



Traffic Safety Basic Facts 2018



Junctions

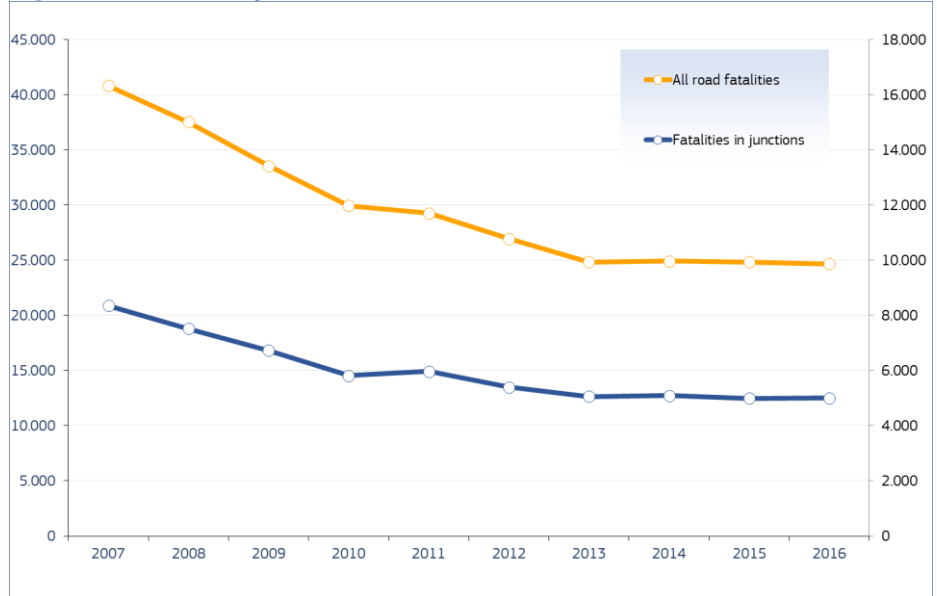


General

In 2016, more than 25.700 people were killed in road accidents throughout the EU; almost 5.000 of whom were killed in road accidents at junctions - a reduction of 40% since 2007. So the trend in junction accident fatalities broadly followed the trend in all fatalities.

The number of fatalities at junctions was falling every year, except three, since 2007; the overall reduction was 40%.

Figure 1: Number of junction fatalities and all road fatalities, EU, 2007-2016



Source: CARE database, data available in May 2018

Statistics related to junction accidents need to be treated carefully due to the presence of a high proportion of "unknown" entries in certain countries which are not always consistent with the definition in the glossary.

It is estimated that approximately 5.000 people died in road accidents at junctions in the EU in 2016.

