Traffic Safety Basic Facts 2011

Cyclists

Introduction

This fact sheet explores the known characteristics of cyclist fatalities. Cyclists, while relatively small in proportion with respect to motorized vehicles, have a high level of vulnerability, creating a significant need to better understand the characteristics specific to this user group. A good insight into the problem provides an opportunity to improve the safety of this cheap, convenient and environmentally safe mode of transport.

Fatality refers to any road user who was killed outright or who died within 30 days as a result of the accident. This fact sheet addresses the fatalities of cyclists and all references to fatalities thus refer to a fatal injury of a cyclist. The term “bicycles” refers only to push bikes. The most recent year or period for which data are available has been analysed.. A note is made of anomalies to the main year.

How Big is the Problem?

In 2009, 2.109 cyclists were killed in road accidents in the EU-19 countries, 6,6% of all fatalities.

Bicycle fatalities make up 6,6% of the total number of road accident fatalities in 2009 in the EU-19[1] countries. In these countries, 2.109 people riding bicycles were killed in traffic accidents in 2009, which is 7% less than the 2.262 bicycle fatalities reported in 2008. In these countries, there was a decrease of 33% during the decade 2000-2009 in the number of bicycle fatalities.

Table 1 shows the number of bicycle fatalities for 27 European Union countries from 2000 up to 2009. For some EU-countries (Bulgaria, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta and Slovakia) data is not (for all years) available. Those countries are not included in the EU-19 total.

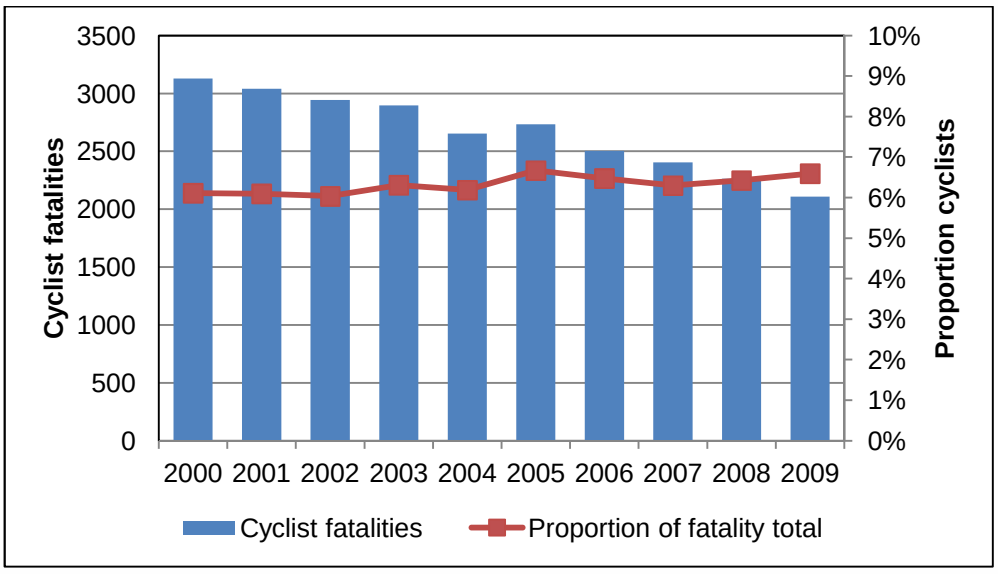
[1] A list of the countries which are within the EU-total can be found at the end of this BFS. Not all tables and figures have the same EU-total.

Table 1: The number of cyclist fatalities by country, 2000-2009[2]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
BE	134	130	105	110	79	71	92	90	86	89
CZ	151	141	160	159	131	115	110	116	93	84
DK	58	56	52	47	53	41	31	54	54	25
DE	659	635	583	616	475	575	486	425	456	462
IE	10	12	18	10	11	10	9	15	13	-
EL	22	29	14	21	24	18	21	16	22	15
ES	84	100	96	78	88	82	72	90	59	57
FR	270	256	223	201	177	180	181	142	148	162
IT	401	366	326	355	322	335	311	352	288	295
LU	1	1	1	0	0	1	0	0	0	2
NL	198	195	169	188	157	151	179	147	145	138
AT	62	55	80	56	58	47	48	37	62	39
PL	-	610	681	647	691	603	509	498	433	371
PT	56	50	58	63	47	48	40	34	42	29
RO	157	145	132	156	130	206	198	179	179	157
SI	26	16	18	0	22	19	15	17	17	18
FI	53	59	53	39	26	43	29	22	18	20
SE	47	43	42	35	27	38	26	33	30	-
UK	131	140	133	116	136	152	147	138	117	104
EU-19	3.129	3.039	2.944	2.897	2.653	2.734	2.504	2.405	2.262	2.109
Yearly reduction		3%	3%	2%	8%	3%	8%	4%	6%	7%
EE	-	-	-	-	-	7	13	13	9	7
CY	-	-	-	-	2	-	-	-	-	-
LV	-	-	-	-	30	31	33	18	15	26
HU	-	-	-	178	183	152	153	158	109	103
MT	-	-	-	-	-	0	0	0	0	0
SK	-	-	-	-	-	56	52	61	46	22

Source: CARE database / EC
Date of query: November 2011

Figure 1: Number and proportion of cyclist fatalities in EU-19 countries between 2000 and 2009[2]



Source: CARE database / EC
Date of query: November 2011

The total number of bicycle fatalities in the EU-19 countries decreased with 33% between 2000 and 2009

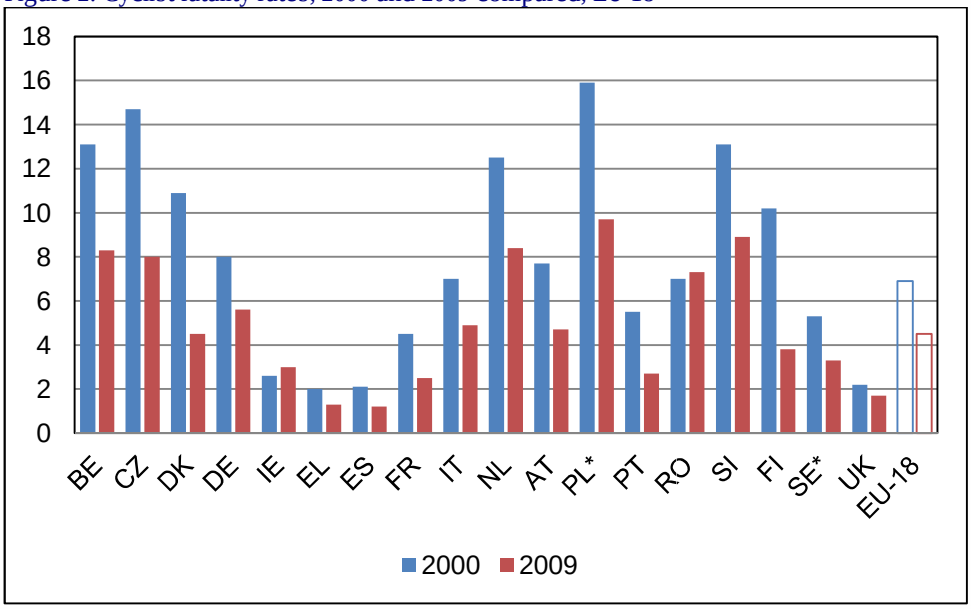
[2] There is no data available in 2000 for Poland and in 2009 for Ireland and Sweden; therefore data of the next/previous year of that country has been used in the EU-total and the yearly reduction.

