** Safe drivers are instead characterized by being not tolerant toward driving under the effects of alcohol and drugs, toward violations of traffic rules and speeding. Safe drivers have a rather high score on attention-related Locus of Control, and show intermediate levels of anxiety. They are also aware of the alcohol negative effects upon driving, and do not feel rage during driving. People in the safe drivers group show low scores on moral disengagement.

Interestingly, the three groups do not differ in terms of age or gender, though a prevalence of males can be observed among the risky drivers.

The average score per subscale (and standard error) for each group is shown in Table 1. Tables 2, 3, and 4 report the results of the post-hoc comparisons among the three groups. Table 5 shows the respondents' mean age as a function of gender and group. Figure 1 shows the profiles of the three groups of drivers on subscales. The three groups do not differ in terms of their perception of risk of being involved in an accident and of how much they worry about this possibility (Figure 2). However, respondents in the risky drivers group feel to be supported and encouraged by their friends more than respondents in the other two groups (Figure 3). The same respondents consider their parents would not be angry at their driving behaviour more than the other respondents (Figure 4).

Table 1. Average scores and standard errors for each group on the subscales of the questionnaire.

	ANGRY drivers			SAFE drivers			RISKY drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Tolerance toward violations	0.13	0.07	132	-0.51	0.07	107	0.81	0.10	58
Negative attitude toward alcohol/drugs	0.20	0.07	132	0.29	0.08	107	-1.17	0.10	58
Positive attitude toward speed	0.00	0.06	132	-0.28	0.07	107	0.72	0.10	58
Attention-related LOC	-0.05	0.08	132	0.05	0.09	107	0.04	0.12	58
External LOC	0.20	0.06	132	-0.54	0.07	107	0.63	0.10	58
Internal LOC	-0.32	0.07	132	0.02	0.08	107	0.66	0.10	58
Insult-related rage	0.57	0.07	132	-0.38	0.07	107	-0.54	0.10	58
Fine-related rage	0.50	0.06	132	-0.63	0.06	107	0.08	0.09	58
Violations-related rage	0.44	0.07	132	-0.15	0.08	107	-0.78	0.10	58
Obstacle-related rage (rev)	-0.56	0.06	132	0.52	0.07	107	0.29	0.09	58
Moral disengagement	0.17	0.06	132	-0.51	0.07	107	0.67	0.09	58
Altruism	-0.18	0.07	132	0.32	0.08	107	-0.26	0.10	58
Sensation Seeking	0.35	0.07	132	-0.47	0.08	107	0.23	0.11	58
Anxiety	0.00	0.08	132	0.06	0.08	107	-0.14	0.12	58
Egocentrism	-0.09	0.07	132	-0.34	0.08	107	0.85	0.10	58
Stability	-0.06	0.07	132	0.09	0.08	107	-0.03	0.11	58
Conscientiousness	0.23	0.07	132	-0.36	0.07	107	0.27	0.10	58
Alcohol positive effects	-0.23	0.06	132	-0.38	0.07	107	1.26	0.09	58
Alcohol negative effects	0.18	0.07	132	0.25	0.08	107	-0.84	0.11	58
Underestimation of alcohol effects (rev)	0.03	0.07	132	0.25	0.08	107	-0.66	0.10	58

Table 2. Comparison between Angry and Safe drivers on each subscale.

	ANGRY drivers	SAFE drivers	Significance
	N=132	N=107	
Tolerance toward violations	0.13	-0.51	p<.001
Negative attitude toward alcohol/drugs	0.20	0.29	ns
Positive attitude toward speed	0.00	-0.28	ns
Attention-related LOC	-0.05	0.05	ns
External LOC	0.20	-0.54	p<.001
Internal LOC	-0.32	0.02	p<.001
Insult-related rage	0.57	-0.38	p<.001
Fine-related rage	0.50	-0.63	p<.001
Violations-related rage	0.44	-0.15	p<.001
Obstacle-related rage (rev)	-0.56	0.52	p<.001

Moral disengagement	0.17	-0.51	p<.001
Altruism	-0.18	0.32	p<.001
Sensation Seeking	0.35	-0.47	p<.001
Anxiety	0.00	0.06	ns
Egocentrism	-0.09	-0.34	ns
Stability	-0.06	0.09	ns
Conscientiousness	0.23	-0.36	p<.001
Alcohol positive effects	-0.23	-0.38	ns
Alcohol negative effects	0.18	0.25	ns
Underestimation of alcohol effects (rev)	0.03	0.25	ns

Table 3. Comparison between Angry and Risky drivers on each subscale.

