



ICARUS Project
TREN/SUB/01-2008



ICARUS Project

Inter - Cultural Approaches for Road Users Safety

Research report

Results

AUSTRIA

CAR DRIVERS (QUESTIONNAIRE SECTION 1)

Sample description

A total of 302 people answered the Section 1 of the questionnaire. Males were 149 (49.3% of the total sample) and females were 153 (50.7% of the total sample). Their mean age was 19.77 years (standard deviation .44), ranging between 17 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. Relatively few Austrian young drivers own a car (about 30% of the respondents), independently of the gender. They however refer to use a car on a regular basis (most of them drive everyday, again without a prevalence of one gender), and for relatively long trips (especially for male drivers). Both male and female drivers refer to drive after midnight relatively often (about 48% of them drive after midnight more than 2 times a week). 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.

Most of the respondents refer not to drive after having drunk alcohol (and it must be noticed that the item do not refer to being drunk, but only to driving after having drunk some alcohol). Summarizing, Austrian young drivers seem to be characterized by being frequent drivers, somehow experienced of driving during night hours, and 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	39 (26.17%)	110 (73.83%)
Females	51 (33.33%)	102 (66.67%)
Total	90 (29.8%)	212 (70.2%)

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	3 (2.75%)	8 (7.34%)	15 (13.76%)	17 (15.6%)	60 (55.05%)	6 (5.5%)
Females	2 (2.02%)	5 (5.05%)	18 (18.18%)	16 (16.16%)	56 (56.57%)	2 (2.02%)
Total	5 (2.4%)	13 (6.25%)	33 (15.87%)	33 (15.87%)	116 (55.77%)	8 (3.85%)

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	5 (4.59%)	12 (11.01%)	20 (18.35%)	18 (16.51%)	54 (49.54%)*
Females	3 (3.03%)	8 (8.08%)	25 (25.25%)	28 (28.28%)*	35 (35.35%)
Total	8 (3.85%)	20 (9.62%)	45 (21.63%)	46 (22.12%)	89 (42.79%)

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	22 (20.18%)	38 (34.86%)	30 (27.52%)*	19 (17.43%)
Females	34 (34.34%)*	39 (39.39%)	13 (13.13%)	13 (13.13%)
Total	56 (26.92%)	77 (37.02%)	43 (20.67%)	32 (15.38%)

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	24 (22.02%)	32 (29.36%)	22 (20.18%)	31 (28.44%)
Females	30 (30.3%)	23 (23.23%)	26 (26.26%)	20 (20.2%)
Total	54 (25.96%)	55 (26.44%)	48 (23.08%)	51 (24.52%)

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?		
	No	Yes
Males	55 (50.46%)	54 (49.54%)*
Females	68 (68.69%)*	31 (31.31%)
Total	123 (59.13%)	85 (40.87%)

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	23 (15.44%)*	10 (6.54%)	33 (10.93%)
Running a red light	4 (2.68%)	2 (1.31%)	6 (1.99%)
Running a stop sign	4 (2.68%)	2 (1.31%)	6 (1.99%)
Speeding	46 (30.87%)*	18 (11.76%)	64 (21.19%)
Drunk driving	3 (2.01%)	1 (.65%)	4 (1.32%)
Lack of seatbelts use	7 (4.7%)	4 (2.61%)	11 (3.64%)

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	84 (77.06%)	8 (7.34%)	6 (5.5%)	1 (.92%)	4 (3.67%)	6 (5.5%)
Females	85 (85.86%)	10 (10.1%)	3 (3.03%)	(.%)	(.%)	1 (1.01%)
Total	169 (81.25%)	18 (8.65%)	9 (4.33%)	1 (.48%)	4 (1.92%)	7 (3.37%)

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	5 (3.36%)	3 (1.96%)	8 (2.65%)
You could hardly keep your head on straight	4 (2.68%)	3 (1.96%)	7 (2.32%)
You had muscle cramps	4 (2.68%)	2 (1.31%)	6 (1.99%)
You could hardly keep your eyes open	4 (2.68%)	5 (3.27%)	9 (2.98%)
You got stomach cramps	5 (3.36%)	3 (1.96%)	8 (2.65%)
You could not focus on the road	9 (6.04%)	5 (3.27%)	14 (4.64%)
Someone who was with you made you notice it	6 (4.03%)	3 (1.96%)	9 (2.98%)

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, 0.83, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153)=1920.03, p<.000$, 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 44.12% 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 "Negative attitude towards drugs and alcohol", accounting for by the 18.8% of the common variance) refer to the attitude toward driving under the effects of substances. Items such as "*I would never drive after drinking alcoholic drinks*" and "*I would never drive under the influence of narcotic drugs*" load on these factor.

The second factor (labelled "Tolerance toward violations", accounting for by the 19.57% 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. This factor is negatively correlated to the first factor (Table A.3).

The third factor (labelled "Negative attitude toward speeding", accounting for by the 5.66% 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. This factor is positively correlated to the first one (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	5.435	30.193	30.193	3.390
2	2.355	13.085	43.278	4.303
3	1.305	7.248	50.526	1.821
4	1.177	6.537	57.062	
5	1.028	5.709	62.771	
6	.947	5.263	68.034	
7	.779	4.326	72.360	
8	.729	4.050	76.410	
9	.629	3.493	79.903	
10	.610	3.388	83.291	
11	.555	3.082	86.373	
12	.529	2.939	89.312	
13	.397	2.206	91.518	

14	.386	2.144	93.662
15	.374	2.077	95.739
16	.324	1.801	97.541
17	.297	1.652	99.193
18	.145	.807	100.000

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

	Factors		
	Negative attitude toward drugs and alcohol	Tolerance to violations to traffic rules	Negative attitude toward speeding
A_1	.047	.722	.142
A_2	-.035	.667	.013
A_3	.006	-.059	-.052
A_4	-.062	.747	.062
A_5	-.101	.432	-.014
A_6	.064	.516	.045
A_7	.046	.538	-.189
A_8	-.040	.476	-.134
A_9	-.018	.708	-.169
A_10	-.002	.720	-.095
A_11	.017	-.210	.057
A_12	-.114	.207	-.737
A_13	-.072	.208	-.708
A_14	.223	-.151	.209
A_15	.608	-.142	-.012
A_16	.685	.038	.085
A_17	1.026	.069	-.089
A_18	.854	.085	-.033

Table A.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.333	.257
2	-.333	1.000	-.195
3	.257	-.195	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, 0.78, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(435)=2480.19$, $p<.000$, 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 three-factor solution that accounted for the 32.32% 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 (labeled "External Locus of Control", accounting for by the 13.87% 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 second factor (labeled "Internal Locus of Control", accounting for by the 11.6% 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 third factor (labeled "Attention related LOC", accounting for by the 6.8% 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 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	5.013	16.710	16.710	3.679
2	3.801	12.669	29.378	3.889
3	2.547	8.489	37.867	2.426
4	1.563	5.210	43.077	
5	1.285	4.284	47.361	
6	1.247	4.157	51.518	
7	1.037	3.455	54.973	
8	.988	3.293	58.266	
9	.938	3.126	61.392	
10	.932	3.106	64.498	
11	.889	2.964	67.462	
12	.825	2.751	70.213	
13	.780	2.600	72.813	

14	.729	2.431	75.244
15	.701	2.336	77.580
16	.684	2.281	79.861
17	.653	2.176	82.037
18	.622	2.072	84.109
19	.601	2.004	86.113
20	.561	1.868	87.981
21	.507	1.688	89.670
22	.477	1.591	91.260
23	.447	1.489	92.749
24	.416	1.387	94.136
25	.371	1.237	95.373
26	.364	1.214	96.588
27	.322	1.072	97.660
28	.283	.943	98.603
29	.248	.827	99.430
30	.171	.570	100.000

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

	Factor		
	External LOC	Internal LOC	Attention-related Internal LOC
B_1	.359	.044	-.040
B_2	.389	.030	-.001
B_3	.318	.104	.009
B_4	.359	-.075	-.112
B_5	.417	.145	-.081
B_6	.010	.473	.119
B_7	.091	.738	-.062
B_8	.183	.670	.023
B_9	.104	.579	.186
B_10	.079	.504	.061
B_11	.512	.040	.041
B_12	.470	.207	-.059
B_13	.615	-.095	.146
B_14	.864	-.202	.176
B_15	.885	-.082	.150
B_16	-.080	.480	.244
B_17	-.127	.547	.092

B_18	-.046	.298	.679
B_19	-.129	.337	.707
B_20	.277	.185	-.225
B_21	.095	.239	.488
B_22	.134	-.124	.550
B_23	.388	-.094	.165
B_24	.347	.255	-.194
B_25	.050	-.261	.356
B_26	.068	.067	.345
B_27	-.016	.000	.365
B_28	.059	.597	-.190
B_29	-.174	.201	.250
B_30	-.014	.589	-.060

Table B.3. Factor correlation matrix

Factor	1	2	3
1	1.000	.138	-.047
2	.138	1.000	.089
3	-.047	.089	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, 0.84, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(91)=1278.26$, $p<.000$, 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 44.1% 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 "Insult-related rage, reversed", accounting for by the 19.34% of the common variance) refers to refers the rage reactions due insults from other drivers. Items such as "*Somebody sounds the horn for your way of driving*" load on this factor.

The second factor (labelled "Obstacle-related rage", accounting for by the 19.04% 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 third factor (labelled "Violation-related rage", accounting for by the 5.74% 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 notably 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	4.874	34.815	34.815	2.486
2	1.487	10.621	45.436	3.184
3	1.203	8.595	54.031	3.428
4	1.022	7.299	61.330	
5	.761	5.433	66.763	
6	.730	5.217	71.980	
7	.712	5.089	77.069	
8	.640	4.574	81.643	
9	.587	4.192	85.835	
10	.545	3.892	89.727	
11	.473	3.382	93.109	
12	.414	2.957	96.066	
13	.348	2.486	98.552	
14	.203	1.448	100.000	

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

	Factor		
	Insult-related Rage	Obstacle-related rage	Violation-related rage
D_1			.450
D_2		.349	
D_3			.490
D_4			.193
D_5			.524
D_6			.593
D_7		.738	
D_8		.552	
D_9	.656		
D_10	.972		
D_11			.624
D_12		.620	
D_13			.482
D_14		.749	

Table D3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	.286	.435
2	.286	1.000	.490
3	.435	.490	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, 0.78, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(666)=3308.64$, $p<.000$, 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 39.12% 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 "Conscientiousness", accounting for the 6.34% of the common variance) refers to the ability to make plans and follow through with them. Item such as "*I make plans and follow through with them*" load on this factor.

The second factor (labelled "Anxiety", accounting for by the 18.78% 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 9.68% 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 "Stability", accounting for by the 5.58% of the common variance) refers to being calm and reflexive. Items such as "*It takes a lot to make me angry*" load on this factor.

The fifth factor (labelled "Egocentrism", accounting for by the 5.06% of the common variance) refers to an egoistic attitude. Items such as "*Some people think I am egoist and egocentric*" load on this factor. Factors are not correlated (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	5.440	14.704	14.704	3.130
2	4.360	11.783	26.487	4.087
3	3.036	8.206	34.693	3.903
4	2.309	6.241	40.935	3.053
5	1.542	4.167	45.102	2.223
6	1.375	3.717	48.819	
7	1.275	3.447	52.265	
8	1.225	3.312	55.577	
9	1.150	3.109	58.686	
10	1.052	2.844	61.530	
11	.954	2.579	64.110	
12	.926	2.502	66.611	
13	.825	2.231	68.842	
14	.784	2.120	70.962	

15	.777	2.100	73.062
16	.739	1.997	75.059
17	.690	1.866	76.925
18	.656	1.772	78.698
19	.609	1.645	80.343
20	.584	1.579	81.922
21	.572	1.546	83.468
22	.555	1.501	84.968
23	.532	1.437	86.405
24	.507	1.370	87.775
25	.500	1.352	89.128
26	.458	1.237	90.364
27	.451	1.220	91.584
28	.439	1.188	92.772
29	.390	1.054	93.825
30	.373	1.008	94.833
31	.337	.910	95.743
32	.317	.858	96.601
33	.292	.790	97.391
34	.275	.744	98.135
35	.249	.673	98.808
36	.225	.609	99.418
37	.216	.582	100.000

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

	Factor				
	Conscientiousness	Anxiety	Sensation Seeking	Stability	Egocentrism
F_1					0.577
F_2		0.484			
F_3				-0.268	0.440
F_4			0.591		
F_5		0.728			
F_6		-0.284		0.477	0.255
F_7				0.600	
F_8			-0.311		0.493
F_9					
F_10			0.547		
F_11					0.611

F_12			0.654		
F_13		0.726			
F_14					
F_15		0.261		0.556	
F_16		0.462	-0.275		
F_17					
F_18			0.391	-0.284	
F_19					0.446
F_20			0.857		
F_21		0.433			
F_22				0.454	0.305
F_23			0.385	0.336	
F_24			0.516		
F_25		-0.320	0.265		0.315
F_26		0.530			
F_27				0.270	
F_28					
F_29		0.726			
F_30		0.766			
F_31				0.465	-0.267
F_32			0.258		
F_33	0.532				
F_34			0.493		
F_35	1.082				
F_36	0.511				
F_37		0.361	0.426		

Table F.3. Factor Correlation Matrix

Factor	1	2	3	4	5
1	1.000	.045	.214	.393	.053
2	.045	1.000	.077	-.051	.038
3	.214	.077	1.000	.115	.147
4	.393	-.051	.115	1.000	.093
5	.053	.038	.147	.093	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, 0.942, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(561)=5384.4$, $p<.000$, 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 51.1% 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 40.1% of the common variance) refers to violations of the traffic code. Items such as *“Run a red light.”* load on this factor.