There has been a general notable decrease in bicycle fatality rates for the EU-18 countries over a ten year period.

Figure 1 shows both the number of cyclist fatalities and the proportion of the fatality total in the EU-19 countries between 2000 and 2009. In this period the decrease of bicycle fatalities was 33%. The proportion of bicycle fatalities in the total number of traffic fatalities decreased 7% this period.

Figure 2 shows the fatality rate for the EU-18 countries (EU-19 except Luxembourg) for 2000 and 2009. This is defined as the number of bicycle fatalities per million inhabitants. While these rates fluctuate somewhat from year to year, there has been a general notable decrease in rates for the EU-18 countries over a ten-year period. Fatality rates in Ireland and Romania presented an exception in which an increase in the ten-year comparison was evident.

Figure 2: Cyclist fatality rates, 2000 and 2009 compared, EU-18



* Data of 2001 for PL
Data of 2008 for IE and SE

Source: CARE database / EC
Date of query: November 2011
Source of population: Eurostat
Date of query: December 20

It can be seen from Table 2 that the EU countries with the highest percentage of bicycle fatalities in 2009 were The Netherlands (21%) and Denmark and Slovenia (both 11%). In contrast, in Greece and Spain cyclists constitute only a small part (<2%) of the road accident fatalities.

Table 2: Percentages of cyclist fatalities in the total number of road accident fatalities, 2000-2009[3]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
BE	9%	9%	8%	9%	7%	7%	9%	8%	9%	9%
CZ	10%	11%	11%	11%	9%	9%	10%	10%	9%	9%
DK	12%	13%	11%	11%	14%	12%	10%	13%	13%	8%
DE	9%	9%	9%	9%	8%	11%	10%	9%	10%	11%
IE	2%	3%	5%	3%	3%	3%	2%	4%	5%	-
EL	1%	2%	1%	1%	1%	1%	1%	1%	1%	1%
ES	1%	2%	2%	1%	2%	2%	2%	2%	2%	2%
FR	3%	3%	3%	3%	3%	3%	4%	3%	3%	4%
IT	6%	5%	5%	5%	5%	6%	5%	7%	6%	7%
NL	18%	20%	17%	18%	20%	20%	25%	21%	21%	21%
AT	6%	6%	8%	6%	7%	6%	7%	5%	9%	6%
PL	-	11%	12%	11%	12%	11%	10%	9%	8%	8%
PT	3%	3%	3%	4%	4%	4%	4%	4%	5%	3%
RO	6%	6%	5%	7%	5%	8%	8%	6%	6%	6%
SI	8%	6%	7%	0%	8%	7%	6%	6%	8%	11%
FI	13%	14%	13%	10%	7%	11%	9%	6%	5%	7%
SE	8%	7%	8%	7%	6%	9%	6%	7%	8%	-
UK	4%	4%	4%	3%	4%	5%	4%	5%	4%	4%
EU-18	6,1%	6,1%	6,0%	6,3%	6,2%	6,7%	6,5%	6,3%	6,4%	6,6%
EE	-	-	-	-	-	4%	6%	7%	7%	7%
CY	-	-	-	-	2%	-	-	-	-	-
LV	-	-	-	-	6%	7%	8%	4%	5%	10%
LU	1%	1%	2%	0%	0%	2%	0%	0%	0%	4%
HU	-	-	-	13%	14%	12%	12%	13%	11%	13%
MT	-	-	-	-	-	0%	0%	0%	0%	0%
SK						9%	8%	9%	8%	6%

Source: CARE Database / EC
Date of query: November 2011

The Netherlands, Denmark and Slovenia have the highest percentages of cyclist fatalities in the total number of road accident fatalities.

Who is involved?

Half of the cyclists in the EU-23 were at least 60 years old when they died in an accident.

Table 3 indicates that, across the EU-23 countries, the majority of cyclist fatalities are males (80%). For the larger countries, The Netherlands and Belgium had the highest proportion of female cyclist fatalities (around 30%), while countries like Romania and Portugal had 8% or less female fatalities. Across the EU-23 countries, there appears to be a large proportion of cyclists of 60 years or older who die as the cause of an accident (49%).

[3] For Poland (2000) and Ireland & Sweden (2009) data of the next/previous year has been used in the EU-total.