Table 1: Number of junction fatalities by country, 2007-2016

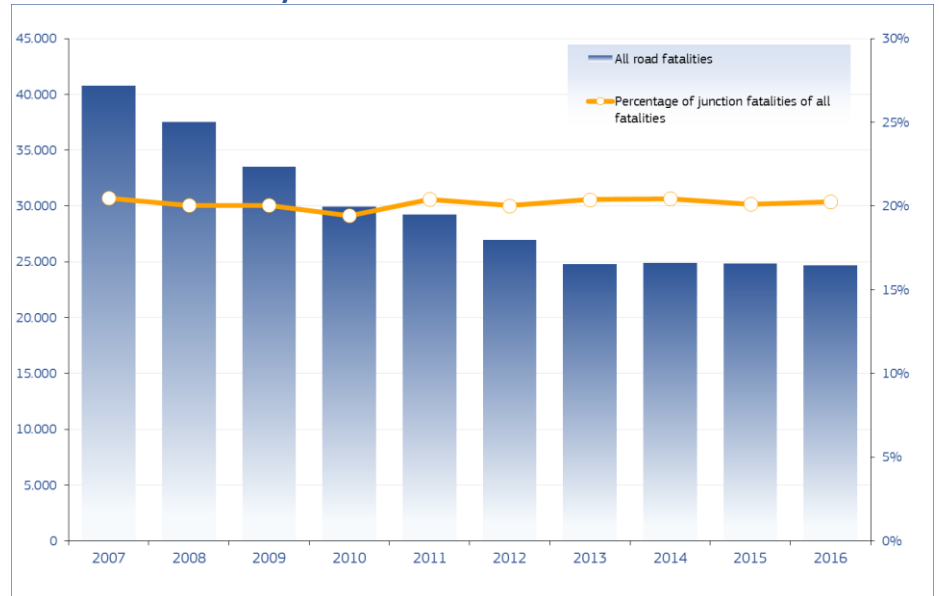
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
BE	195	167	164	158	170	141	138	94	107	85
BG	-	167	119	18	16	18	13	30	10	-
CZ	216	237	177	177	171	143	140	146	131	125
DK	129	126	93	72	67	48	53	47	55	58
DE	1.219	1.117	1.071	914	1.035	1.035	-	-	-	-
EE	52	38	21	17	20	9	-	13	49	-
IE	45	42	30	23	29	23	40	35	-	-
EL	-	-	-	-	-	-	-	-	-	-
ES	721	577	484	458	369	377	315	353	357	389
FR	565	475	576	490	508	466	445	484	494	486
HR	82	102	85	57	72	61	61	54	44	46
IT	1.550	1.369	1.218	1.140	1.102	929	760	834	763	760
CY	34	32	17	17	22	11	12	15	28	10
LV	53	20	17	28	28	18	15	23	23	7
LT	-	-	-	-	-	-	-	-	-	-
LU	7	8	6	0	4	6	7	5	1	4
HU	268	246	169	129	92	87	100	105	136	115
MT	-	-	-	-	-	-	-	-	5	3
NL	253	227	221	192	207	190	183	163	149	142
AT	123	115	139	118	118	102	101	80	83	85
PL	884	872	739	616	678	598	550	522	477	513
PT	161	140	137	163	156	120	93	111	54	88
RO	272	270	255	208	216	227	213	175	202	207
SI	24	-	12	14	15	7	15	3	1	2
SK	61	70	35	44	-	-	-	-	-	-
FI	62	72	51	58	66	1	-	5	8	8
SE	115	97	65	50	-	-	-	-	63	66
UK	1.089	907	816	646	706	682	646	648	642	626
EU	8.291	7.452	6.686	5.768	5.922	5.354	5.017	5.048	4.952	4.954
Yearly Change		-10,1%	-10,3%	-13,7%	2,7%	-9,6%	-6,3%	0,6%	-1,9%	0,0%
CH	55	69	66	43	55	42	39	38	41	33

Source: CARE database, data available in May 2018

Totals for EU include latest available data (Data for Greece, Lithuania and Slovakia not included in totals)

Figure 2 shows that the proportion of fatalities in road accidents at junctions of all fatalities was around 20% throughout the last years. A few countries have been excluded from this chart due to a lack of appropriate data (see Table 3). The proportions from 2016 are illustrated in Map 1.