The second factor (labelled “Speed/Aggressive behaviour”, accounting for by the 7.27% of the common variance) refers to speed and aggressive behaviour. Items such as *“Exceeded speed limits on the motorway”* or *“Got angry at another driver and shown him/her that you were angry with an obscene gesture or verbal insult”* load on this factor.

The third factor (labelled “Slips/Lapses”, accounting for by the 3.74% of the common variance) refers to errors due to lapses and slips. Items such as *“I easily panic”* load on this factor.

This factor correlates with both the previous factors.

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	13.986	41.135	41.135	12.142
2	2.795	8.221	49.356	7.789
3	1.580	4.648	54.004	8.078
4	1.243	3.655	57.659	
5	1.011	2.975	60.633	
6	.968	2.847	63.480	
7	.885	2.604	66.084	
8	.821	2.416	68.499	
9	.791	2.328	70.827	
10	.756	2.223	73.050	
11	.695	2.045	75.095	
12	.666	1.959	77.055	
13	.606	1.783	78.838	
14	.565	1.662	80.500	
15	.533	1.567	82.067	
16	.523	1.539	83.607	

17	.492	1.446	85.052
18	.464	1.366	86.419
19	.447	1.314	87.732
20	.413	1.215	88.947
21	.388	1.140	90.087
22	.372	1.093	91.180
23	.354	1.043	92.222
24	.314	.923	93.146
25	.304	.895	94.041
26	.291	.855	94.895
27	.271	.796	95.691
28	.255	.751	96.442
29	.247	.727	97.169
30	.223	.655	97.824
31	.215	.632	98.456
32	.194	.571	99.027
33	.189	.557	99.584
34	.141	.416	100.000

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

	Factor		
	Violations	Aggressive behavior	Slips/Lapses
I_1	0.526		
I_2	0.553		
I_3		0.649	
I_4		0.837	
I_5		0.559	
I_6	0.575		
I_7		0.653	
I_8	0.616		
I_9	0.585		
I_10		0.589	
I_11		0.703	
I_12		0.691	
I_13		0.319	
I_14	0.455		0.374
I_15		0.575	
I_16	0.467	0.296	

I_17	0.483	0.344	
I_18			0.492
I_19			0.762
I_20			0.660
I_21			0.411
I_22	0.279		0.508
I_23	0.568		0.293
I_24	0.301		0.446
I_25			0.605
I_26			0.416
I_27	0.885		
I_28	0.696		
I_29	0.816		
I_30	0.571		0.313
I_31	0.714		
I_32	0.921		
I_33	0.272		0.335
I_34	0.645		

Table I.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	.505	.565
2	.505	1.000	.276
3	.565	.276	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 $\chi^2(231)=3372.07$, $p<.000$, 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 55.1% 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 “Violations”, accounting for by the 28.86% of the common variance) refers to violations of the rules. Items such as *“To drive without keeping a safe distance.”* load on this factor.

The second factor (labelled “Caution”, accounting for by the 18.58% of the common variance) refers to the caution 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 “Speed” (reversed), accounting for by the 7.65% of the common variance) refers to speeding. Items such as *“You exceed the speed limits by 10 Km/h”* load on this factor. Both the second and the third factors negatively correlate to the first factor. (Table J.3).

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	6.713	30.511	30.511	5.528
2	4.406	20.029	50.541	4.137
3	2.019	9.178	59.718	4.502
4	1.013	4.606	64.325	
5	.983	4.469	68.794	
6	.772	3.508	72.301	
7	.732	3.328	75.629	
8	.708	3.218	78.848	
9	.620	2.818	81.665	
10	.547	2.487	84.152	
11	.475	2.159	86.311	
12	.436	1.980	88.291	
13	.405	1.839	90.130	
14	.345	1.568	91.698	
15	.322	1.465	93.163	
16	.293	1.330	94.493	
17	.269	1.224	95.717	

18	.244	1.108	96.825
19	.221	1.005	97.829
20	.196	.891	98.721
21	.150	.682	99.402
22	.131	.598	100.000

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

	Factor		
	Violations	Caution	Speed (reversed)
J_1			-0.562
J_2			-0.684
J_3			-0.819
J_4			-0.788
J_5			-0.794
J_6	0.647		
J_7	0.529		
J_8	0.597		
J_9	0.584		
J_10	0.422		-0.320
J_11	0.381		
J_12	0.798		
J_13		0.532	
J_14		0.711	
J_15		0.782	
J_16		0.752	
J_17	0.746		
J_18	0.892		
J_19		0.852	
J_20		0.846	
J_21		0.673	
J_22	0.867		

Table J.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	.008	-.399
2	.008	1.000	-.223
3	-.399	-.223	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, 0.76, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(36)=1257.19$, $p<.000$, 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 53.11% 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 toward alcohol", accounting for by the 28% 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 21.7% 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.

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	3.336	37.062	37.062	2.521
2	1.445	16.051	53.113	1.953
3	.968	10.757	63.870	
4	.773	8.590	72.461	
5	.715	7.948	80.408	
6	.634	7.044	87.453	
7	.533	5.923	93.376	
8	.373	4.149	97.524	
9	.223	2.476	100.000	

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

	Factor	
	Permissive attitude	Preventing behaviours
K_1	0.825	
K_2	0.980	
K_3		0.562
K_4		0.563
K_5	0.424	0.358
K_6		0.433
K_7		0.582
K_8	0.406	
K_9	0.355	0.342

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, 0.878, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(190)=2087.99$, $p<.000$, 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 41.99% 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 27.91% 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 “Negative effects”, accounting for by the 14.07% 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. This factor slightly correlates negatively with the “Positive effects” factor (Table L.3).

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	5.988	29.940	29.940
2	3.257	16.286	46.226	3.641
3	1.167	5.834	52.060	
4	1.047	5.235	57.295	
5	.958	4.788	62.083	
6	.866	4.331	66.415	
7	.789	3.947	70.362	
8	.713	3.565	73.927	
9	.668	3.341	77.268	
10	.638	3.189	80.457	
11	.594	2.968	83.425	
12	.568	2.840	86.265	
13	.526	2.629	88.895	
14	.425	2.127	91.021	
15	.386	1.928	92.950	
16	.366	1.829	94.778	
17	.301	1.503	96.281	
18	.278	1.388	97.669	
19	.265	1.326	98.995	
20	.201	1.005	100.000	

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

	Factor	
	Positive effects	Negative effects
L_1	0.569	
L_2		0.765
L_3		0.753
L_4	0.798	
L_5	0.721	
L_6	0.379	
L_7		0.547
L_8	0.494	
L_9		0.322
L_10	0.625	
L_11		0.786
L_12	0.647	
L_13		0.731
L_14		0.407
L_15		0.652
L_16	0.547	
L_17	0.440	
L_18	0.635	
L_19	0.729	
L_20	0.833	

Table L.3 Factor Correlation Matrix

Factor	1	2
1	1.000	-.164
2	-.164	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, $F_{44,366}=19.80$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,204}=36.41$, $p<.001$) and a significant interaction between group and subscale ($F_{42,4284}= 25.13$, $p<.001$), 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 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 direct experiences of driving under the effect of alcohol.
2. **AGGRESSIVE DRIVERS.** People in this group are especially characterized by high scores on aggressive/angry-related subscales, compared to safe drivers. They are tolerant toward traffic code violations, and have rather high scores on sensation seeking and egocentrism. Similarly to the risky drivers, 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 behaviours.
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 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.

The three groups do not differ in terms of age or gender, though a prevalence of males can be observed among the risky and aggressive 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). Also, the three groups do not differ in terms of how much angry their parents would be for their reckless driving (Figure 4). However, respondents in the safe drivers group perceive their friends as less supportive a reckless driving behaviour than respondents in the other two groups (Figure 3).

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

	AGGRESSIVE drivers			SAFE drivers			RISKY drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Negative attitude toward alcohol/drug	0.18	0.09	84	0.29	0.08	100	-1.56	0.17	23
Tolerance toward violations	0.47	0.09	84	-0.53	0.08	100	0.48	0.17	23
Speeding (rev)	-0.10	0.09	84	0.30	0.08	100	-0.52	0.17	23
External LOC	0.24	0.10	84	-0.34	0.09	100	0.53	0.18	23
Internal LOC	-0.04	0.10	84	-0.21	0.09	100	0.50	0.19	23
Attention-oriented LOC	0.01	0.10	84	0.17	0.09	100	-0.34	0.18	23
Insult-related rage	0.30	0.10	84	-0.29	0.09	100	-0.09	0.20	23
Obstacle-related rage	0.29	0.09	84	-0.35	0.08	100	0.32	0.17	23
Violation-related rage	0.37	0.09	84	-0.26	0.08	100	-0.09	0.17	23
Conscientiousness	0.11	0.10	84	0.16	0.09	100	-0.35	0.19	23
Anxiety	-0.18	0.10	84	0.08	0.09	100	0.13	0.20	23
Sensation Seeking	0.39	0.09	84	-0.36	0.08	100	0.36	0.18	23
Stability	0.04	0.09	84	0.12	0.09	100	-0.05	0.18	23
Egocentrism	0.18	0.08	84	-0.45	0.07	100	0.82	0.15	23
Violations	-0.10	0.06	84	-0.44	0.06	100	1.89	0.12	23
Aggressive driving	0.40	0.09	84	-0.51	0.08	100	1.11	0.17	23
Slips/Lapses	-0.15	0.09	84	-0.13	0.08	100	1.24	0.17	23
Alcohol positive effects	-0.15	0.06	84	-0.45	0.06	100	1.44	0.12	23
Alcohol negative effects	-0.01	0.09	84	0.29	0.08	100	-0.87	0.18	23
Alcohol experiences	-0.01	0.07	84	-0.48	0.07	100	1.26	0.14	23
Prevention behavior	0.07	0.10	84	-0.25	0.09	100	0.56	0.19	23
Moral disengagement (rev)	-0.58	0.08	84	0.71	0.07	100	-0.93	0.15	23

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

	AGGRESSIVE drivers	SAFE drivers	Significance
	N=84	N=100	
Negative attitude toward alcohol/drug	0.18	0.29	ns
Tolerance toward violations	0.47	-0.53	p<.001
Speeding (rev)	-0.10	0.30	p<.001
External LOC	0.24	-0.34	p<.001
Internal LOC	-0.04	-0.21	ns
Attention-oriented LOC	0.01	0.17	ns
Insult-related rage	0.30	-0.29	p<.001
Obstacle-related rage	0.29	-0.35	p<.001
Violation-related rage	0.37	-0.26	p<.001
Conscientiousness	0.11	0.16	ns

Anxiety	-0.18	0.08	ns
Sensation Seeking	0.39	-0.36	p<.001
Stability	0.04	0.12	ns
Egocentrism	0.18	-0.45	p<.001
Violations	-0.10	-0.44	p<.001
Aggressive driving	0.40	-0.51	p<.001
Slips/Lapses	-0.15	-0.13	ns
Alcohol positive effects	-0.15	-0.45	p<.001
Alcohol negative effects	-0.01	0.29	ns
Alcohol experiences	-0.01	-0.48	p<.001
Prevention behavior	0.07	-0.25	ns
Moral disengagement (rev)	-0.58	0.71	p<.001

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

	AGGRESSIVE drivers	RISKY drivers	Significance
	N=84	N=23	
Negative attitude toward alcohol/drug	0.18	-1.56	p<.001
Tolerance toward violations	0.47	0.48	ns
Speeding (rev)	-0.10	-0.52	ns
External LOC	0.24	0.53	ns
Internal LOC	-0.04	0.50	ns
Attention-oriented LOC	0.01	-0.34	ns
Insult-related rage	0.30	-0.09	ns
Obstacle-related rage	0.29	0.32	ns
Violation-related rage	0.37	-0.09	ns
Conscientiousness	0.11	-0.35	ns
Anxiety	-0.18	0.13	ns
Sensation Seeking	0.39	0.36	ns
Stability	0.04	-0.05	ns
Egocentrism	0.18	0.82	p<.001
Violations	-0.10	1.89	p<.001
Aggressive driving	0.40	1.11	ns
Slips/Lapses	-0.15	1.24	p<.001
Alcohol positive effects	-0.15	1.44	p<.001
Alcohol negative effects	-0.01	-0.87	p<.001
Alcohol experiences	-0.01	1.26	p<.001
Prevention behavior	0.07	0.56	ns
Moral disengagement (rev)	-0.58	-0.93	ns