Table 3: Percentage of cyclist fatalities by age and gender, 2009

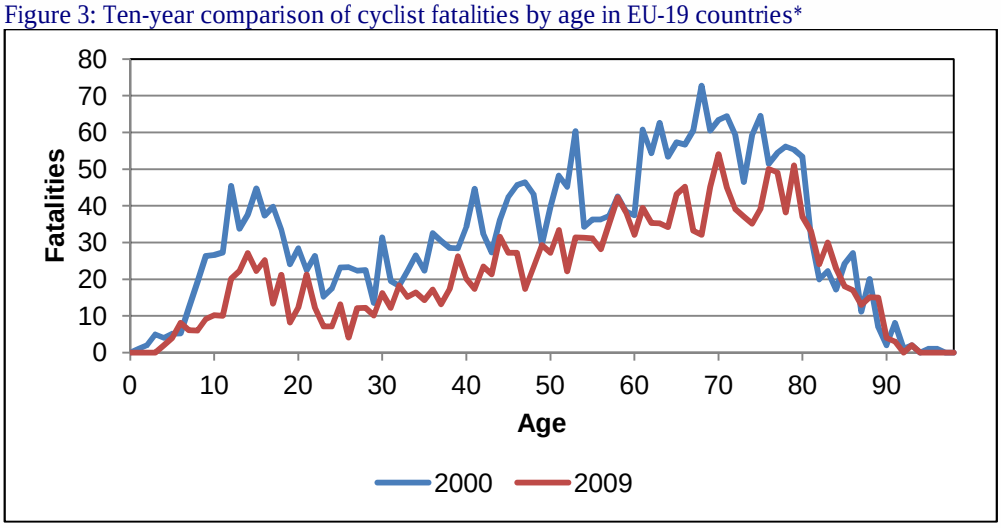
	0-14		15-24		25-39		40-59		60+		All ages		Number known	Total
	F	M	F	M	F	M	F	M	F	M	F	M		
BE	1%	5%	3%	8%	3%	6%	7%	18%	15%	34%	30%	70%	88	89
CZ	0%	0%	1%	4%	0%	16%	8%	29%	10%	33%	19%	81%	83	84
DK	4%	4%	0%	8%	0%	4%	12%	24%	16%	28%	32%	68%	25	25
DE	0%	5%	1%	5%	2%	5%	3%	20%	18%	40%	25%	75%	462	462
EE	0%	0%	14%	0%	0%	29%	0%	14%	0%	43%	14%	86%	7	7
IE*	0%	8%	0%	23%	0%	0%	15%	23%	0%	31%	15%	85%	13	13
EL	0%	20%	0%	13%	0%	27%	0%	13%	0%	27%	0%	100%	15	15
ES	2%	2%	2%	11%	6%	20%	1%	27%	2%	27%	13%	87%	56	57
FR	1%	7%	1%	7%	4%	10%	6%	19%	9%	36%	20%	80%	162	162
IT	1%	3%	0%	2%	0%	8%	3%	18%	14%	51%	18%	82%	289	295
LV	0%	0%	0%	8%	8%	13%	4%	42%	8%	17%	21%	79%	24	26
LU	0%	50%	0%	0%	0%	0%	0%	0%	0%	50%	0%	100%	2	2
HU	0%	2%	1%	3%	1%	11%	7%	30%	13%	33%	21%	79%	103	103
NL	4%	7%	5%	7%	1%	4%	5%	10%	16%	41%	32%	68%	138	138
AT	3%	3%	0%	0%	3%	3%	3%	26%	13%	49%	21%	79%	39	39
PL	2%	3%	3%	6%	2%	8%	7%	22%	9%	38%	23%	77%	368	371
PT	0%	0%	0%	12%	0%	16%	0%	40%	8%	24%	8%	92%	29	29
RO	0%	9%	0%	4%	1%	9%	1%	34%	3%	38%	5%	95%	157	157
SI	0%	6%	0%	0%	0%	17%	0%	44%	0%	33%	0%	100%	18	18
SK	0%	5%	0%	0%	5%	16%	16%	11%	5%	42%	26%	74%	19	22
FI	0%	5%	0%	5%	5%	10%	5%	10%	25%	35%	35%	65%	20	20
SE*	0%	0%	0%	3%	10%	0%	7%	23%	13%	43%	30%	70%	30	30
UK	1%	10%	2%	11%	11%	12%	5%	28%	2%	20%	20%	80%	104	104
EU-23	1%	5%	2%	5%	2%	8%	5%	22%	11%	38%	21%	79%	2.251	2.267

* Data from 2008

Source: CARE Database / EC
Date of query: November 2011

Figure 3 indicates that over a ten-year period (2000-2009), there has been a marked reduction in cycling fatality numbers across almost all ages in the EU-19 countries. This figure displays also a clear trend in fatalities evident both in 2000 and 2009: there appears to be a peak in fatalities of cyclists aged between 12 and 17, the age where children are likely to increasingly be undertaking independent, solo cycle travel. A general decrease in fatality risk then follows till around 30 years, at which point a continuous if jagged increase in fatality numbers is evident till around 80 years. After this, there is a relatively sharp decline.

Figure 3: Ten-year comparison of cyclist fatalities by age in EU-19 countries*



* Data of 2001 for PL
Data of 2008 for IE and SE

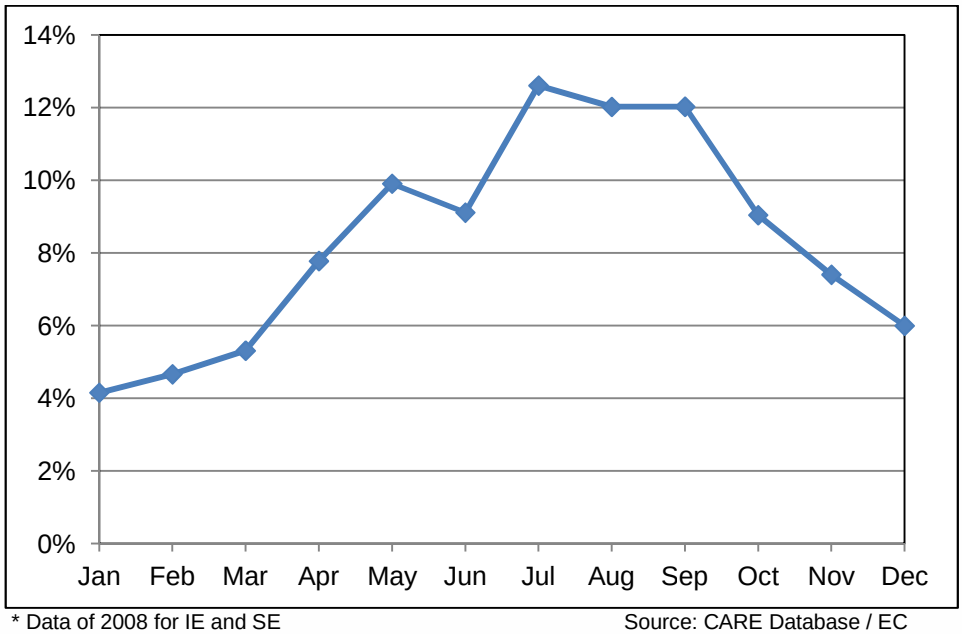
Source: CARE Database / EC
Date of query: November 2011

When do these Crashes Occur?

Figure 4 shows that 37% of cyclist fatalities in 2009 in the EU-23 countries occurred in July, August and September. The proportion of cyclist fatalities during January, February and March is only 14%. This is less than the proportion of car occupant fatalities during these months: 24%. As the slippery wet conditions of many European winters are conducive to high severity accident injuries, these analysis outcomes are likely to be associated with the actual number of cyclists on the road during these seasons rather than an indication of risk of injury per cyclist.

37% of cyclist fatalities in 2009 occurred during July, August and September, against 14% during January, February and March.

Figure 4: Proportion of cyclist fatalities per month in 2009, EU-23*



* Data of 2008 for IE and SE

Source: CARE Database / EC
Date of query: December 2011

Table 4 shows that there is no clear trend in the incidence of cyclist fatalities by month among individual countries. The peak for the EU-23 countries occurred in July (13% of cyclist fatalities) and the fewest fatalities occurred in January (4% of cyclist fatalities).