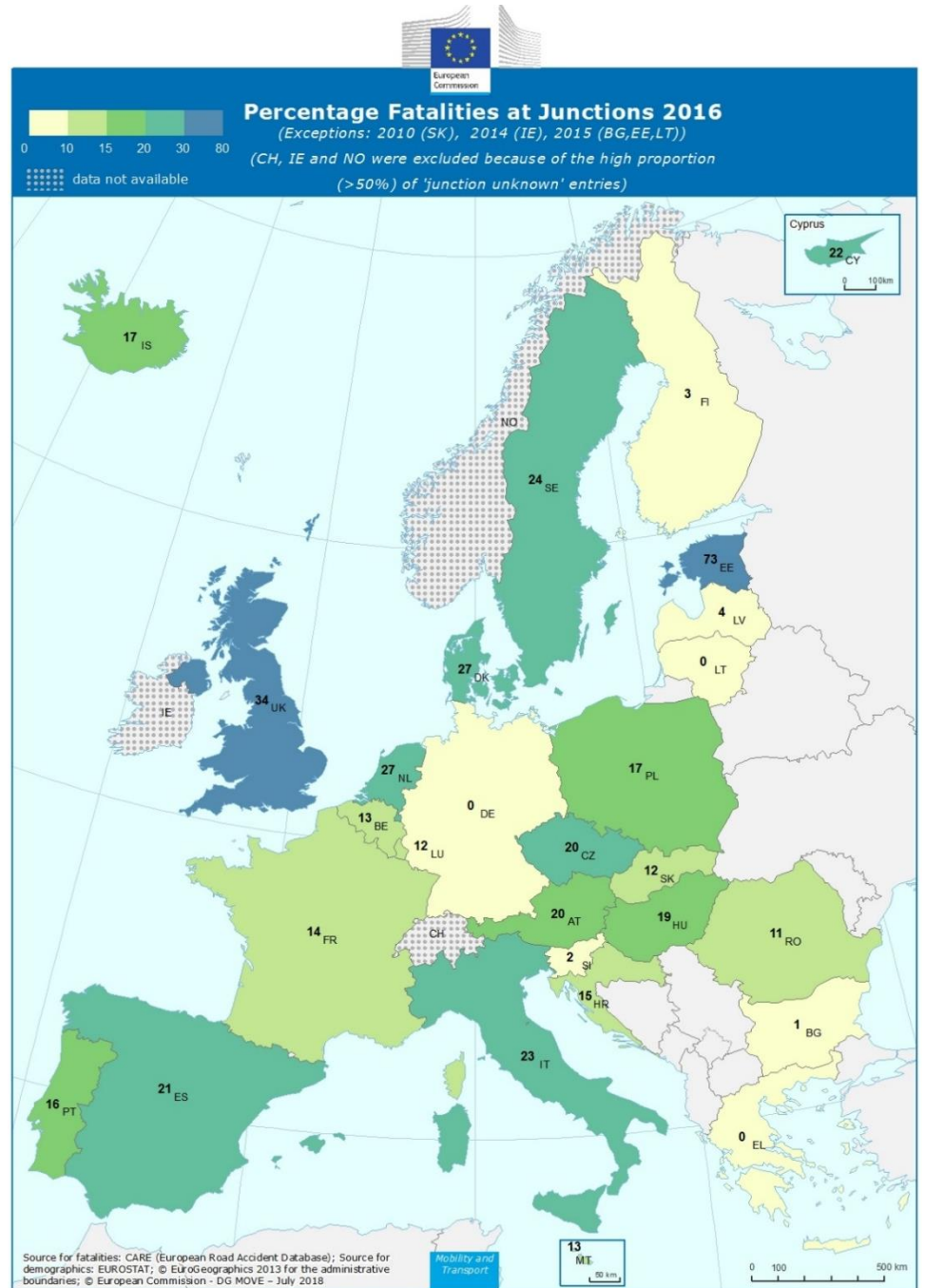
Figure 2: Number of junction fatalities and percentage of all road fatalities, EU, 2007-2016 or latest available year



Source: CARE database, data available in May 2018

The proportion of fatalities in road accidents at junctions of all road fatalities was around 20% throughout the last years.

Map 1: Proportion of fatalities in junction accidents by country, 2016 or latest available year



The proportion of fatalities occurring at junctions varies between 8% and 35% across the EU.

The proportion of fatalities occurring in road accidents at junctions has tended to fall in some countries, but to rise in others.

Table 2 shows the proportion of fatalities in road accidents at junctions of all fatalities by country (data availability provided). There seems to be no common trend in this proportion across the EU, it has tended to fall in some countries, to remain constant or to rise in others.