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

	SAFE drivers	RISKY drivers	Significance
	N=100	N=23	
Negative attitude toward alcohol/drug	0.29	-1.56	p<.001
Tolerance toward violations	-0.53	0.48	p<.001
Speeding (rev)	0.30	-0.52	p<.001
External LOC	-0.34	0.53	p<.001
Internal LOC	-0.21	0.50	p<.001
Attention-oriented LOC	0.17	-0.34	ns
Insult-related rage	-0.29	-0.09	ns
Obstacle-related rage	-0.35	0.32	ns
Violation-related rage	-0.26	-0.09	ns
Conscientiousness	0.16	-0.35	ns
Anxiety	0.08	0.13	ns
Sensation Seeking	-0.36	0.36	ns
Stability	0.12	-0.05	ns
Egocentrism	-0.45	0.82	p<.001
Violations	-0.44	1.89	p<.001
Aggressive driving	-0.51	1.11	p<.001
Slips/Lapses	-0.13	1.24	p<.001
Alcohol positive effects	-0.45	1.44	p<.001
Alcohol negative effects	0.29	-0.87	p<.001
Alcohol experiences	-0.48	1.26	p<.001
Prevention behavior	-0.25	0.56	p<.001
Moral disengagement (rev)	0.71	-0.93	p<.001

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

		Mean age	Standard error	N
Males	Aggressive drivers	19.66	0.63	53
	Safe drivers	18.83	0.78	35
	Risky drivers	21.90	1.03	20
Females	Aggressive drivers	18.71	0.83	31
	Safe drivers	19.09	0.57	65
	Risky drivers	18.33	2.65	3

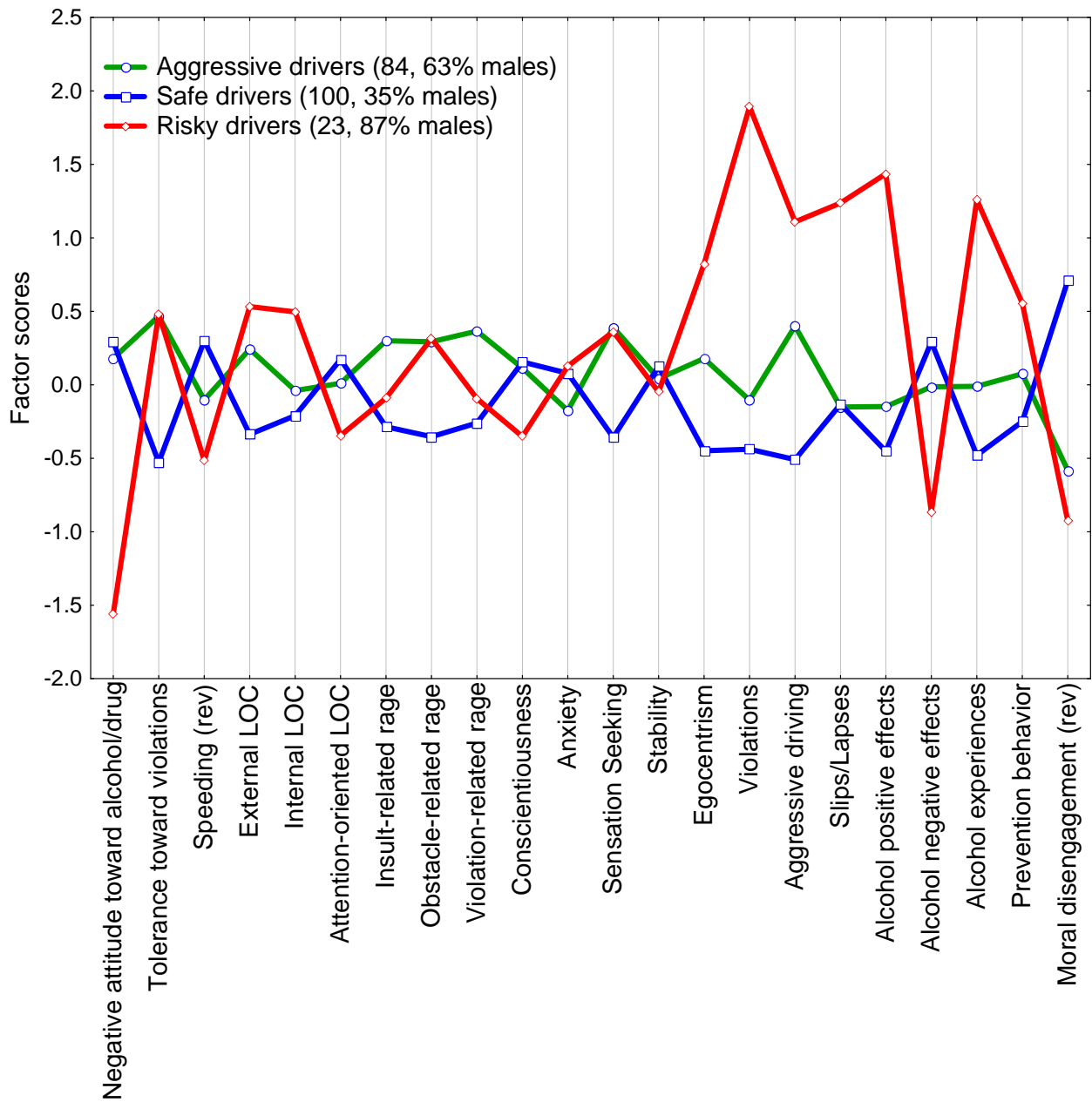


Figure 1. Average scores for each group on subscales of the questionnaire.

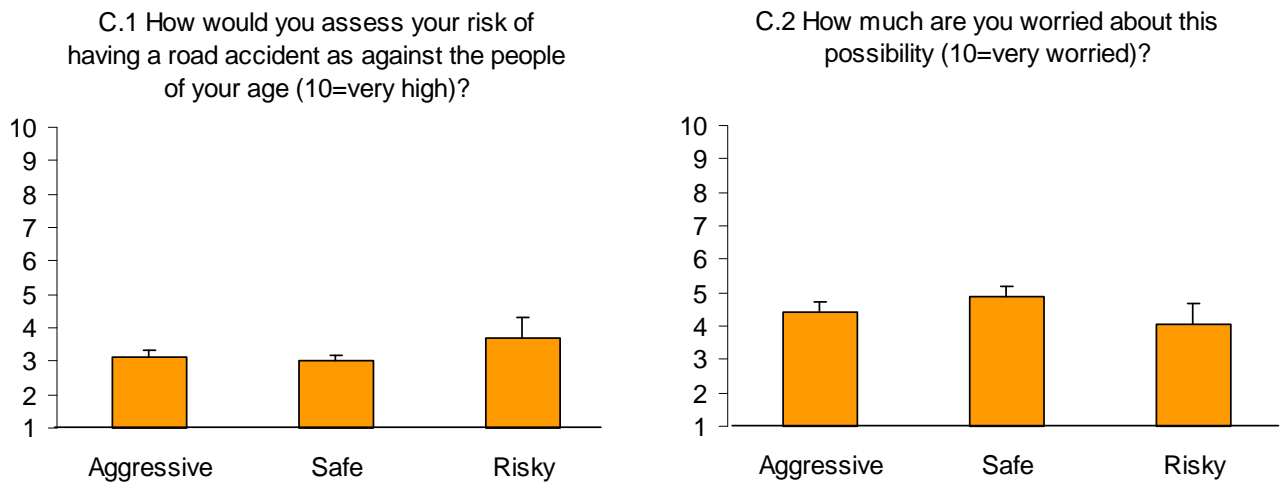


Figure 2. Average scores for each group on items concerning risk perception.

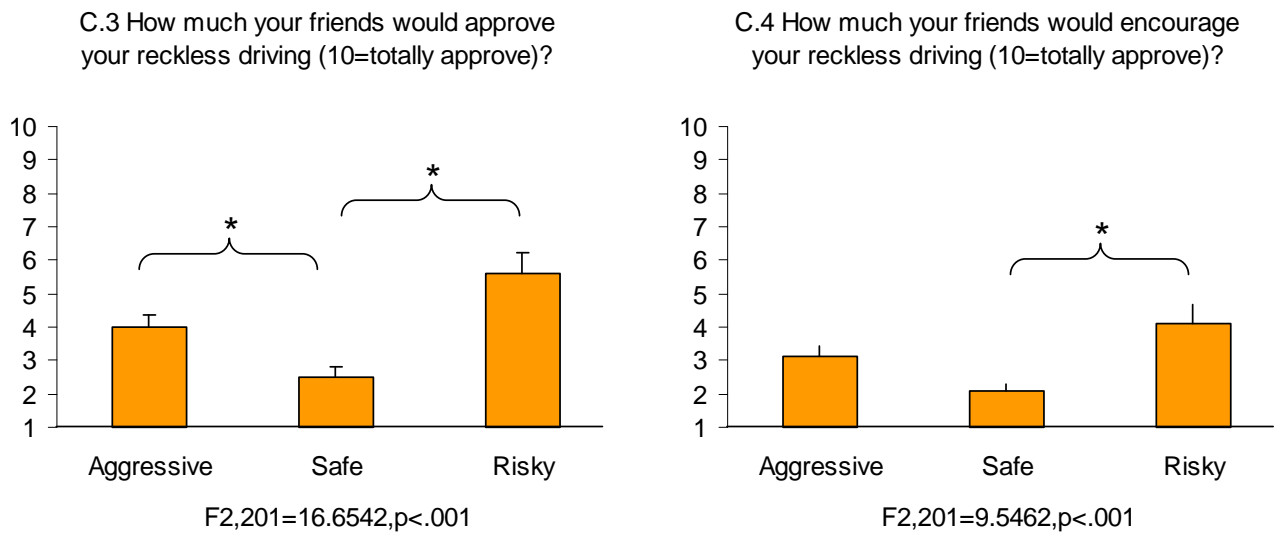


Figure 3. Average scores for each group on items concerning friends' attitude.

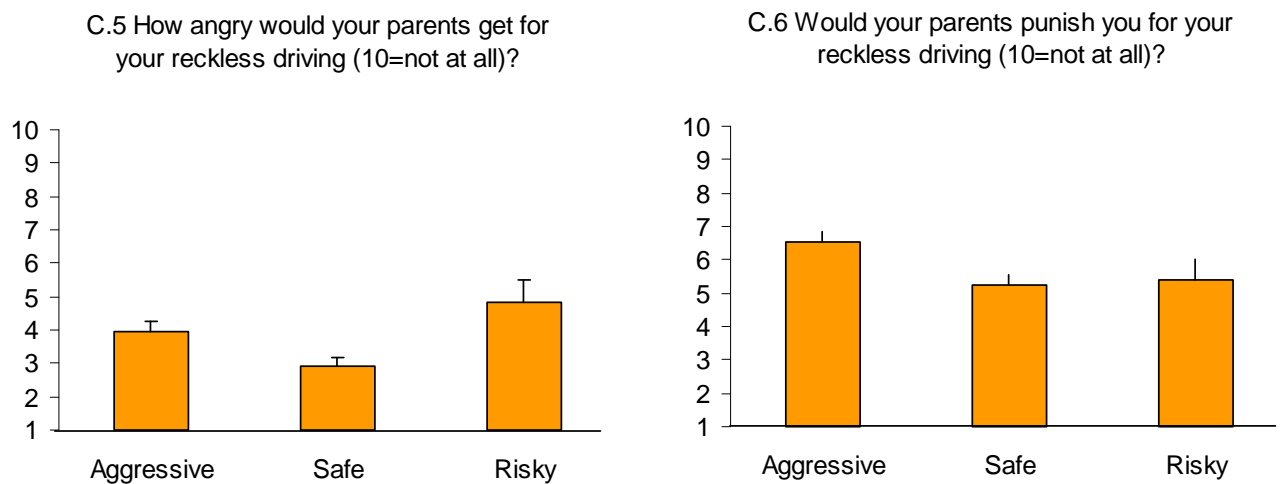


Figure 4. Average scores for each group on items concerning parents' attitude.

SCOOTER DRIVERS (QUESTIONNAIRE SECTION 2)

Sample description

A total of 151 people answered the Section 2 of the questionnaire. Males were 109 (72.2% of the total sample) and females were 42 (27.8% of the total sample). Their mean age was 17.1 years (standard deviation 1.19), ranging between 15 and 26 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 Austrian scooter drivers refer to use scooters or motorbikes on a fair regular basis (most of them drive a scooter more than 4 times a week, without a gender prevalence). 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 (about 43% 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 54% of them do not drive after 11:00 pm at all). Austrian scooter drivers also are not normally used to go on as passengers. Male drivers also refer to have received a traffic fine more often than female drivers, mostly for speeding. 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 (30% of the total sample, but mostly male drivers) 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 and keeping eyes open. This might suggest that a consistent number of young drivers are rather unaware of the negative effects of driving under the effects of alcohol.