Table 4: Cyclist fatalities by month in 2009, EU-23

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
BE	2%	6%	4%	12%	8%	7%	12%	16%	15%	7%	8%	3%	89
CZ	4%	2%	1%	4%	10%	6%	7%	15%	19%	12%	10%	11%	84
DK	8%	0%	4%	8%	8%	8%	24%	8%	20%	4%	4%	4%	25
DE	3%	4%	5%	10%	10%	9%	14%	12%	13%	7%	8%	5%	462
EE	14%	0%	0%	0%	0%	0%	0%	0%	57%	14%	14%	0%	7
IE*	15%	15%	0%	8%	0%	8%	15%	8%	8%	23%	0%	0%	13
EL	0%	7%	13%	13%	0%	0%	7%	13%	13%	20%	0%	13%	15
ES	5%	3%	7%	9%	8%	11%	10%	11%	14%	9%	6%	8%	57
FR	3%	2%	7%	8%	9%	9%	15%	11%	14%	13%	5%	4%	162
IT	4%	6%	6%	4%	12%	8%	15%	14%	7%	10%	8%	6%	295
LV	4%	0%	0%	4%	4%	8%	19%	23%	8%	12%	15%	4%	26
LU	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	2
HU	9%	6%	8%	3%	11%	13%	6%	14%	8%	12%	7%	6%	103
NL	6%	7%	7%	6%	12%	7%	12%	9%	13%	10%	7%	5%	138
AT	3%	0%	5%	13%	8%	18%	15%	15%	10%	5%	5%	3%	39
PL	5%	6%	5%	8%	8%	9%	12%	11%	12%	8%	10%	8%	371
PT	12%	4%	12%	12%	4%	8%	8%	8%	12%	4%	8%	8%	29
RO	3%	3%	6%	7%	17%	9%	10%	12%	8%	8%	8%	8%	157
SI	0%	0%	11%	6%	0%	17%	17%	11%	28%	11%	0%	0%	18
SK	0%	0%	0%	9%	32%	14%	14%	9%	5%	18%	0%	0%	22
FI	0%	0%	5%	5%	10%	5%	10%	20%	30%	10%	0%	5%	20
SE*	0%	0%	0%	20%	10%	17%	7%	17%	13%	10%	7%	0%	30
UK	6%	10%	5%	12%	6%	11%	15%	9%	10%	8%	3%	8%	104
EU-23	4%	5%	5%	8%	10%	9%	13%	12%	12%	9%	7%	6%	2.267

* Data of 2008 for IE and SE

Source: CARE Database / EC
Date of query: December 2011

Slightly more cyclists were killed on Wednesdays and Fridays than on other days.

As shown in Table 5, most cyclist fatalities in 2009 in the EUR-23 countries occurred at Wednesdays (17%) and Fridays (15%), but the differences between days are small.

Table 5: Cyclist fatalities by day of week in 2009, EU-23

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total
BE	16%	13%	17%	16%	15%	8%	16%	89
CZ	13%	11%	14%	24%	13%	15%	10%	84
DK	20%	16%	16%	24%	16%	8%	0%	25
DE	16%	13%	16%	12%	17%	12%	13%	462
EE	43%	0%	0%	14%	14%	29%	0%	7
IE*	0%	0%	38%	15%	23%	15%	8%	13
EL	7%	20%	13%	7%	13%	27%	13%	15
ES	14%	14%	17%	12%	12%	12%	20%	57
FR	19%	20%	17%	15%	11%	12%	5%	162
IT	12%	16%	19%	15%	12%	15%	12%	295
LV	23%	12%	8%	0%	31%	15%	12%	26
LU	0%	0%	0%	0%	50%	0%	50%	2
HU	16%	11%	17%	13%	22%	8%	15%	103
NL	18%	14%	17%	11%	11%	16%	12%	138
AT	13%	8%	10%	26%	23%	8%	13%	39
PL	12%	13%	19%	14%	17%	13%	12%	371
PT	20%	12%	16%	20%	12%	8%	12%	29
RO	15%	13%	13%	10%	11%	16%	22%	157
SI	17%	22%	6%	22%	11%	6%	17%	18
SK	9%	5%	32%	23%	14%	5%	14%	22
FI	20%	30%	15%	5%	20%	5%	5%	20
SE*	17%	13%	7%	10%	17%	23%	13%	30
UK	9%	18%	20%	13%	10%	24%	7%	104
EU-23	14%	14%	17%	14%	15%	13%	12%	2.267

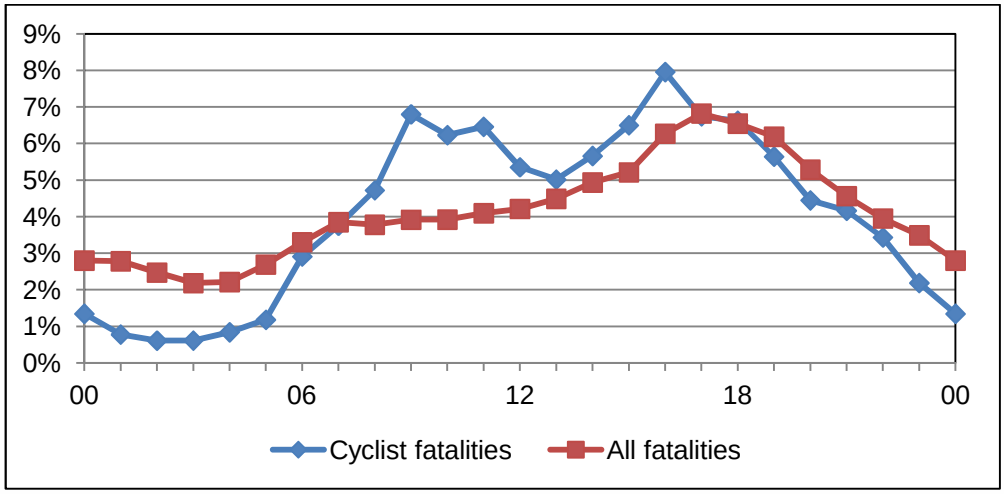
* Data of 2008 for IE and SE

Source: CARE Database / EC
Date of query: December 2011

Figure 5 presents the distribution of cyclist fatalities over 24 hour for the EU-22 countries[4]. A large percentage of cyclist fatalities across the countries occurred during the 16:00-20:00 hours time period (27%). Also between 08:00 and 12.00 and 12:00-16:00 hours, more bicyclists are involved in fatalities (24% and 23% respectively) than during other times of the day. Compared to other transport modes, the share of bicycle fatalities raises during the day.

More than one fourth of cyclist fatalities occurred between 16:00 and 20:00 hours.