	ANGRY drivers N=132	RISKY drivers N=58	Significance
Tolerance toward violations	0.13	0.81	p<.001
Negative attitude toward alcohol/drugs	0.20	-1.17	p<.001
Positive attitude toward speed	0.00	0.72	p<.001
Attention-related LOC	-0.05	0.04	ns
External LOC	0.20	0.63	p<.001
Internal LOC	-0.32	0.66	p<.001
Insult-related rage	0.57	-0.54	p<.001
Fine-related rage	0.50	0.08	p<.001
Violations-related rage	0.44	-0.78	p<.001
Obstacle-related rage (rev)	-0.56	0.29	p<.001
Moral disengagement	0.17	0.67	p<.001
Altruism	-0.18	-0.26	ns
Sensation Seeking	0.35	0.23	ns
Anxiety	0.00	-0.14	ns
Egocentrism	-0.09	0.85	p<.001
Stability	-0.06	-0.03	ns
Conscientiousness	0.23	0.27	ns
Alcohol positive effects	-0.23	1.26	p<.001
Alcohol negative effects	0.18	-0.84	p<.001
Underestimation of alcohol effects (rev)	0.03	-0.66	p<.001

Table 4. Comparison between Safe and Risky drivers on each subscale.

	SAFE drivers	RISKY drivers	Significance
	N=107	N=58	
Tolerance toward violations	-0.51	0.81	p<.001
Negative attitude toward alcohol/drugs	0.29	-1.17	p<.001
Positive attitude toward speed	-0.28	0.72	p<.001
Attention-related LOC	0.05	0.04	ns
External LOC	-0.54	0.63	p<.001
Internal LOC	0.02	0.66	p<.001
Insult-related rage	-0.38	-0.54	ns
Fine-related rage	-0.63	0.08	p<.001
Violations-related rage	-0.15	-0.78	p<.001
Obstacle-related rage (rev)	0.52	0.29	ns
Moral disengagement	-0.51	0.67	p<.001
Altruism	0.32	-0.26	p<.001
Sensation Seeking	-0.47	0.23	p<.001
Anxiety	0.06	-0.14	ns
Egocentrism	-0.34	0.85	p<.001
Stability	0.09	-0.03	ns
Conscientiousness	-0.36	0.27	p<.001
Alcohol positive effects	-0.38	1.26	p<.001
Alcohol negative effects	0.25	-0.84	p<.001
Underestimation of alcohol effects (rev)	0.25	-0.66	p<.001

Table 5. Mean age (years) and standard errors as a function of gender and group.

		Mean age	Standard error	N
Males	Angry drivers	16.44	0.20	50
	Safe drivers	16.83	0.22	42
	Risky drivers	16.19	0.22	43
Females	Angry drivers	17.50	0.16	82
	Safe drivers	17.57	0.17	65
	Risky drivers	17.67	0.36	15