Summarizing, Austrian young scooter drivers seem to be characterized by being frequent drivers, somehow experienced of driving during night hours (especially male drivers), and not completely 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		4 (4.04%)	12 (12.12%)	25 (25.25%)	17 (17.17%)	33 (33.33%)	8 (8.08%)
Females		2 (5.13%)	8 (20.51%)	12 (30.77%)	8 (20.51%)	8 (20.51%)	1 (2.56%)
Total		6 (4.35%)	20 (14.49%)	37 (26.81%)	25 (18.12%)	41 (29.71%)	9 (6.52%)

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	16 (16.16%)	27 (27.27%)	20 (20.2%)	22 (22.22%)*	14 (14.14%)
Females	10 (25.64%)	16 (41.03%)	6 (15.38%)	2 (5.13%)	5 (12.82%)
Total	26 (18.84%)	43 (31.16%)	26 (18.84%)	24 (17.39%)	19 (13.77%)

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	27 (27.27%)	29 (29.29%)	16 (16.16%)	27 (27.27%)
Females	21 (53.85%)*	10 (25.64%)	2 (5.13%)	6 (15.38%)
Total	48 (34.78%)	39 (28.26%)	18 (13.04%)	33 (23.91%)

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	51 (51.52%)	32 (32.32%)	7 (7.07%)	3 (3.03%)	2 (2.02%)	4 (4.04%)
Females	19 (48.72%)	14 (35.9%)	4 (10.26%)	0	2 (5.13%)	0
Total	70 (50.72%)	46 (33.33%)	11 (7.97%)	3 (2.17%)	4 (2.9%)	4 (2.9%)

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	62 (62.63%)	22 (22.22%)	8 (8.08%)	7 (7.07%)
Females	26 (66.67%)	11 (28.21%)	0	2 (5.13%)
Total	88 (63.77%)	33 (23.91%)	8 (5.8%)	9 (6.52%)

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	28 (28.28%)*	71 (71.72%)
Females	2 (5.13%)	37 (94.87%)*
Total	30 (21.74%)	108 (78.26%)

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	7 (6.48%)	1 (2.38%)	8 (5.33%)
Running a red light	8 (7.41%)	1 (2.38%)	9 (6.%)
No parking	7 (6.48%)	1 (2.38%)	8 (5.33%)
Passenger	5 (4.63%)	0	5 (3.33%)
Drunk driving	7 (6.48%)	1 (2.38%)	8 (5.33%)
Driving without the helmet	7 (6.48%)	1 (2.38%)	8 (5.33%)
Speeding	21 (19.44%)*	2 (4.76%)	23 (15.33%)

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	31 (31.31%)	56 (56.57%)	12 (12.12%)
Females	7 (17.95%)	29 (74.36%)	3 (7.69%)
Total	38 (27.54%)	85 (61.59%)	15 (10.87%)

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	27 (64.29%)	3 (7.14%)	12 (28.57%)
Females	4 (50.%)	1 (12.5%)	4 (50.%)
Total	31 (62.%)	4 (8.%)	16 (32.%)

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	25 (25.25%)	71 (71.72%)	3 (3.03%)
Females	7 (17.95%)	32 (82.05%)	0
Total	32 (23.19%)	103 (74.64%)	3 (2.17%)

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	31 (79.49%)	4 (10.26%)	4 (10.26%)
Females	4 (50.%)	1 (12.5%)	3 (37.5%)*
Total	35 (74.47%)	5 (10.64%)	7 (14.89%)

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	39 (39.39%)*	60 (60.61%)
Females	3 (7.69%)	36 (92.31%)*
Total	42 (30.43%)	96 (69.57%)

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	8 (7.41%)	1 (2.38%)	9 (6.%)
You could hardly keep your head on straight	7 (6.48%)	1 (2.38%)	8 (5.33%)
You had muscle cramps	5 (4.63%)	2 (4.76%)	7 (4.67%)
You could hardly keep your eyes open	9 (8.33%)	1 (2.38%)	10 (6.67%)
You got stomach cramps	5 (4.63%)	0	5 (3.33%)
You could not focus on the road	10 (9.26%)	0	10 (6.67%)
Someone who was with you made you notice it	10 (9.26%)	2 (4.76%)	12 (8.%)

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, 0.78, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153)=1066, p<.000$, 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 47.62% 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 "Positive attitude towards drugs and alcohol" (reversed), accounting for by the 16.46% of the common variance) refer to the attitude toward driving under the effects of substances. Items such as "*I would never drive after drinking alcoholic drinks*" and "*I would never drive under the influence of narcotic drugs*" load on these factor.

The second factor (labelled "Tolerance toward violations", accounting for by the 25.89% 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. This factor is negatively correlated to the first factor (Table A.3).

The third factor (labelled "Negative attitude toward speeding" (reversed), accounting for by the 9.57% 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. This factor is positively correlated to the first one (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	5.402	30.011	30.011	2.964
2	3.052	16.956	46.967	4.662
3	1.270	7.058	54.024	1.723
4	1.204	6.688	60.713	
5	.953	5.292	66.005	
6	.799	4.438	70.443	
7	.744	4.134	74.577	
8	.704	3.909	78.486	
9	.624	3.465	81.951	
10	.596	3.310	85.260	
11	.519	2.881	88.141	

12	.480	2.667	90.809
13	.397	2.205	93.013
14	.389	2.160	95.173
15	.294	1.634	96.807
16	.276	1.533	98.340
17	.186	1.032	99.372
18	.113	.628	100.000

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

	Factors		
	Positive attitude toward drugs and alcohol (reversed)	Tolerance to violations to traffic rules	Negative attitude toward speeding (reversed)
A_1		0.632	
A_2		0.626	
A_3	-0.149		
A_4		0.710	
A_5		0.501	
A_6		0.602	
A_7		0.656	
A_8		0.584	
A_9		0.790	
A_10		0.885	
A_11	-0.156		
A_12			-0.803
A_13			-0.677
A_14	-0.429		
A_15	-0.642		
A_16	-0.617		
A_17	-0.865		
A_18	-0.974		

Table A.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	.170	-.104
2	.170	1.000	-.210
3	-.104	-.210	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, 0.767, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(435)=1392.85, p<.000$, 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 35.36% 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 (labeled “Internal Locus of Control”, accounting for by the 16.17% 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 (labeled “External Locus of Control”, accounting for by the 14.18% 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 (labeled “Attention related LOC”, accounting for by the 9.01% 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 slightly 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	6.268	20.894	20.894	4.853
2	3.229	10.762	31.656	4.257
3	2.276	7.586	39.242	2.706
4	1.767	5.890	45.132	
5	1.403	4.676	49.808	
6	1.397	4.655	54.464	
7	1.253	4.177	58.641	
8	1.073	3.576	62.217	
9	1.013	3.377	65.594	
10	.904	3.014	68.608	
11	.894	2.980	71.588	
12	.862	2.872	74.460	
13	.759	2.531	76.991	

14	.735	2.450	79.442
15	.687	2.291	81.733
16	.622	2.074	83.807
17	.523	1.745	85.552
18	.514	1.712	87.263
19	.452	1.506	88.769
20	.431	1.436	90.205
21	.414	1.379	91.584
22	.376	1.253	92.837
23	.348	1.161	93.998
24	.322	1.074	95.072
25	.303	1.009	96.081
26	.281	.938	97.018
27	.248	.827	97.845
28	.244	.813	98.658
29	.206	.688	99.346
30	.196	.654	100.000

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

	Factor		
	Internal LOC	External LOC	Attention-related LOC
B_1		0.381	
B_2		0.388	
B_3		0.368	
B_4		0.506	
B_5		0.375	
B_6	0.528		
B_7	0.711		
B_8	0.747		
B_9	0.530		
B_10	0.478		
B_11	0.330	0.430	
B_12		0.373	
B_13		0.704	
B_14		0.807	
B_15		0.752	
B_16	0.600		

B_17	0.655		
B_18			0.490
B_19			0.556
B_20		0.369	
B_21			0.589
B_22			0.329
B_23		0.325	
B_24	0.536		
B_25		0.405	
B_26		0.339	
B_27			0.722
B_28	0.621		
B_29			0.320
B_30	0.624		

Table B.3. Factor correlation matrix

Factor	1	2	3
1	1.000	.235	.112
2	.235	1.000	.207
3	.112	.207	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, 0.826, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(91)=558.66$, $p<.000$, 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 44.44% 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 “Insult-related rage, reversed”, accounting for by the 14.35% of the common variance) refers to refers the rage reactions due insults from other drivers. Items such as “*Somebody sounds the horn for your way of driving*” load on this factor.

The second factor (labelled “Obstacle-related rage”, accounting for by the 24.67% 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 third factor (labelled “Violation-related rage”, accounting for by the 18.19% 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 notably 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	4.654	33.240	33.240	2.009
2	1.691	12.081	45.321	3.454
3	1.132	8.086	53.407	2.547
4	.983	7.024	60.431	
5	.913	6.523	66.954	
6	.813	5.806	72.760	
7	.646	4.612	77.371	
8	.576	4.116	81.487	
9	.556	3.972	85.460	
10	.503	3.596	89.056	
11	.472	3.373	92.429	
12	.428	3.058	95.487	
13	.362	2.584	98.071	
14	.270	1.929	100.000	

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

	Factor		
	Insult-related Rage	Obstacle-related rage	Violation-related rage
D_1			0.443
D_2		0.477	
D_3			0.607
D_4			0.628
D_5		0.698	
D_6			0.424
D_7		0.586	
D_8		0.609	
D_9	0.974		
D_10	0.449		
D_11		0.407	
D_12		0.680	
D_13			0.414
D_14		0.654	

Table D3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	.273	.293
2	.273	1.000	.338
3	.293	.338	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, 0.605, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(666)=1670.32, p<.000$, 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 31.11% 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 “Egoism”, accounting for by the 5.99% of the common variance) refers to Egoism. Items such as *“Some people think I am egoist and egocentric”* load on this factor.

The second factor (labelled “Anxiety”, accounting for by the 11.14% 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 8.18% 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 “Altruism”, accounting for by the 7.8% of the common variance) refers Altruism. Items such as *“I think I’m generous with who is in trouble”* load on this factor.

The first and second factors are slightly correlated (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	4.662	12.599	12.599	2.218
2	3.500	9.458	22.058	4.123
3	3.186	8.610	30.667	3.029
4	2.527	6.831	37.498	2.885
5	1.971	5.328	42.826	
6	1.724	4.659	47.485	
7	1.425	3.853	51.338	
8	1.326	3.584	54.921	
9	1.307	3.533	58.454	
10	1.243	3.358	61.813	
11	1.151	3.110	64.922	
12	1.034	2.794	67.716	
13	.943	2.549	70.265	
14	.932	2.518	72.784	
15	.859	2.322	75.106	
16	.835	2.256	77.362	

17	.722	1.950	79.312	
18	.706	1.909	81.221	
19	.655	1.769	82.990	
20	.635	1.717	84.708	
21	.576	1.556	86.264	
22	.532	1.437	87.701	
23	.497	1.344	89.045	
24	.486	1.314	90.359	
25	.427	1.154	91.513	
26	.420	1.135	92.648	
27	.379	1.023	93.671	
28	.362	.978	94.649	
29	.330	.892	95.540	
30	.279	.755	96.296	
31	.265	.717	97.013	
32	.247	.668	97.681	
33	.225	.608	98.289	
34	.187	.506	98.795	
35	.162	.437	99.232	
36	.156	.421	99.653	
37	.128	.347	100.000	

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

	Factor			
	Egoism	Anxiety	Sensation Seeking	Altruism
F_1			0.348	
F_2		0.445		
F_3	0.307			
F_4			0.490	
F_5		0.689		
F_6		-0.254		
F_7				0.487
F_8			-0.426	
F_9				
F_10				0.268
F_11			0.287	
F_12			0.839	
F_13		0.658		

F_14				0.292
F_15				0.256
F_16			-0.399	
F_17				0.072
F_18		0.173		
F_19	1.038			
F_20			0.644	
F_21		0.385		
F_22				0.445
F_23			0.391	
F_24			0.647	
F_25			0.371	
F_26		0.689		
F_27				0.424
F_28		0.290		
F_29		0.639		
F_30		0.690		
F_31				0.333
F_32			0.250	
F_33				0.464
F_34		0.472		
F_35				0.665
F_36				0.642
F_37		0.267		

Table F.3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	.290	.076	-.066
2	.290	1.000	.008	.056
3	.076	.008	1.000	.027
4	-.066	.056	.027	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, 0.835, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(253)=1817.02$, $p<.000$, 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 54.9% 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 30.62% of the common variance) refers to violations of the traffic code. Items such as "*Run a red light.*" load on this factor.

The second factor (labelled "Caution", accounting for by the 13.74% of the common variance) refers to the caution 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 "Speed", accounting for by the 21.88% of the common variance) refers to speed and aggressive behaviour. Items such as "*Exceeded speed limits on the motorway*" load on this factor.

This factor correlates with both the previous factors.