Figure 5: Distribution of cyclist fatalities and of all road fatalities by hour of day in 2009, EU-22*



* Data of 2008 for IE and SE

Source: CARE Database / EC
Date of query: December 2011

Table 6 shows the distribution over six four-hour periods for each of the EU-22 countries.

Table 6: Distribution of cyclist fatalities by hour of day in 2009, EU-22

	0:00-3:59 h	4:00-7:59 h	8:00-11:59 h	12:00-15:59 h	16:00-19:59 h	20:00-23:59 h	Number known	Total
BE	2%	8%	25%	27%	28%	10%	89	89
CZ	4%	14%	13%	33%	33%	13%	70	77
DK	4%	16%	16%	20%	32%	12%	25	25
EE	0%	0%	0%	14%	71%	14%	7	7
IE	8%	8%	8%	38%	15%	23%	13	13
EL	0%	0%	7%	27%	13%	53%	15	15
ES	4%	8%	32%	20%	20%	17%	57	57
FR	4%	8%	29%	28%	23%	8%	162	162
IT	4%	4%	37%	17%	26%	13%	293	294
LV	4%	8%	8%	23%	15%	42%	26	26
LU	0%	0%	0%	0%	100%	0%	2	2
HU	2%	14%	13%	19%	30%	22%	103	103
NL	4%	7%	18%	35%	26%	10%	136	137
AT	3%	10%	18%	33%	23%	13%	39	39
PL	3%	12%	23%	18%	29%	15%	371	371
PT	4%	16%	20%	8%	32%	20%	29	29
RO	2%	5%	23%	22%	30%	18%	157	157
SI	0%	11%	11%	17%	39%	22%	18	18
SK	5%	20%	15%	25%	35%	5%	20	21
FI	5%	0%	30%	30%	25%	10%	20	20
SE	10%	17%	23%	37%	10%	3%	30	30
UK	3%	8%	32%	18%	27%	13%	104	104
EU-22	3%	9%	24%	23%	27%	14%	1.785	1.795

* Data of 2008 for IE and SE

Source: CARE Database / EC
Date of query: December 2011

[4] For DE the hour of day is not available in CARE, therefore DE is excluded.

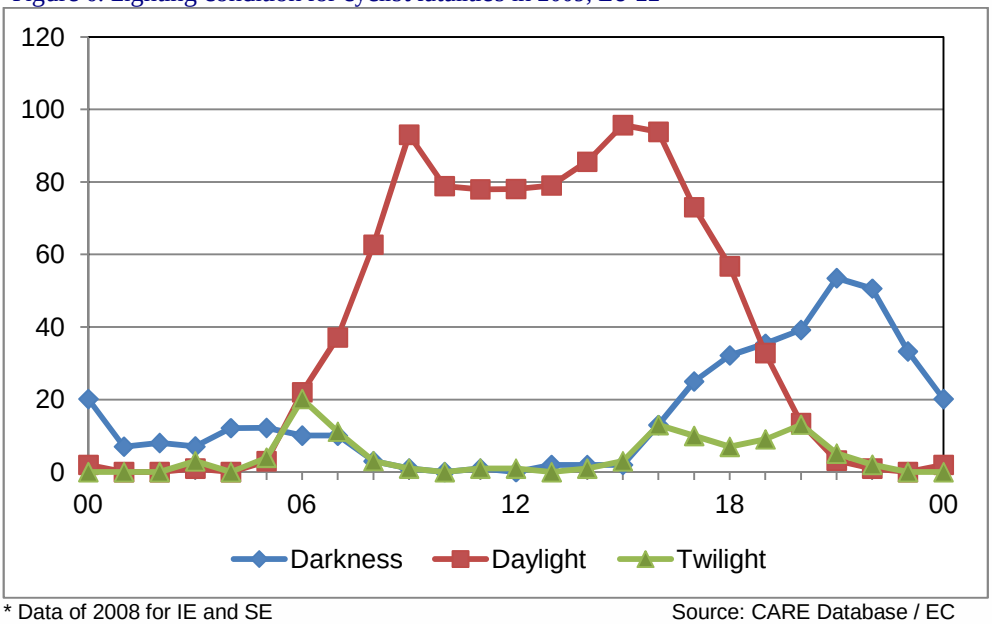
30% of cyclist fatalities in the EU-21 countries were killed in poor lighting conditions

There is no clear trend in the times of collisions for individual countries – for example: the fatality proportion between 04:00 and 08:00 was slightly above average in Denmark and Sweden; between 08:00 and 12:00 it was above average in Spain and the UK. Some of the numbers of fatalities in individual countries were low, and differences are unlikely to be statistically significant.

Of countries with larger fatality numbers, the highest number of fatalities in the United Kingdom, France and Italy occurred between 08:00 and 12:00 hours; from 12:00 to 16:00 hours in The Netherlands; and from 16:00 to 20:00 hours in Poland.

The role of light conditions on the incidence of cyclist fatalities is demonstrated in Figure 6 and Table 7. Some fatalities occurring between 16:00 and 20:00 hours may be related to lighting conditions: around 25% of accidents occurred in the dark. On the other hand, accidents between 08:00 and 12:00, and between 12:00 and 16:00 hours have few fatalities related to darkness, and relatively few to twilight. However, this is comprehensible if we look at the hours when there is daylight.

Figure 6: Lighting condition for cyclist fatalities in 2009, EU-22*



* Data of 2008 for IE and SE

Source: CARE Database / EC
Date of query: December 2011

Table 7 shows that in the EU-21 countries almost one-third of cyclist fatalities were killed when lighting was poor (twilight or darkness). Among the larger countries, the proportion exceeded 43% in The Czech Republic.

Table 7: Number of cyclist fatalities by lighting condition in 2009, EU-21

	Darkness	Daylight	Twilight	Number known	Total	% dark or twilight
BE	17	69	3	89	89	22%
CZ	29	48	7	84	84	43%
DK	4	21	0	25	25	16%
DE	77	366	19	462	462	21%
EE	3	4	-	7	7	43%
IE	13	-	-	13	13	100%
EL	8	6	1	15	15	60%
ES	13	38	5	57	57	33%
FR	26	128	8	162	162	21%
LV	11	13	2	26	26	50%
LU	1	1	-	2	2	50%
HU	42	61	-	103	103	41%
NL	24	110	3	137	138	20%
AT	9	29	1	39	39	26%
PL	96	226	49	371	371	39%
PT	13	14	2	29	29	52%
RO	42	91	24	157	157	42%
SK	4	15	0	19	22	21%
FI	2	17	1	20	20	15%
SE	5	21	1	27	30	22%
UK	24	80	-	104	104	23%
EU-21	463	1357	127	1947	1.954	30%