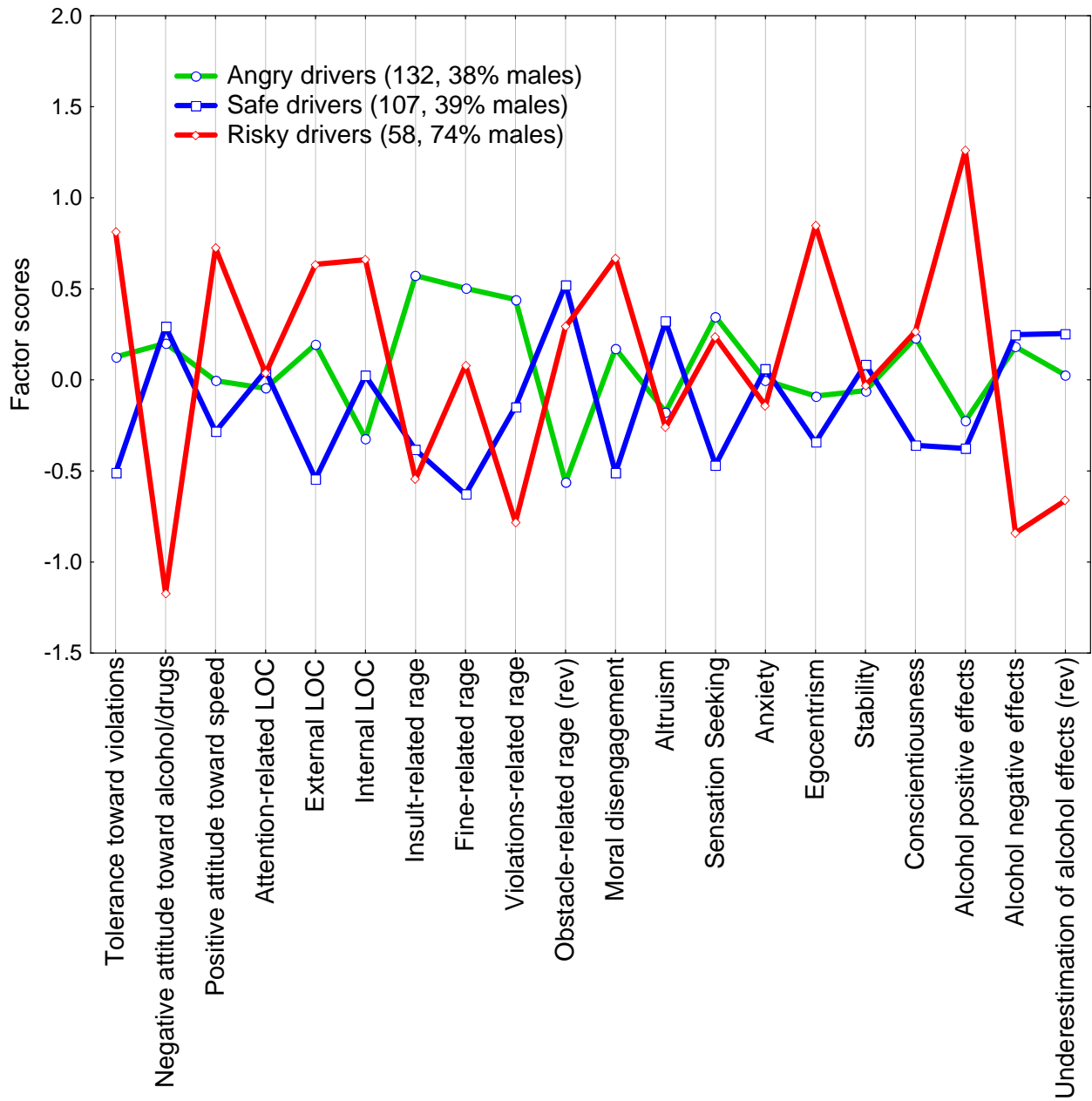


Figure 1. Average scores for each group on the subscales of the questionnaire.



Figure 2. Average scores for each group on items concerning risk perception.