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	7.995	34.762	34.762	7.043
2	3.582	15.575	50.338	3.161
3	1.991	8.655	58.993	5.034
4	1.159	5.039	64.032	
5	.958	4.165	68.197	
6	.857	3.728	71.924	
7	.771	3.350	75.275	
8	.719	3.128	78.403	
9	.704	3.062	81.464	
10	.567	2.464	83.928	
11	.507	2.202	86.130	
12	.468	2.037	88.167	
13	.428	1.863	90.029	
14	.391	1.702	91.731	
15	.327	1.422	93.153	
16	.306	1.330	94.483	
17	.259	1.128	95.611	
18	.240	1.045	96.656	

19	.219	.953	97.608
20	.171	.742	98.350
21	.150	.654	99.005
22	.120	.520	99.525
23	.109	.475	100.000

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

	Factor		
	VIOLATIONS	CAUTION	SPEED
I_1			0.691
I_2			0.568
I_3			0.801
I_4			0.890
I_5			0.669
I_6	0.599		
I_7	0.414		
I_8	0.720		
I_9	0.638		
I_10	0.700		
I_11	0.651		
I_12	0.928		
I_13		0.545	
I_14		0.534	
I_15		0.842	
I_16		0.875	
I_17	0.599		
I_18	0.700		
I_19	0.846		
I_20		0.574	
I_21		0.642	
I_22		0.525	
I_23	0.854		

Table I.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	.060	.466
2	.060	1.000	.036
3	.466	.036	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, 0.815, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(231)=1616.1$, $p<.000$, 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 four-factor solution that accounted for the 60.04% 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 “Permissive attitude toward alcohol”, accounting for by the 12.54% of the common variance) refers to driving under the effect of alcohol. Items such as “*To drive after drinking, even if you are not sure that you sobered up*” load on this factor.

The second factor (labelled “Speed”, accounting for by the 23.71% of the common variance) refers to speeding. Items such as “*You exceed the speed limits by 10 Km/h*” load on this factor.

The third factor (labelled “Caution”, accounting for by the 16.55% of the common variance) refers to the caution when required by the traffic conditions. Items such as “*You slow down when approaching a danger sign*” load on this factor.

The fourth (labelled “Violations”, accounting for by the 26.52% of the common variance) refers to violations of the rules. Items such as “*To drive without keeping a safe distance.*” load on this factor.

Between-factors correlations are shown in Table J.3.

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	7.504	34.107	34.107	2.761
2	3.625	16.476	50.584	5.217
3	1.877	8.531	59.114	3.642
4	1.392	6.327	65.442	5.835
5	1.064	4.837	70.279	
6	.867	3.940	74.219	
7	.791	3.597	77.816	
8	.692	3.144	80.960	
9	.605	2.752	83.711	
10	.581	2.641	86.352	
11	.402	1.825	88.178	
12	.382	1.735	89.913	
13	.360	1.637	91.550	
14	.325	1.478	93.028	
15	.294	1.338	94.365	

16	.284	1.292	95.657
17	.238	1.081	96.738
18	.197	.894	97.632
19	.176	.799	98.432
20	.129	.585	99.017
21	.116	.528	99.544
22	.100	.456	100.000

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

	Factor			
	Permissive attitude toward alcohol	Speed	Caution	Violations
J_1		0.730		
J_2		0.731		
J_3		0.883		
J_4		0.879		
J_5		0.676		
J_6				0.681
J_7				0.558
J_8				0.758
J_9				0.605
J_10				0.551
J_11				0.667
J_12				0.882
J_13			0.540	
J_14			0.672	
J_15			0.628	
J_16			0.701	
J_17	0.933			
J_18	0.669			
J_19			0.783	
J_20			0.832	
J_21			0.622	
J_22				0.563

Table J.3. Factor Correlation Matrix

Factor	1	2	3	4
1	1.000	.225	.028	.360
2	.225	1.000	.130	.470
3	.028	.130	1.000	.154
4	.360	.470	.154	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, 0.85, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(36)=764.66$, $p<.000$, 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 single factor solution that accounted for the 50.98% 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.

The single factor (labelled “Experiences with alcohol related issues”, accounting for by the 50.98% of the common variance) refers to having had experiences with driving under the effect of alcohol, but also with prevention behaviours, such as being the designated driver. All the items included in the scale load on this factor.

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	5.055	56.162	56.162	50.978
2	.975	10.839	67.001	
3	.771	8.563	75.564	
4	.678	7.530	83.094	
5	.567	6.295	89.389	
6	.371	4.117	93.507	
7	.305	3.387	96.894	
8	.149	1.651	98.544	
9	.131	1.456	100.00	

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

	Factor
	Experiences with alcohol related issues
K_1	.732
K_2	.788
K_3	.526
K_4	.621
K_5	.793
K_6	.661
K_7	.709
K_8	.774
K_9	.776

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, 0.819, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(190)=1271.84$, $p<.000$, 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 44.23% 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 26.26% 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 19.08% 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. This factor slightly correlates negatively with the “Positive effects” factor (Table L.3).

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	6.022	30.110	30.110
2	3.556	17.780	47.890	3.817
3	1.627	8.136	56.026	
4	1.275	6.375	62.401	
5	1.005	5.026	67.427	
6	.917	4.584	72.011	
7	.713	3.565	75.576	
8	.692	3.460	79.036	
9	.597	2.983	82.019	
10	.526	2.632	84.651	
11	.487	2.433	87.084	
12	.456	2.282	89.366	
13	.405	2.025	91.391	
14	.351	1.757	93.148	
15	.306	1.528	94.676	
16	.288	1.440	96.116	
17	.223	1.117	97.233	
18	.212	1.059	98.292	
19	.195	.975	99.267	
20	.147	.733	100.000	

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

	Factor	
	Positive effects	Negative effects
L_1	0.688	-0.353
L_2		0.679
L_3		0.788
L_4	0.730	
L_5	0.684	
L_6	0.546	
L_7		0.605
L_8	0.559	
L_9	0.367	
L_10	0.685	
L_11		0.713
L_12	0.295	
L_13		0.740
L_14		0.534
L_15		0.570
L_16	0.481	
L_17	0.578	
L_18	0.612	
L_19	0.794	
L_20	0.780	

Table L.3. Factor Correlation Matrix

Factor	1	2
1	1.000	-.105
2	-.105	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=0.10, $F_{40,138}=7.59$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,88}=25.35$, $p<.001$) and a significant interaction between group and subscale ($F_{38,1672}= 7.59$, $p<.001$), 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 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 anxiety, and have more direct experiences of driving under the effect of alcohol.
2. **SPEEDING DRIVERS.** People in this group are especially characterized by high scores on speeding subscales, compared to safe drivers. They are not tolerant toward traffic code violations, and have rather high scores on sensation seeking and egocentrism. Similarly to the safe drivers, they show low scores on moral disengagement. However, they also seem to be not aware of the negative effects of alcohol upon driving.
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 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 and speeding 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). Also, the three groups do not differ in terms of how much angry their parents would be for their reckless driving (Figure 4). Finally, respondents in three groups are not different in terms of their friends support to their reckless driving behaviour (Figure 3).

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

	SAFE drivers			RISKY drivers			SPEEDING drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Negative attitude toward alcohol/drugs (rev)	-0.40	0.14	42.00	-0.03	0.19	23.00	0.40	0.18	26.00
Tolerance to violations	-0.44	0.11	42.00	0.96	0.15	23.00	-0.41	0.14	26.00
Speeding (rev)	0.25	0.13	42.00	-0.36	0.18	23.00	0.03	0.17	26.00
Internal Locus of Control	-0.41	0.11	42.00	0.55	0.15	23.00	-0.18	0.14	26.00
External Locus of Control	-0.37	0.14	42.00	0.36	0.19	23.00	-0.08	0.18	26.00
Attention-related LOC	0.20	0.14	42.00	0.23	0.18	23.00	-0.10	0.17	26.00
Insult-related rage	0.08	0.14	42.00	-0.77	0.19	23.00	0.33	0.18	26.00
Obstacle-related rage	-0.37	0.14	42.00	0.21	0.19	23.00	0.08	0.18	26.00
Violation-related rage	0.10	0.12	42.00	0.03	0.17	23.00	-0.03	0.16	26.00
Egocentrism	-0.18	0.14	42.00	0.14	0.19	23.00	-0.17	0.18	26.00
Anxiety	0.02	0.14	42.00	0.27	0.18	23.00	-0.25	0.17	26.00
Sensation Seeking	-0.34	0.15	42.00	0.21	0.20	23.00	0.02	0.19	26.00
Altruism	-0.02	0.14	42.00	0.07	0.19	23.00	-0.01	0.18	26.00
Violations	-0.70	0.10	42.00	0.51	0.14	23.00	0.26	0.13	26.00
Slowing	0.16	0.14	42.00	-0.04	0.19	23.00	-0.36	0.18	26.00
Speeding	-0.71	0.11	42.00	0.63	0.15	23.00	0.23	0.14	26.00
Experience with alcohol related issues	-0.61	0.11	42.00	0.22	0.15	23.00	0.15	0.14	26.00
Alcohol positive effects	-0.72	0.11	42.00	0.50	0.14	23.00	0.22	0.14	26.00
Alcohol negative effects	0.42	0.13	42.00	0.08	0.17	23.00	-0.40	0.16	26.00
Moral disengagement	-0.64	0.11	42.00	0.94	0.15	23.00	-0.24	0.14	26.00

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

	SAFE drivers	RISKY drivers	Significance
	N=42	N=23	
Negative attitude toward alcohol/drugs (rev)	-0.40	-0.03	ns
Tolerance to violations	-0.44	0.96	p<.001
Speeding (rev)	0.25	-0.36	ns
Internal Locus of Control	-0.41	0.55	p<.001
External Locus of Control	-0.37	0.36	ns
Attention-related LOC	0.20	0.23	ns
Insult-related rage	0.08	-0.77	ns
Obstacle-related rage	-0.37	0.21	ns
Violation-related rage	0.10	0.03	ns
Egocentrism	-0.18	0.14	ns
Anxiety	0.02	0.27	ns
Sensation Seeking	-0.34	0.21	ns
Altruism	-0.02	0.07	ns
Violations	-0.70	0.51	p<.001
Slowing	0.16	-0.04	ns
Speeding	-0.71	0.63	p<.001
Experience with alcohol related issues	-0.61	0.22	p<.001
Alcohol positive effects	-0.72	0.50	p<.001
Alcohol negative effects	0.42	0.08	ns
Moral disengagement	-0.64	0.94	p<.001

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

	SAFE drivers	SPEEDING drivers	Significance
	N=42	N=26	
Negative attitude toward alcohol/drugs (rev)	-0.40	0.40	p<.001
Tolerance to violations	-0.44	-0.41	ns
Speeding (rev)	0.25	0.03	ns
Internal Locus of Control	-0.41	-0.18	ns
External Locus of Control	-0.37	-0.08	ns
Attention-related LOC	0.20	-0.10	ns
Insult-related rage	0.08	0.33	ns
Obstacle-related rage	-0.37	0.08	ns
Violation-related rage	0.10	-0.03	ns
Egocentrism	-0.18	-0.17	ns
Anxiety	0.02	-0.25	ns
Sensation Seeking	-0.34	0.02	ns
Altruism	-0.02	-0.01	ns
Violations	-0.70	0.26	p<.001
Slowing	0.16	-0.36	ns
Speeding	-0.71	0.23	p<.001

Experience with alcohol related issues	-0.61	0.15	p<.001
Alcohol positive effects	-0.72	0.22	p<.001
Alcohol negative effects	0.42	-0.40	p<.001
Moral disengagement	-0.64	-0.24	ns

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

	RISKY drivers N=23	SPEEDING drivers N=26	Significance
Negative attitude toward alcohol/drugs (rev)	-0.03	0.40	ns
Tolerance to violations	0.96	-0.41	p<.001
Speeding (rev)	-0.36	0.03	ns
Internal Locus of Control	0.55	-0.18	p<.001
External Locus of Control	0.36	-0.08	ns
Attention-related LOC	0.23	-0.10	ns
Insult-related rage	-0.77	0.33	p<.001
Obstacle-related rage	0.21	0.08	ns
Violation-related rage	0.03	-0.03	ns
Egocentrism	0.14	-0.17	ns
Anxiety	0.27	-0.25	ns
Sensation Seeking	0.21	0.02	ns
Altruism	0.07	-0.01	ns
Violations	0.51	0.26	ns
Slowing	-0.04	-0.36	ns
Speeding	0.63	0.23	ns
Experience with alcohol related issues	0.22	0.15	ns
Alcohol positive effects	0.50	0.22	ns
Alcohol negative effects	0.08	-0.40	ns
Moral disengagement	0.94	-0.24	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	17.00	0.24	18
	Risky drivers	17.00	0.22	21
	Speeding drivers	16.75	0.22	20
Females	Safe drivers	17.17	0.21	24
	Risky drivers	17.00	0.71	2
	Speeding drivers	16.83	0.41	6