* Data of 2008 for IE and SE

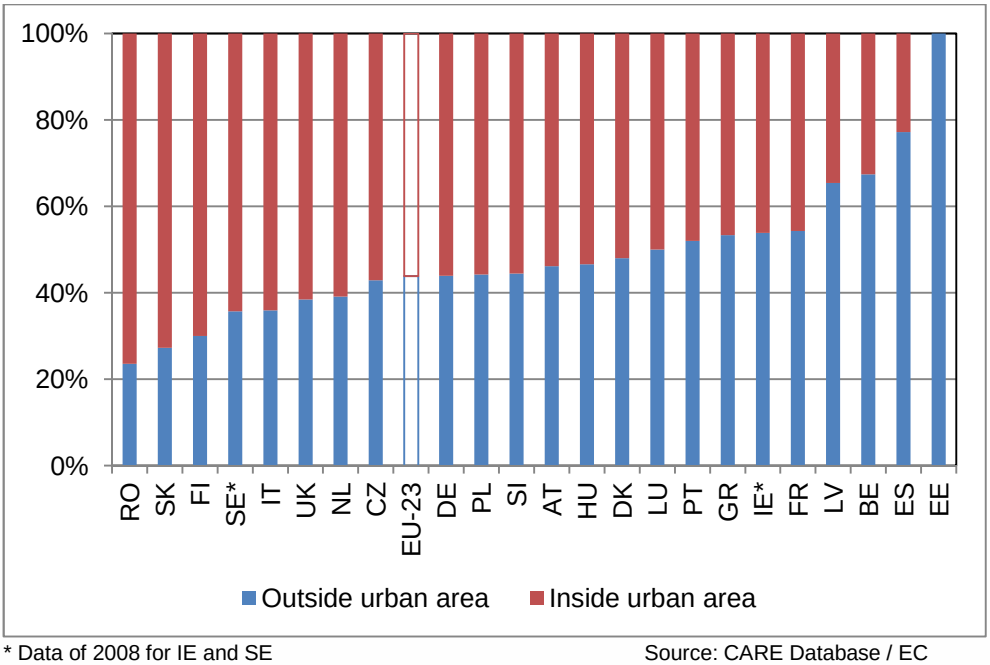
Source: CARE Database / EC
Date of query: December 2011

Where Do These Fatalities Occur?

In general, almost 60% of the bicycle fatalities in the EU-23 countries were killed inside urban areas but there are large differences between the countries, as follows from Figure 7. In Spain, more than 75% of cyclist fatalities were killed in rural areas, in Romania only 24%.

Almost 60% of the cyclist fatalities in the EU-23 countries occur in urban areas.

Figure 7: Distribution of cyclist fatalities by area type in 2009, EU-23



* Data of 2008 for IE and SE

Source: CARE Database / EC
Date of query: December 2011

The percentage of fatalities at junctions in larger countries varied from 18% to 63%.

Table 8 shows that among larger countries, the highest proportion of cyclist fatalities at junctions was in The Netherlands (63%). In Romania only 18% of cyclist fatalities occurred at junctions.

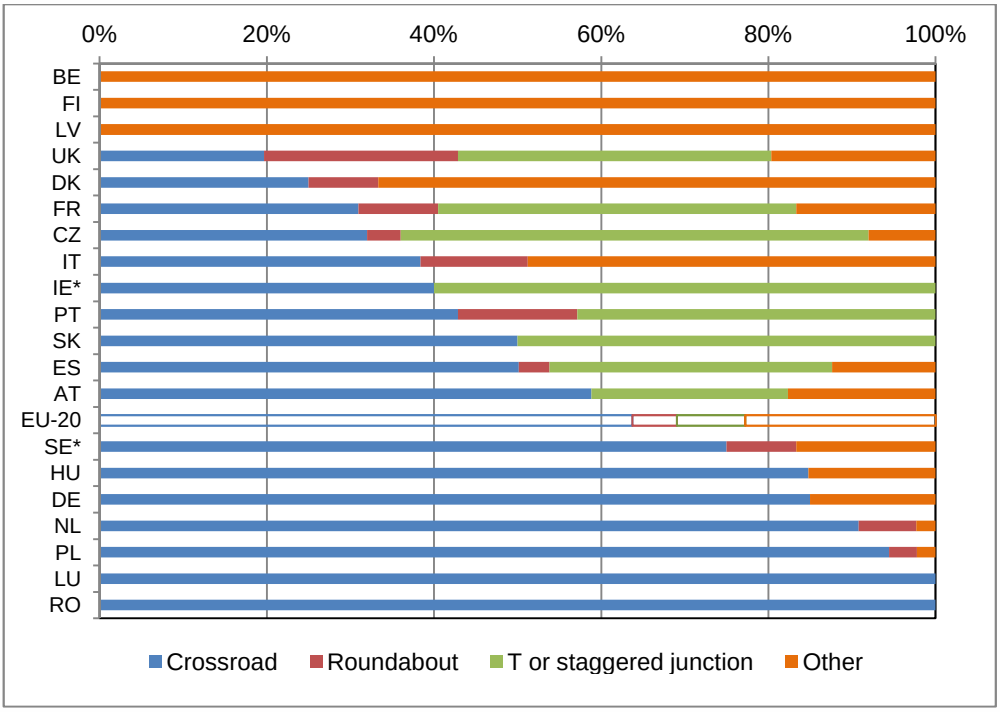
Table 8: Number of cyclist fatalities by junction type in 2009, EU-23

	Not at junction	At junction				% at junction	Total
		Crossroad	Roundabout	T or staggered junction	Other		
BE	48	-	0	-	41	46%	89
CZ	59	8	1	14	2	30%	84
DK	13	3	1	-	8	48%	25
DE	75	209	-	-	37	53%	462
EE	7	-	-	-	-	0%	7
IE	-	2	-	3	0	38%	13
EL	15	-	-	-	-	0%	15
ES	37	10	1	7	2	34%	57
FR	120	13	4	18	7	26%	162
IT	170	48	16	-	61	42%	295
LV	22	-	-	-	4	15%	26
LU	1	1	-	-	0	50%	2
HU	57	39	0	-	7	45%	103
NL	51	79	6	-	2	63%	138
AT	22	10	0	4	3	44%	39
PL	281	85	3	-	2	24%	371
PT	21	3	1	3	-	28%	29
RO	129	28	-	-	-	18%	157
SI	18	0	-	-	-	0%	18
SK	15	2	0	2	-	18%	22
FI	9	-	-	-	11	55%	20
SE	4	9	1	-	2	40%	30
UK	48	11	13	21	11	54%	104
EU-23	1.222	560	47	72	200	39%	2.267