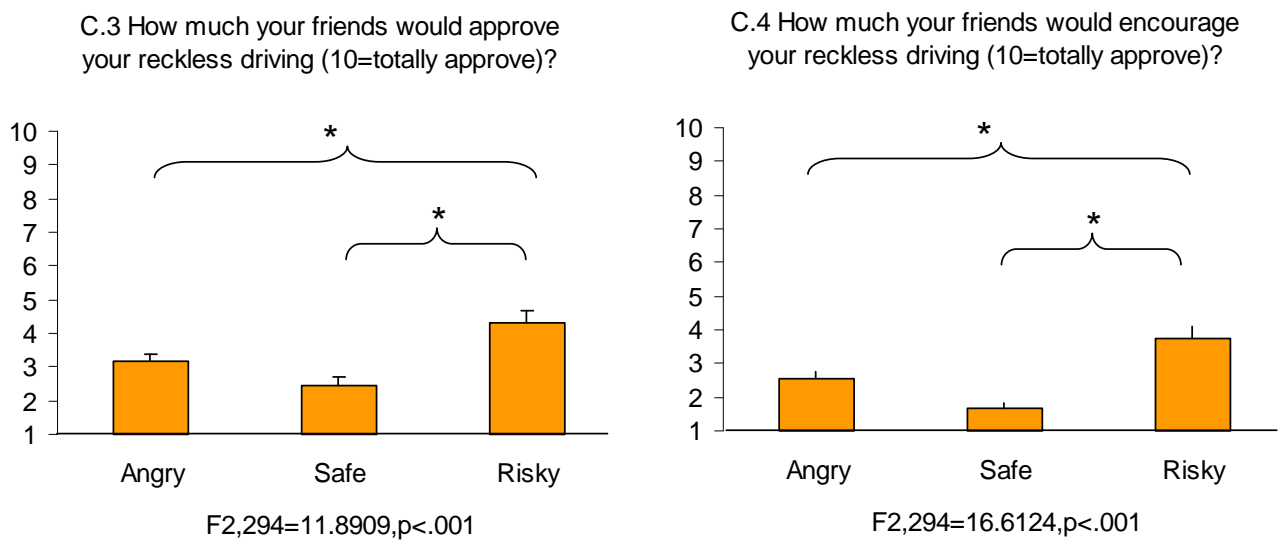


Figure 3. Average scores for each group on items concerning friends' attitude.

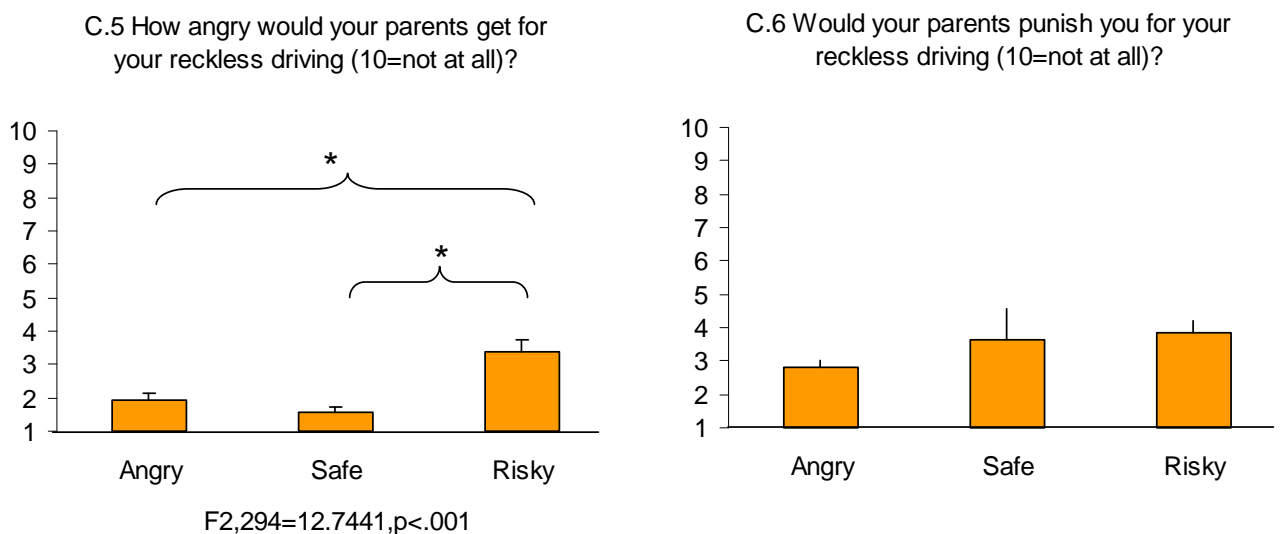


Figure 4. Average scores for each group on items concerning parents' attitude.