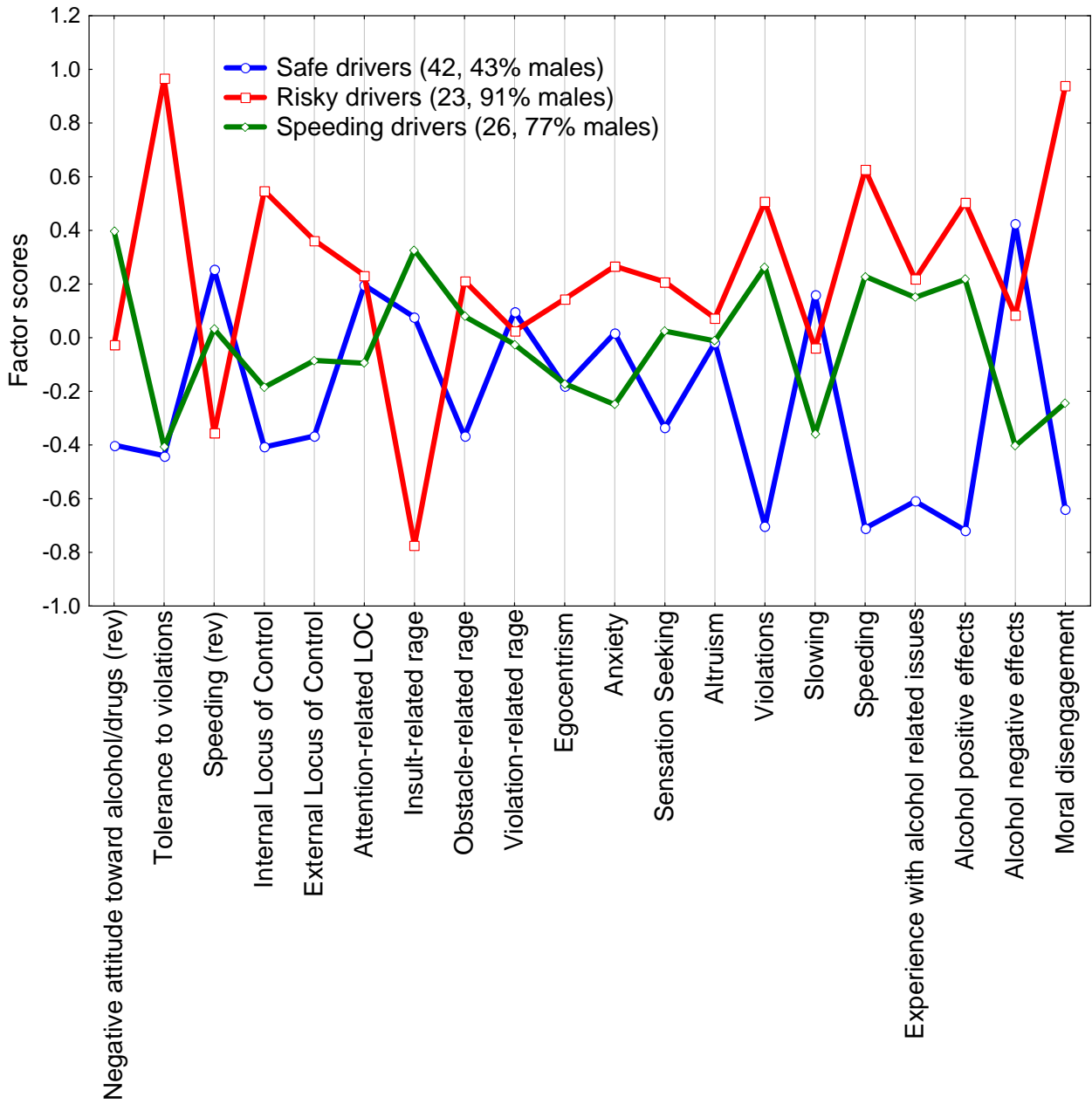
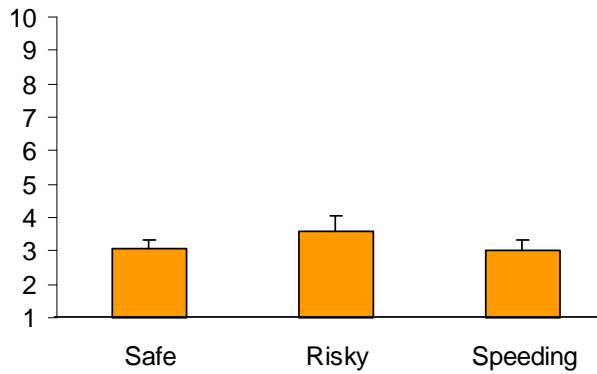


Figure 1. Average scores for each group on the subscales of the questionnaire.

C.1 How would you assess your risk of having a road accident as against the people of your age (10=very high)?



C.2 How much are you worried about this possibility (10=very worried)?

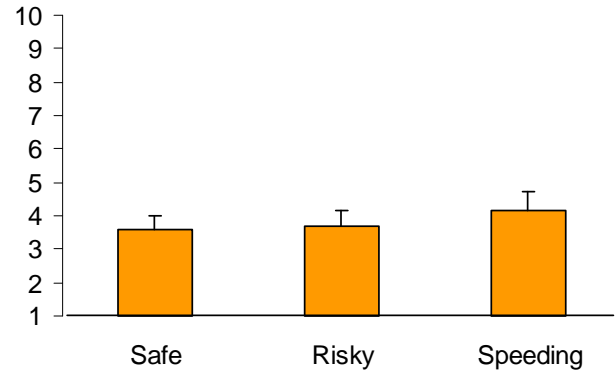
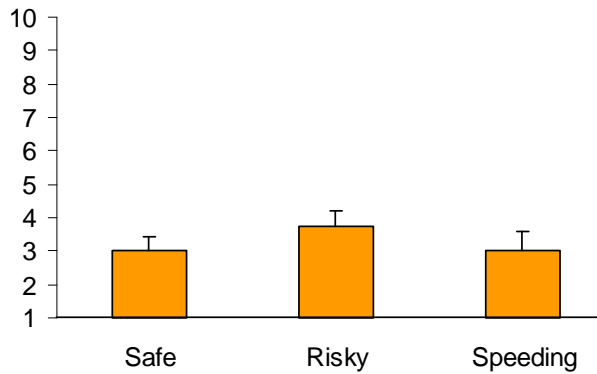


Figure 2. Average scores for each group on items concerning risk perception.

C.3 How much your friends would approve your reckless driving (10=totally approve)?



C.4 How much your friends would encourage your reckless driving (10=totally approve)?

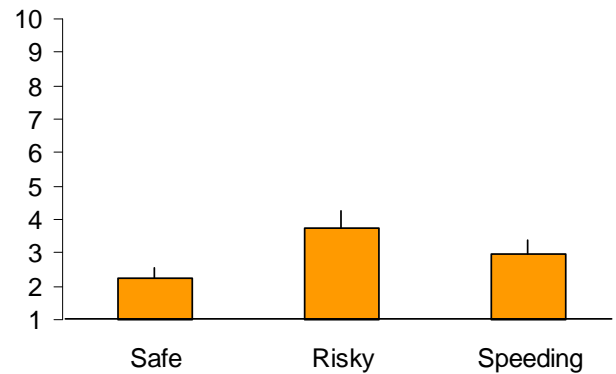
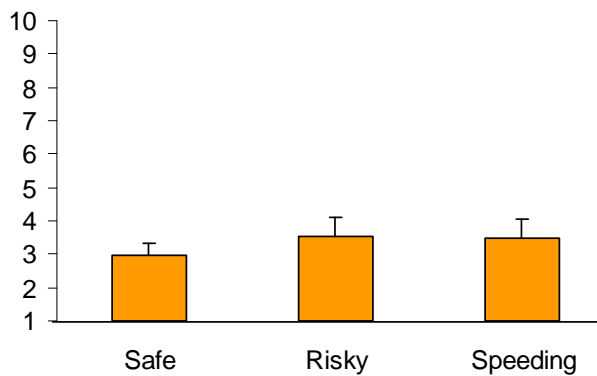


Figure 3. Average scores for each group on items concerning friends' attitude.

C.5 How angry would your parents get for your reckless driving (10=not at all)?



C.6 Would your parents punish you for your reckless driving (10=not at all)?

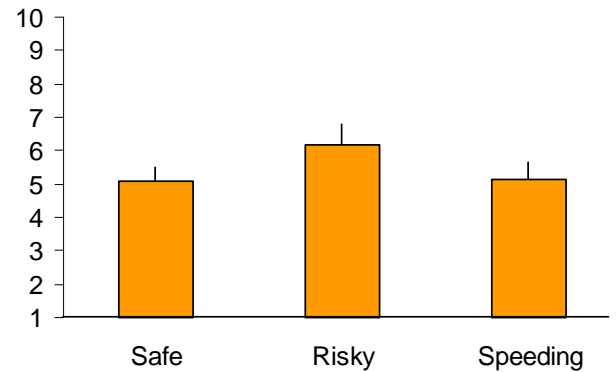


Figure 4. Average scores for each group on items concerning parents' attitude.

NON DRIVERS (QUESTIONNAIRE SECTION 3)

Sample description

A total of 252 people answered the Section 3 of the questionnaire. Males were 133 (52.8% of the total sample) and females were 119 (47.2% of the total sample). Their mean age was 17.3 years (standard deviation 1.50), 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).

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, 0.839, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(153)=1728.305$, $p<.000$, 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 48.756% 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 "Negative attitude towards drugs and alcohol", accounting for by the 18.04% of the common variance) refer to the attitude toward driving under the effects of substances. Items such as "*I would never drive after drinking alcoholic drinks*" and "*I would never drive under the influence of narcotic drugs*" load on this factor.

The second factor (labelled "Tolerance toward violations", accounting for by the 23.09% of the common variance) refers to an attitude toward violations of traffic rules. Items such as "*To keep traffic smooth-flowing you should ignore many of the road traffic rules*" load on this factor. The third factor (labelled "Negative attitude toward speed" (reversed), accounting for by the 12.87% of the common variance) refers to the attitude to exceed speed limits. 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.

Factors are slightly correlated (Table M.3).

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

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	4.902	27.235	27.235	3.248
2	3.549	19.714	46.950	4.157
3	1.371	7.614	54.564	2.318
4	1.071	5.950	60.514	
5	.959	5.330	65.844	
6	.800	4.442	70.286	
7	.728	4.044	74.330	
8	.665	3.694	78.024	
9	.657	3.648	81.672	
10	.607	3.373	85.045	
11	.517	2.874	87.918	
12	.452	2.513	90.431	
13	.411	2.285	92.717	
14	.341	1.893	94.610	
15	.313	1.738	96.347	
16	.257	1.427	97.775	
17	.232	1.287	99.061	
18	.169	.939	100.000	

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

	Factors		
	Negative attitude toward drugs and alcohol	Tolerance toward violations of traffic rules	Negative Attitude toward Speed (reversed)
M_1		0.534	
M_2		0.710	
M_3	0.203		
M_4		0.609	
M_5		0.576	
M_6		0.740	
M_7		0.778	
M_8		0.538	
M_9		0.543	
M_10		0.575	
M_11	0.120		
M_12			-0.844
M_13			-0.805
M_14	0.481		
M_15	0.837		
M_16	0.829		
M_17	0.906		
M_18	0.863		

Table M.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	.069	.154
2	.069	1.000	-.324
3	.154	-.324	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, 0.850, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(435)=2754.58, p<.000$, 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 32.69% 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 (labeled “External Locus of Control”, accounting for by the 21.98% 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 second factor (labeled “Internal Locus of Control”, accounting for by the 16.87% 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. This factor positively correlates to the first factor (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	7.759	25.862	25.862	6.595
2	2.920	9.734	35.595	5.063
3	2.651	8.837	44.432	
4	1.555	5.182	49.615	
5	1.406	4.685	54.300	
6	1.170	3.900	58.200	
7	1.024	3.414	61.614	
8	.927	3.090	64.703	
9	.835	2.783	67.486	
10	.793	2.642	70.128	
11	.768	2.560	72.688	
12	.724	2.412	75.100	
13	.654	2.179	77.279	
14	.620	2.067	79.346	
15	.603	2.011	81.357	
16	.550	1.835	83.192	
17	.526	1.754	84.945	
18	.517	1.722	86.668	
19	.463	1.543	88.211	

20	.442	1.472	89.683
21	.433	1.444	91.128
22	.402	1.340	92.468
23	.369	1.230	93.698
24	.347	1.157	94.855
25	.331	1.103	95.959
26	.308	1.028	96.986
27	.263	.876	97.862
28	.244	.814	98.675
29	.214	.713	99.388
30	.184	.612	100.000

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

	Factor	
	External LOC	Internal LOC
N_1	0.433	
N_2	0.294	
N_3	0.353	
N_4	0.411	
N_5	0.591	
N_6	0.496	
N_7	0.647	
N_8	0.729	
N_9	0.589	
N_10	0.424	
N_11	0.452	
N_12	0.508	
N_13		0.513
N_14		0.446
N_15		0.444
N_16	0.519	
N_17	0.579	
N_18		0.615
N_19		0.635
N_20	0.565	
N_21		0.558
N_22		0.692
N_23		0.352
N_24	0.538	
N_25		0.771

N_26		0.511
N_27		0.564
N_28	0.745	
N_29		0.300
N_30	0.695	

Table N.3. Factor correlation matrix

Factor	1	2
1	1.000	.403
2	.403	1.000

Scale P, Rage during driving.