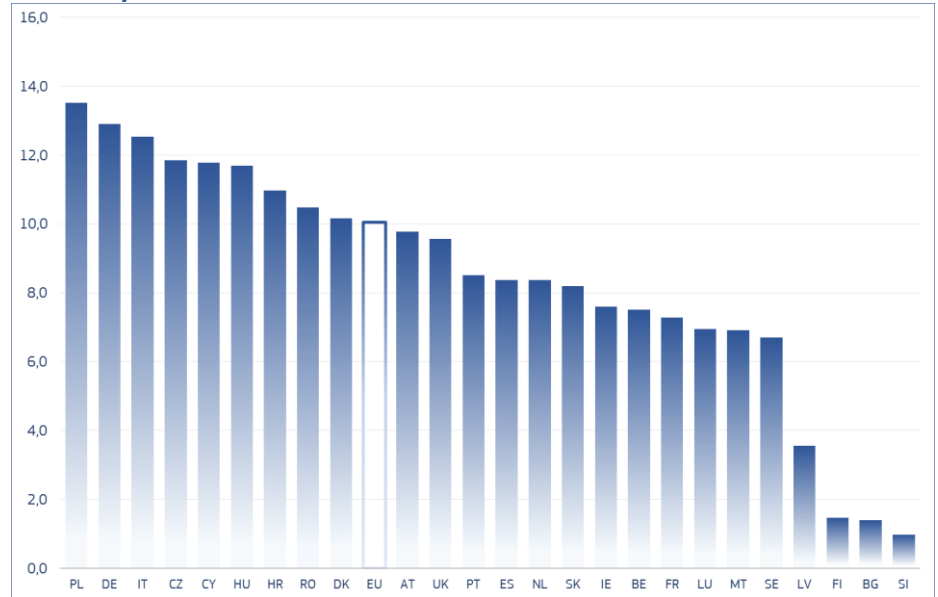
Table 2: Percentage of junction fatalities of all road fatalities by country, 2007-2016 or latest available year

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
BE	18%	18%	17%	19%	20%	18%	19%	13%	15%	13%
BG	-	16%	13%	2%	2%	3%	2%	5%	1%	-
CZ	18%	22%	20%	22%	22%	19%	21%	21%	18%	20%
DK	32%	31%	31%	28%	30%	29%	28%	26%	31%	27%
DE	25%	25%	26%	25%	26%	29%	-	-	-	-
EE	27%	29%	21%	22%	20%	10%	-	17%	73%	-
IE	13%	15%	13%	11%	16%	14%	21%	18%	-	-
EL	-	-	-	-	-	-	-	-	-	-
ES	19%	19%	18%	18%	18%	20%	19%	21%	21%	21%
FR	12%	11%	13%	12%	13%	13%	14%	14%	14%	14%
HR	13%	15%	16%	13%	17%	16%	17%	18%	13%	15%
IT	30%	29%	29%	28%	29%	25%	22%	25%	22%	23%
CY	38%	39%	24%	28%	31%	22%	27%	33%	49%	22%
LV	13%	6%	7%	13%	16%	10%	8%	11%	12%	4%
LT	-	-	-	-	-	-	-	-	-	-
LU	15%	23%	13%	0%	12%	18%	16%	14%	3%	13%
HU	22%	25%	21%	17%	14%	14%	17%	17%	21%	19%
MT	-	-	-	-	-	-	-	-	45%	13%
NL	36%	34%	34%	36%	38%	34%	38%	34%	28%	27%
AT	18%	17%	22%	21%	23%	19%	22%	19%	17%	20%
PL	16%	16%	16%	16%	16%	17%	16%	16%	16%	17%
PT	17%	16%	16%	17%	18%	17%	15%	17%	18%	16%
RO	10%	9%	9%	9%	11%	11%	11%	10%	11%	11%
SI	8%	-	7%	10%	11%	5%	12%	3%	1%	2%
SK	9%	12%	9%	12%	-	-	-	-	-	-
FI	16%	21%	18%	21%	23%	0%	0%	2%	3%	3%
SE	24%	24%	18%	19%	-	-	-	-	24%	24%
UK	36%	34%	35%	34%	36%	38%	36%	35%	36%	34%
EU	19%	19%	19%	18%	19%	19%	19%	20%	19%	19%
CH	14%	19%	19%	13%	17%	12%	14%	16%	16%	15%

Source: CARE database, data available in May 2018

The junction fatality rate ranges between 1 and 14 with an EU average of 10 junction fatalities per one million residents.