* Data of 2008 for IE and SE

Source: CARE Database / EC
Date of query: December 2011

Figure 8: Distribution of cyclist fatalities by junction type in 2009, EU-20



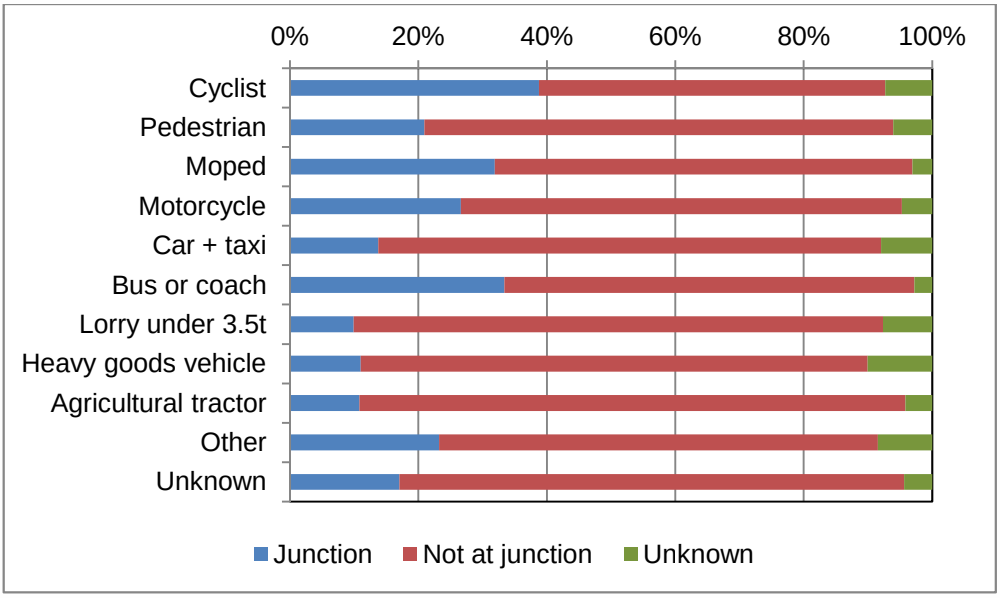
* Data of 2008 for IE and SE

Source: CARE Database / EC Date of query: December 2011

Figure 8 shows the distribution of cyclist fatalities by junction type. Focusing on cyclist fatalities at junctions, more than 60% occurred at crossroads and 8% at T-junctions or staggered junctions. In Germany, The Netherlands and Poland more than 85% of cyclist fatalities at junctions occurred at crossroads. In The Czech Republic 56% of the junction cyclist fatalities occurred at T-junctions or staggered junctions.

As a comparison of these proportions to other modes of transport, Figure 9 presents the percentage of cyclist fatalities at junctions compared to other modes of transport.

Figure 9: Fatality proportions involving cyclists at junctions compared to other modes of transport in 2009, EU-23*



* Data of 2008 for IE and SE

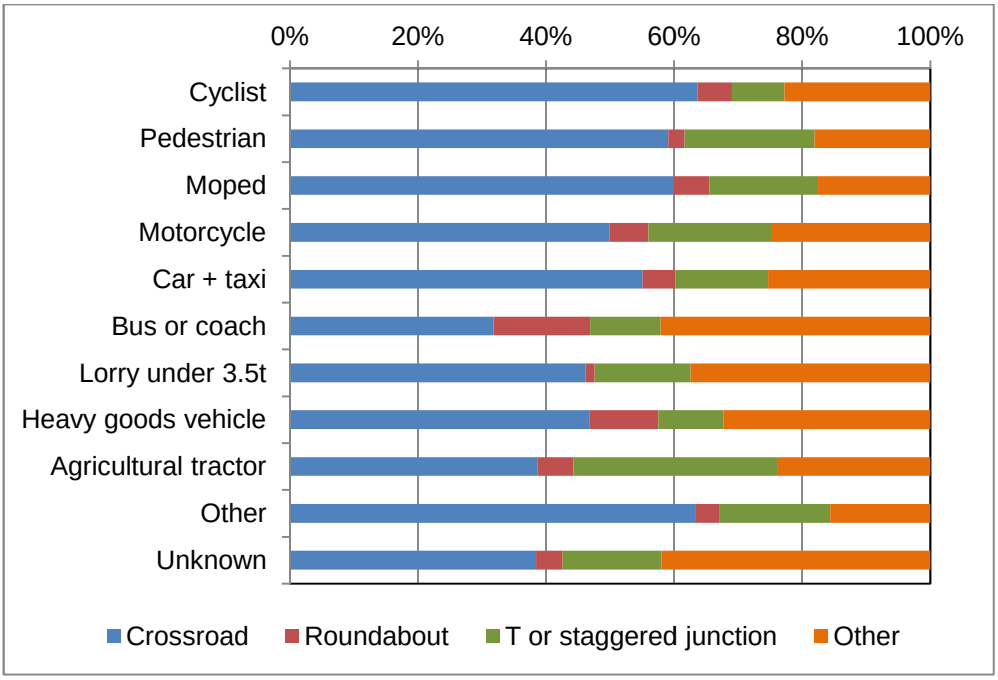
Source: CARE Database / EC
Date of query: December 2011

Nearly 40% of cyclist fatalities occurred at junctions, against less than 15% of car occupant fatalities

This indicates that nearly 40% of cyclist fatalities occur at junctions. Bicycles have the highest fatality rates at junctions. Fatalities with buses/coaches and mopeds are the next highest frequency occurring at junctions (33% and 32% respectively). In comparison, less than 15% of car occupant fatalities occurred at junctions.

When comparing fatalities at the various types of junctions with the different modes of transport, it is evident that bicycle fatalities are over-represented at crossroads (Figure 10). 64% occurring at crossroads compared to 55% for car and taxi occupants. The percentage occurring at T-junctions was relatively smaller than many of the other modes of transport.