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, 0.881, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(91)=1135.105, p<.000$, 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 47.259% 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 “Obstacle-related rage”, accounting for by the 31.1% 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 “Tolerance toward aggressive behaviour of the others” (reversed), accounting for by the 19.1% of the common variance) refers to the absence of rage reactions due to the aggressive behaviour of other drivers. Items such as “*Somebody makes an obscene gesture for your way of driving*” load on this factor.

The third factor (labelled “Tolerance toward Violations of the others” (reversed), accounting for by the 19.1% of the common variance) refers to the absence of 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 factors are however correlated (Table P.3).

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

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total
1	5.422	38.728	38.728	4.355
2	1.445	10.322	49.051	2.674
3	1.025	7.319	56.370	2.674
4	.918	6.558	62.928	
5	.814	5.813	68.741	
6	.749	5.349	74.090	
7	.625	4.466	78.557	
8	.558	3.988	82.544	
9	.535	3.823	86.367	
10	.490	3.498	89.865	
11	.421	3.010	92.875	
12	.366	2.613	95.489	
13	.354	2.529	98.018	
14	.277	1.982	100.000	

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

	Factor		
	Obstacle-related rage	Tolerance toward aggressive behaviour of the others	Tolerance toward Violations of the others
P_1			-0.312
P_2	0.460		
P_3			-0.861
P_4			-0.400
P_5	0.605		
P_6			-0.418
P_7	0.720		
P_8	0.664		
P_9		-0.818	
P_10		-0.693	
P_11	0.570		
P_12	0.640		
P_13	0.567		
P_14	0.686		

Table P.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.399	-.418
2	-.399	1.000	.438
3	-.418	.438	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, 0.821, and factorability of the correlation matrix, Bartlett's test of sphericity $\chi^2(666)=3566.81, p<.000$, 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 six-factor solution that accounted for the 48.46% of the total variance. Table R.1 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 13.45% of the common variance) refers to Altruism. Items such as "*I try to be kind with all the persons I meet.*" load on this factor.

The second factor (labelled "Impulsivity" (reversed), accounting for by the 8.17% of the common variance) refers to Impulsivity. Items such as "*I am not considered susceptible or irritable.*" load on this factor.

The third factor (labelled "Sensation seeking", accounting for by the 11.63% 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 "Stability", accounting for by the 6.93% of the common variance) refers to being calm and reflexive. Items such as "*I tend to be lazy*" load on this factor.

The fifth factor (labelled "Egocentrism", accounting for by the 7.01% of the common variance) refers to Egoism. Items such as "*Some people think I am egoist and egocentric*" load on this factor.

The sixth factor (labelled "Anxiety", accounting for by the 12.56% of the common variance) refers to Anxiety. Items such as "*I easily panic*" load on this factor. Correlation between Factors are shown in 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	7.260	19.620	19.620	4.976
2	4.351	11.759	31.379	3.024
3	3.630	9.812	41.191	4.305
4	1.912	5.168	46.359	2.563
5	1.605	4.338	50.697	2.597
6	1.497	4.045	54.742	4.648
7	1.153	3.116	57.858	
8	1.085	2.933	60.791	
9	1.062	2.871	63.662	
10	.955	2.580	66.242	
11	.903	2.439	68.682	
12	.831	2.247	70.928	

13	.760	2.054	72.983
14	.737	1.991	74.974
15	.698	1.887	76.861
16	.623	1.683	78.544
17	.613	1.658	80.202
18	.583	1.575	81.777
19	.573	1.550	83.327
20	.553	1.495	84.822
21	.528	1.428	86.250
22	.491	1.328	87.578
23	.472	1.276	88.854
24	.454	1.226	90.080
25	.426	1.151	91.231
26	.372	1.004	92.235
27	.361	.976	93.211
28	.330	.891	94.102
29	.310	.838	94.940
30	.301	.813	95.752
31	.278	.751	96.504
32	.266	.719	97.223
33	.236	.639	97.862
34	.219	.593	98.454
35	.216	.584	99.038
36	.192	.519	99.557
37	.164	.443	100.000

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

	Factor					
	Altruism	Impulsivity (reversed)	Sensation Seeking	Stability	Egocentris m	Anxiety
R_1		-0.275				
R_2						0.421
R_3					0.798	
R_4			0.811			
R_5						0.722
R_6		-0.471				
R_7	0.668					

R_8					0.372	
R_9		-0.305				
R_10			0.616			
R_11					0.506	
R_12			0.670			
R_13						0.640
R_14		-0.248				
R_15	0.671					
R_16						0.454
R_17		-0.529				
R_18						
R_19					0.313	
R_20					0.344	
R_21			0.811			
R_22						0.436
R_23		-0.739				
R_24	0.430					
R_25			0.451			
R_26		-0.406				
R_27	0.572					0.535
R_28						0.378
R_29						0.719
R_30						0.804
R_31	0.809					
R_32			0.456			
R_33	0.717					
R_34					-0.867	
R_35	0.655					
R_36	0.647					
R_37					-0.608	

Table R.3. Factor Correlation Matrix

	1	2	3	4	5	6
1	1.000	-.238	.157	-.082	-.022	.244
2	-.238	1.000	-.251	.077	-.074	.069
3	.157	-.251	1.000	-.242	.150	.099
4	-.082	.077	-.242	1.000	-.123	-.194
5	-.022	-.074	.150	-.123	1.000	.234
6	.244	.069	.099	-.194	.234	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, 0.881, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(231)=3226.419$, $p<.000$, 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 58.83% 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 “Violations”, accounting for by the 31.97% of the common variance) refers to violations of the rules. Items such as *“To drive without keeping a safe distance.”* load on this factor.

The second factor (labelled “Speed Limits”, accounting for by the 16.81% of the common variance) refers to driving within speed limits. Items such as *“You slow down when approaching a danger sign”* load on this factor.

The third factor (labelled “Caution” (reversed), accounting for by the 22.14% of the common variance) refers to the caution when required by the traffic conditions. Items such as *“You exceed the speed limits by 10 Km/h”* load on this factor. This factor negatively correlates to the first factor (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	8.024	36.471	36.471	7.035
2	3.969	18.043	54.514	3.699
3	1.839	8.357	62.872	4.871
4	.825	3.749	66.620	
5	.812	3.689	70.310	
6	.757	3.443	73.752	
7	.698	3.171	76.924	
8	.653	2.968	79.891	
9	.586	2.662	82.553	
10	.534	2.428	84.981	
11	.443	2.015	86.996	
12	.396	1.802	88.798	
13	.391	1.778	90.576	
14	.343	1.557	92.133	
15	.303	1.378	93.511	
16	.281	1.279	94.789	

17	.254	1.154	95.943
18	.240	1.089	97.033
19	.224	1.018	98.051
20	.171	.779	98.830
21	.147	.667	99.498
22	.111	.502	100.000

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

	Factor		
	Violations	Speed	Caution (reversed)
S_1			-0.688
S_2			-0.754
S_3			-0.811
S_4			-0.788
S_5	0.314		-0.563
S_6	0.608		-0.287
S_7	0.606		
S_8	0.742		
S_9	0.824		
S_10	0.608		
S_11	0.657		
S_12	0.875		
S_13	0.325	0.438	
S_14		0.634	
S_15		0.775	
S_16		0.766	
S_17	0.729		
S_18	0.798		
S_19		0.813	
S_20		0.812	
S_21		0.712	
S_22	0.743		

Table S.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	-.057	-.464
2	-.057	1.000	-.025
3	-.464	-.025	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, 0.831, and factorability of the correlation matrix, Bartlett’s test of sphericity $\chi^2(190)=2002.4$, $p<.000$, 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 49.78% 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 “Cognitive negative effects”, accounting for by the 8.2% of the common variance) refers to the supposed negative effects of alcohol assumption on reactions times. Items such as “*Alcohol slows down reaction time*” load on this factor. The second factor (labelled “Positive effects”, accounting for by the 25.09% of the common variance) refers to the supposed positive effects of alcohol assumption on driving abilities. Items such as “*Alcohol increases concentration capacity*” load on this factor. The third factor (labelled “Negative effects”, accounting for by the 18.03% of the common variance) refers to negative effects of alcohol assumption on your driving abilities. Items such as “*Alcohol decreases the level of attention*” load on this factor. Factors are not correlated (Table T.3).

Table T.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	5.771	28.855	28.855	1.639
2	3.475	17.374	46.229	5.018
3	1.674	8.370	54.600	3.607
4	1.148	5.741	60.341	
5	.922	4.611	64.952	
6	.880	4.399	69.351	
7	.720	3.598	72.949	
8	.681	3.405	76.354	
9	.615	3.076	79.431	
10	.574	2.870	82.301	
11	.522	2.608	84.909	
12	.499	2.497	87.406	
13	.459	2.297	89.703	
14	.410	2.051	91.754	
15	.366	1.828	93.582	
16	.318	1.589	95.171	

17	.313	1.563	96.734
18	.288	1.442	98.176
19	.222	1.110	99.286
20	.143	.714	100.000

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

	Factor		
	Cognitive negative effects	Positive effects	Negative effects
T_1		0.708	
T_2			0.739
T_3			0.801
T_4		0.654	
T_5		0.726	
T_6		0.670	
T_7			0.511
T_8		0.613	
T_9		0.513	
T_10		0.652	
T_11	0.954		
T_12	-0.772		
T_13			0.816
T_14			0.621
T_15			0.722
T_16		0.522	
T_17		0.406	
T_18		0.746	
T_19		0.629	
T_20		0.598	

Table T.3. Factor Correlation Matrix

Factor	1	2	3
1	1.000	.146	.146
2	.146	1.000	1.000
3	1.000	.146	.146

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=0.12, $F_{36,320}=16.22$, $p<.0001$). A further factorial analysis of variance on the subscales scores yielded a significant difference among the three groups ($F_{2,177}=33.16$, $p<.001$) and a significant interaction between group and subscale ($F_{34,3009}= 19.07$, $p<.001$), 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 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 egocentrism.
5. **ANGRY/ANXIOUS DRIVERS.** People in this group have a similar profile as those in the risky drivers group, but seem to be especially characterized by rage reactions and anxiety.
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 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 and angry/anxious 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 group feel to be supported and encouraged by their friends more than respondents in the other two groups (Figure 3). The three groups do not differ as far as their parents' reaction is concerned (Figure 4).

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

	ANGRY/ANXIOUS drivers			SAFE drivers			RISKY drivers		
	Mean	Std.Err.	N	Mean	Std.Err.	N	Mean	Std.Err.	N
Negative attitude toward alcohol/drugs	0.37	0.10	76	-0.01	0.13	47	-0.41	0.12	57
Tolerance toward violations	0.07	0.09	76	-0.77	0.11	47	0.62	0.10	57
Speeding	0.21	0.09	76	0.51	0.11	47	-0.67	0.10	57
External LOC	0.16	0.09	76	-0.71	0.11	47	0.50	0.10	57
Internal LOC	0.27	0.10	76	-0.33	0.13	47	-0.01	0.12	57
Obstacle-related rage	0.33	0.09	76	-0.71	0.12	47	0.04	0.10	57
Insult-related rage (rev)	-0.42	0.09	76	0.28	0.12	47	0.26	0.11	57
Violation-related rage (rev)	-0.39	0.09	76	0.31	0.12	47	0.25	0.10	57
Altruism	0.23	0.10	76	0.36	0.13	47	-0.25	0.11	57
Impulsivity	0.21	0.10	76	-0.07	0.13	47	-0.27	0.12	57
Sensation-seeking	-0.06	0.10	76	-0.40	0.12	47	0.38	0.11	57
Stability	-0.29	0.10	76	0.64	0.12	47	-0.11	0.11	57
Egocentrism	-0.10	0.10	76	-0.50	0.12	47	0.37	0.11	57
Anxiety	0.35	0.10	76	-0.57	0.13	47	0.07	0.12	57
Alcohol negative effects (cognition)	0.27	0.11	76	-0.01	0.14	47	-0.14	0.13	57
Alcohol positive effects	-0.29	0.07	76	-0.65	0.09	47	0.84	0.09	57
Alcohol negative effects	0.44	0.09	76	-0.04	0.11	47	-0.32	0.10	57
Moral disengagement	-0.02	0.09	76	-0.83	0.11	47	0.67	0.10	57

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

	ANGRY/ANXIOUS drivers	SAFE drivers	Significance
	N=76	N=47	
Negative attitude toward alcohol/drugs	0.37	-0.01	ns
Tolerance toward violations	0.07	-0.77	p<.001
Speeding	0.21	0.51	ns
External LOC	0.16	-0.71	p<.001
Internal LOC	0.27	-0.33	p<.001
Obstacle-related rage	0.33	-0.71	p<.001
Insult-related rage (rev)	-0.42	0.28	p<.001
Violation-related rage (rev)	-0.39	0.31	p<.001
Altruism	0.23	0.36	ns
Impulsivity	0.21	-0.07	ns
Sensation-seeking	-0.06	-0.40	ns
Stability	-0.29	0.64	p<.001
Egocentrism	-0.10	-0.50	ns
Anxiety	0.35	-0.57	p<.001

Alcohol negative effects (cognition)	0.27	-0.01	ns
Alcohol positive effects	-0.29	-0.65	p<.001
Alcohol negative effects	0.44	-0.04	ns
Moral disengagement	-0.02	-0.83	p<.001

Table 3. Comparison between Alcohol tolerant and Risky drivers on each subscale.