Figure 3: Junction fatality rates per million population by country, 2017 or latest available year



Source: CARE database (EUROSTAT for population data), data available in May 2018 (EE with 37 fatalities per million population is excluded)

Figure 3 and Table 3 illustrate the junction fatality rates per million population by country. This indicator ranges between 1 and 14 with an EU average of 10 junction fatalities per million population (the 37 in EE should be treated as outlier).

Just like the number of junction fatalities, also the junction fatality rate was declining during the decade 2007-2016 in most EU countries.

Table 3: Junction fatality rates per million population by country, 2007-2016 or latest available year

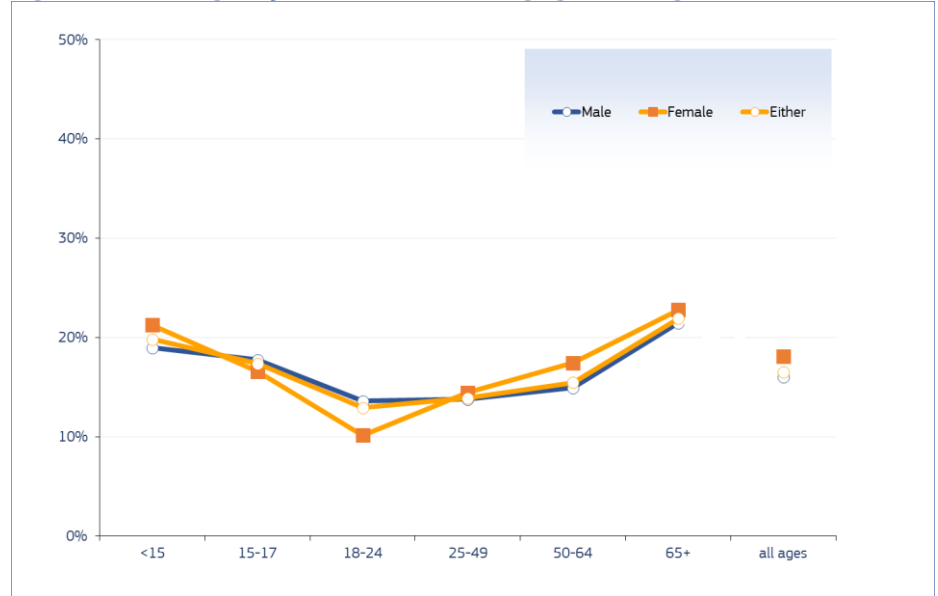
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
BE	18	16	15	15	15	13	12	8	10	8
BG	-	22	16	2	2	2	2	4	1	-
CZ	21	23	17	17	16	14	13	14	12	12
DK	24	23	17	13	12	9	9	8	10	10
DE	15	14	13	11	13	-	-	-	-	-
EE	39	28	16	13	15	7	-	10	37	-
IE	10	9	7	5	6	5	9	8	-	-
EL	-	-	-	-	-	-	-	-	-	-
ES	16	13	10	10	8	8	7	8	8	8
FR	9	7	9	8	8	7	7	7	7	7
HR	19	24	20	13	17	14	14	13	10	11
IT	27	23	21	19	19	16	13	14	13	13
CY	45	41	21	21	26	13	14	17	33	12
LV	24	9	8	13	13	9	7	11	12	4
LT	-	-	-	-	-	-	-	-	-	-
LU	15	17	12	0	8	11	13	9	2	7
HU	27	24	17	13	9	9	10	11	14	12
MT	-	-	-	-	-	-	-	-	12	7
NL	15	14	13	12	12	11	11	10	9	8
AT	15	14	17	14	14	12	12	9	10	10
PL	23	23	19	16	18	16	14	14	13	14
PT	15	13	13	15	15	11	9	11	5	9
RO	13	13	12	10	10	11	11	9	10	10
SI	12	-	6	7	7	3	7	1	0	1
SK	11	13	7	8	-	-	-	-	-	-
FI	12	14	10	11	-	-	-	-	1	1
SE	13	11	7	5	5	5	7	7	6	7
UK	18	15	13	10	11	11	10	10	10	10
EU	17	15	14	12	12	11	10	10	10	10
CH	7	9	9	6	7	5	5	5	5	4