Figure 10: Distribution of fatalities on junctions over junction types in the EU-23 countries in 2009*



* Data of 2008 for IE and SE

Source: CARE Database / EC
Date of query: December 2011

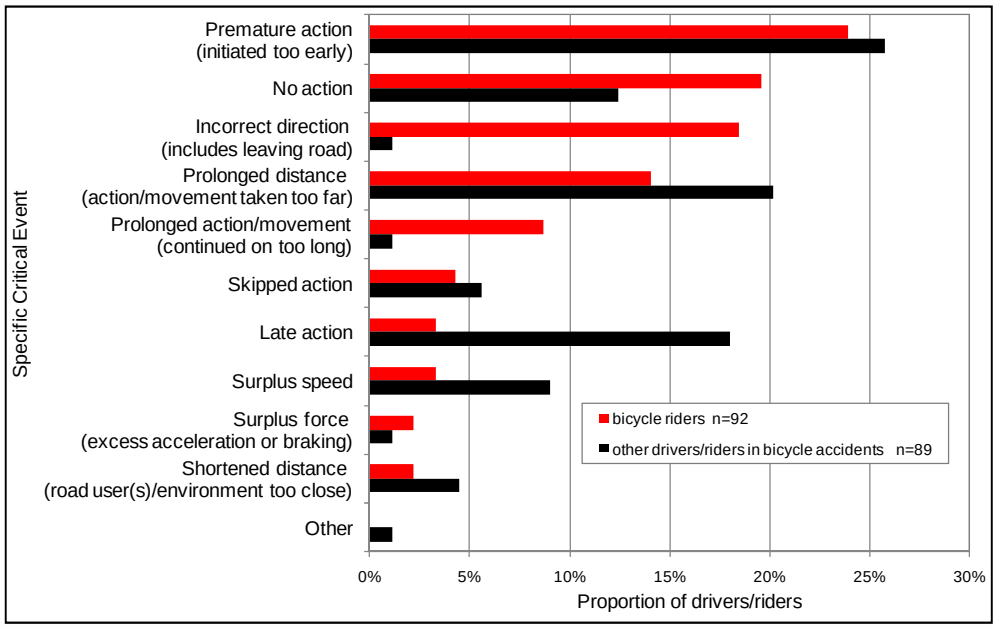
Accident Causation

Between 2005 and 2008, data of 1.006 accidents (involving all road user types and all injury severities) was collected in Germany, Italy, The Netherlands, Finland, Sweden and the UK[5] [6].

In the database, 9% (91) of the accidents involve the rider of a bicycle. Males account for 50% of this group and the mean age is 47 years. Figure 11 compares the distributions of specific critical events for bicycle riders and other drivers/riders in bicycle accidents.

[5] SafetyNet D5.5, Glossary of Data Variables for Fatal and Accident Causation Databases
[6] SafetyNet D5.8, In-Depth Accident Causation Database and Analysis Report

Figure 11: Distribution of specific critical events - bicycle riders and other drivers/riders in bicycle accidents



Source: SafetyNet Accident Causation Database 2005 to 2008 / EC
N=181
Date of query: 2010

Although 'premature action' is recorded most frequently for both bicycle riders and those others involved in bicycle accidents, it is the difference for 'incorrect direction' that is most striking. 'Incorrect direction' refers to a manoeuvre being carried out in the wrong direction (for example, turning left instead of right) or leaving the road (not following the intended direction of the road). 'Premature action' describes a critical event with an action started too early, before a signal was given or required conditions established. In combination with prolonged distance and prolonged action/movement - movements taken too far and manoeuvres that last for too long (for example, not returning to correct lane) – scenarios start to emerge of conflict between bicycle riders and other road users when sharing road space.

Table 9 gives the most frequent links between causes for injury accidents involving bicycle riders. For this group there are 74 such links in total.

18% of the links between causes are observed to be between 'faulty diagnosis' and 'information failure'.

Table 9: Ten most frequent links between causes – bicycle riders

Links between causes	Frequency
Faulty diagnosis - Information failure (driver/environment or driver/vehicle)	13
Observation missed - Faulty diagnosis	6
Observation missed - Inadequate plan	6
Observation missed - Temporary obstruction to view	5
Observation missed - Distraction	4
Observation missed - Permanent obstruction to view	4
Faulty diagnosis - Communication failure	4
Inadequate plan - Insufficient knowledge	4
Observation missed - Inattention	3
Information failure (driver/environment or driver/vehicle) - Inadequate information design	3
Others	22
Total	74

Source: SafetyNet Accident Causation Database 2005 to 2008 / EC
Date of query: 2010

The numbers here are low but the links are similar to those seen for driver and rider groups in other Traffic Safety Basic Facts, with 'faulty diagnosis' and 'observation missed' being the common causes, closely followed by 'inadequate plan' (a lack of all the required details or that the driver's ideas do not correspond to reality).

'Faulty diagnosis' is an incorrect or incomplete understanding of road conditions or another road user's actions. It is linked to both 'information failure' (for example, a rider thinking another vehicle was stopped when it was in fact moving and colliding with it) and 'communication failure' (for example, pulling out in the continuing path of a driver who has indicated for a turn too early). The causes leading to 'observation missed' can be seen to fall into two groups: 'physical 'obstruction to view' type causes (for example, parked cars at a junction) and 'human factor' type causes (for example, not observing a red light due to distraction or inattention).

Disclaimer

The information in this document is provided as it is and no guarantee or warranty is given that the information is fit for any particular purpose. Therefore, the reader uses the information at their own risk and liability.

For more information

Further statistical information about fatalities is available from the CARE database at the Directorate General for Energy and Transport of the European Commission, 28 Rue de Mot, B -1040 Brussels.

Traffic Safety Basic Fact Sheets available from the European Commission concern:

- Main Figures
- Children (Aged <15)
- Youngsters (Aged 15-17)
- Young People (Aged 18-24)
- The Elderly (Aged >64)
- Pedestrians
- Cyclists
- Motorcycles and Mopeds
- Car occupants
- Heavy Goods Vehicles
- Motorways
- Junctions
- Roads in urban areas
- Roads outside urban areas
- Seasonality
- Single vehicle accidents
- Gender

Country abbreviations used and definition of EU-level

EU - 18	
BE	Belgium
CZ	Czech Republic
DK	Denmark
DE	Germany
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
FI	Finland
SE	Sweden
UK	United Kingdom (GB+NI)

EU-17	
BE	Belgium
CZ	Czech Republic
DK	Denmark
IE	Ireland
ES	Spain
FR	France
LV	Latvia
LU	Luxembourg
HU	Hungary
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
FI	Finland
SE	Sweden
UK	United Kingdom (GB+NI)

EU-23 = EU-18 +	
EE	Estonia
LV	Latvia
LU	Luxembourg
HU	Hungary
SK	Slovakia

EU-19 = EU-18 +	
LU	Luxembourg

EU-20 = EU-17 +	
DE	Germany
IT	Italy
SK	Slovakia

EU-21 = EU-17 +	
DE	Germany
EE	Estonia
EL	Greece
SK	Slovakia

EU-22 = EU-17 +	
EE	Estonia
EL	Greece
IT	Italy
SI	Slovenia
SK	Slovakia

Detailed data on traffic accidents are published annually by the European Commission in the Annual Statistical Report. This includes a glossary of definitions on all variables used.

More information on the DaCoTA Project, co-financed by the European Commission, Directorate-General for Mobility and Transport is available at the DaCoTA Website: http://www.dacota-project.eu/index.html.

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