	ANGRY/ANXIOUS drivers N=76	RISKY drivers N=57	Significance
Negative attitude toward alcohol/drugs	0.37	-0.41	p<.001
Tolerance toward violations	0.07	0.62	p<.001
Speeding	0.21	-0.67	p<.001
External LOC	0.16	0.50	ns
Internal LOC	0.27	-0.01	ns
Obstacle-related rage	0.33	0.04	ns
Insult-related rage (rev)	-0.42	0.26	p<.001
Violation-related rage (rev)	-0.39	0.25	p<.001
Altruism	0.23	-0.25	p<.001
Impulsivity	0.21	-0.27	p<.001
Sensation-seeking	-0.06	0.38	ns
Stability	-0.29	-0.11	ns
Egocentrism	-0.10	0.37	ns
Anxiety	0.35	0.07	ns
Alcohol negative effects (cognition)	0.27	-0.14	ns
Alcohol positive effects	-0.29	0.84	p<.001
Alcohol negative effects	0.44	-0.32	p<.001
Moral disengagement	-0.02	0.67	p<.001

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

	SAFE drivers	RISKY drivers	Significance
	N=47	N=57	
Negative attitude toward alcohol/drugs	-0.01	-0.41	ns
Tolerance toward violations	-0.77	0.62	p<.001
Speeding	0.51	-0.67	p<.001
External LOC	-0.71	0.50	p<.001
Internal LOC	-0.33	-0.01	ns
Obstacle-related rage	-0.71	0.04	p<.001
Insult-related rage (rev)	0.28	0.26	ns
Violation-related rage (rev)	0.31	0.25	ns
Altruism	0.36	-0.25	ns
Impulsivity	-0.07	-0.27	ns
Sensation-seeking	-0.40	0.38	p<.001
Stability	0.64	-0.11	p<.001
Egocentrism	-0.50	0.37	p<.001
Anxiety	-0.57	0.07	p<.001
Alcohol negative effects (cognition)	-0.01	-0.14	ns
Alcohol positive effects	-0.65	0.84	p<.001
Alcohol negative effects	-0.04	-0.32	ns
Moral disengagement	-0.83	0.67	p<.001

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

		Mean age	Standard error	N
Males	Angry/anxious drivers	17.16	1.09	31
	Safe drivers	22.28	1.43	18
	Risky drivers	17.03	0.97	39
Females	Angry/anxious drivers	17.33	0.91	45
	Safe drivers	17.52	1.13	29
	Risky drivers	16.83	1.43	18

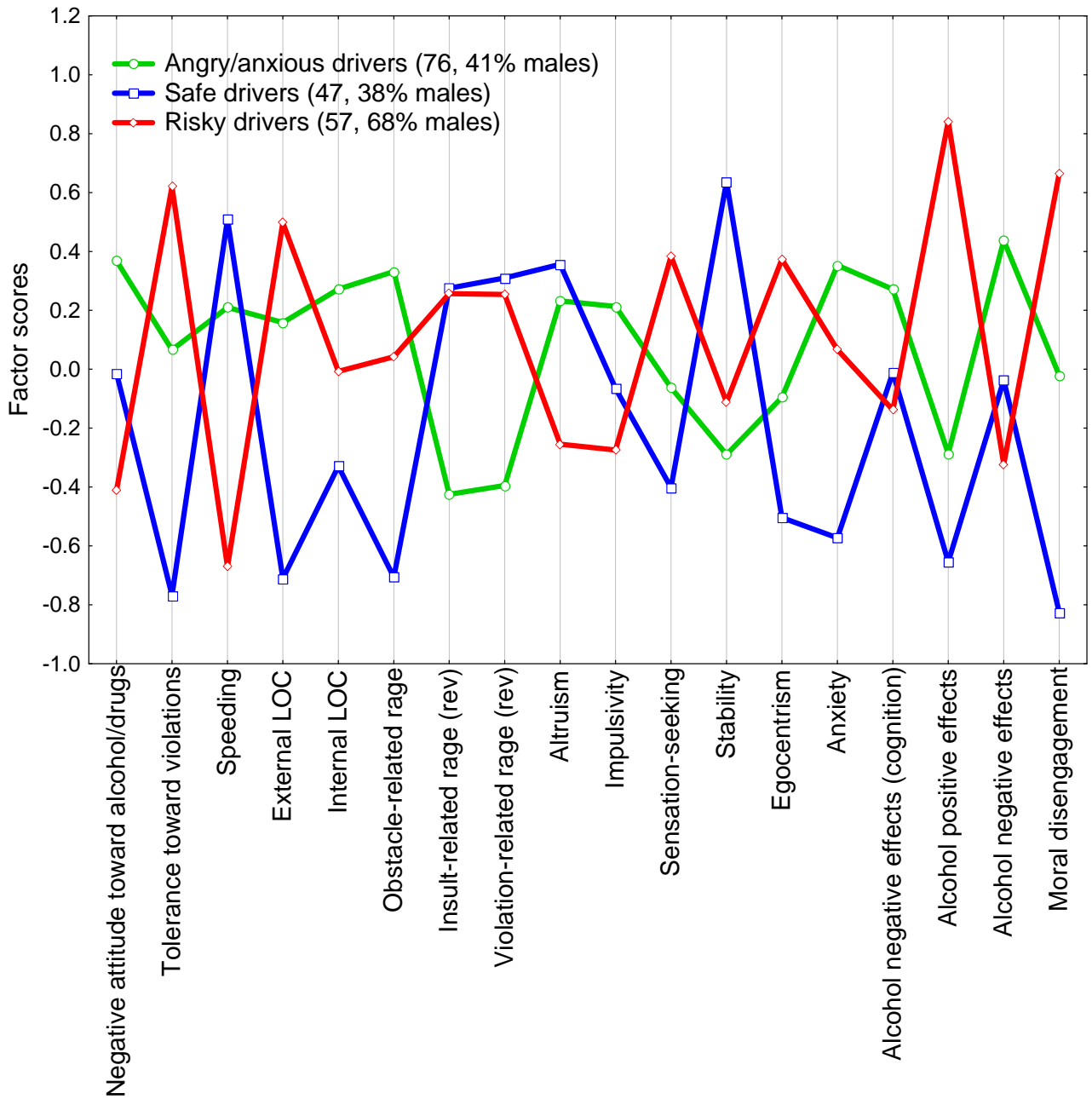


Figure 1. Average scores for each group on the subscales of the questionnaire.

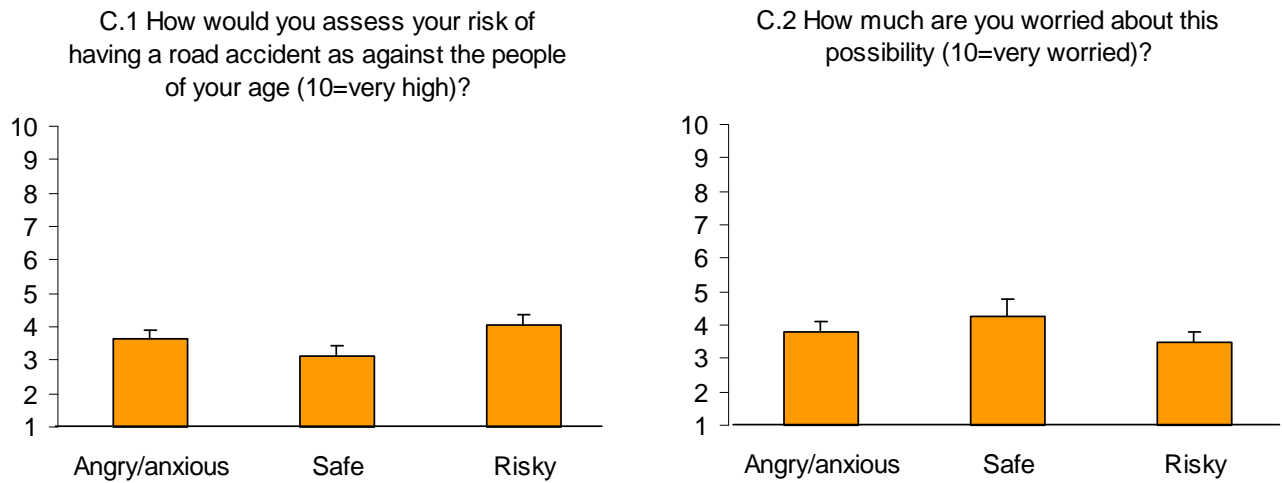


Figure 2. Average scores for each group on items concerning risk perception.

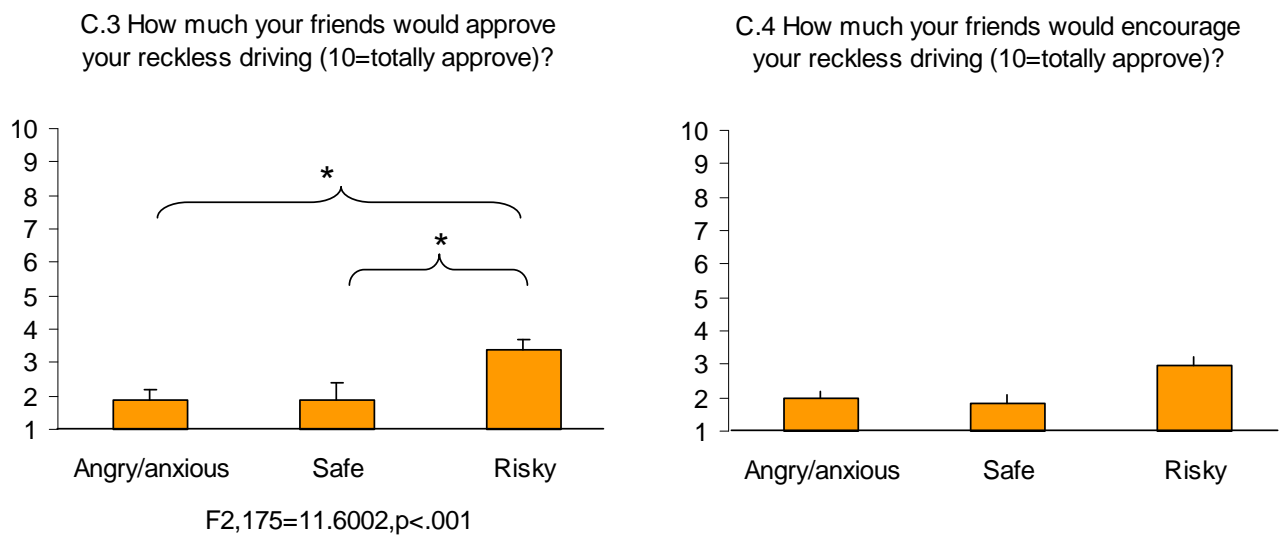


Figure 3. Average scores for each group on items concerning friends' attitude.

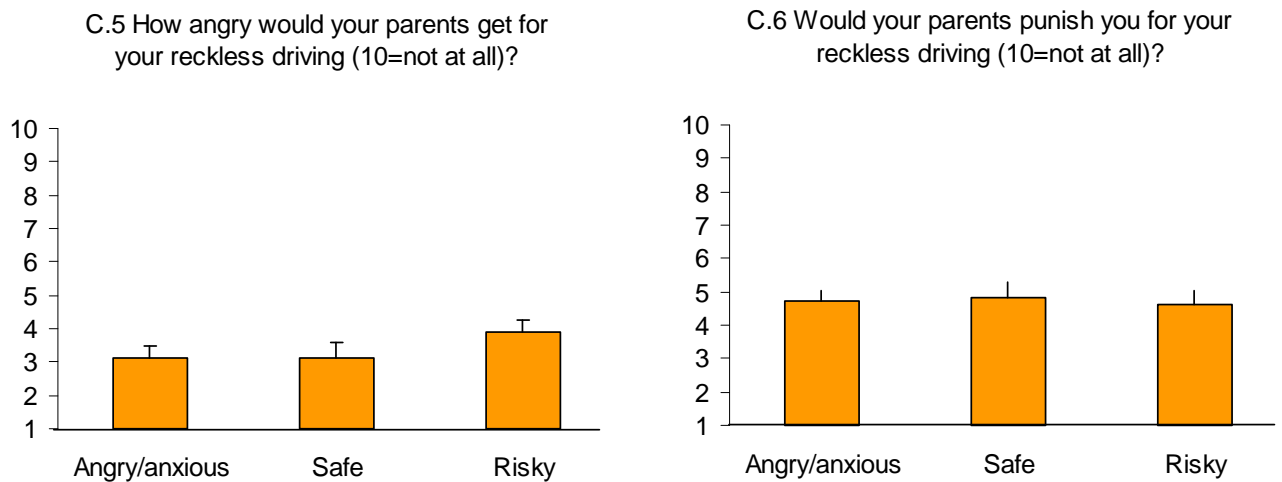


Figure 4. Average scores for each group on items concerning parents' attitude.