Source: CARE database (EUROSTAT for population data), data available in May 2018

Age and Gender

Table 4 shows that the elderly (at least 65 years) and young females (younger than 15 years) are more likely than others to be killed at a junction. The variation of this proportion by age and gender is illustrated in Figure 4.

Figure 4: Percentage of junction fatalities by age group and gender, EU, 2016



Source: CARE database, data available in May 2018

The proportion of fatalities occurring at junctions is the highest for young females and the age group 65+ for both females and males.

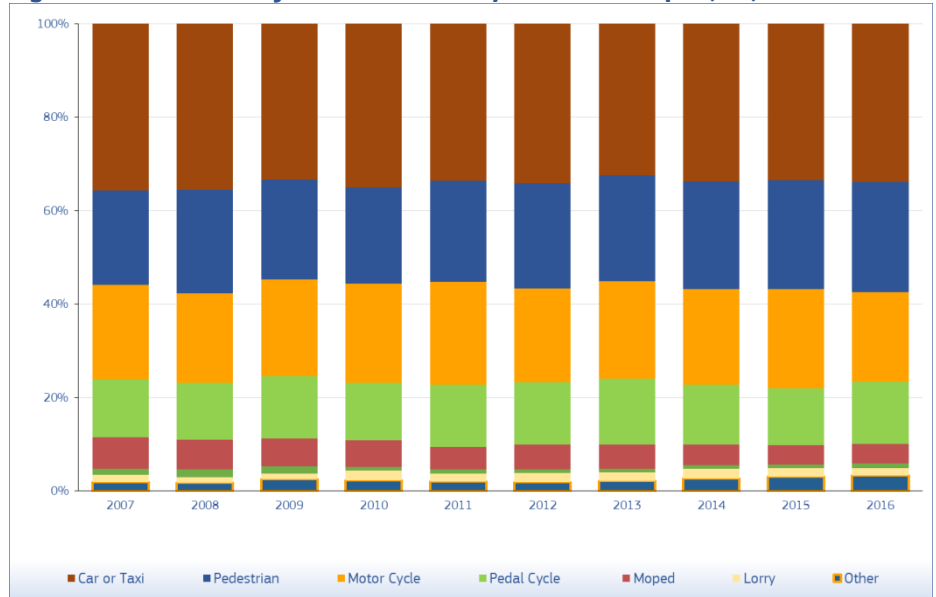
Table 4: Number and distribution of road fatalities by “junction”, age group and gender and percentage of junction fatalities by age group and gender, EU, 2016

		<15	15-17	18-24	25-49	50-64	65+	Un-known	Total
Junction accidents	female	44	27	62	204	172	500	2	1.011
	male	65	66	337	913	558	893	12	2.844
Non-junction accidents	female	163	136	550	1.208	815	1.697	12	4.581
	male	278	306	2.143	5.711	3.179	3.270	42	14.929
Distribution of fatalities in									
Junction accidents	female	1%	1%	2%	5%	4%	13%	0%	26%
	male	2%	2%	9%	24%	14%	23%	0%	74%
Non-junction accidents	female	1%	1%	3%	6%	4%	9%	0%	23%
	male	1%	2%	11%	29%	16%	17%	0%	77%
Proportion of fatalities at junctions									
	female	21%	17%	10%	14%	17%	23%	14%	18%
	male	19%	18%	14%	14%	15%	21%	22%	16%

Source: CARE database, data available in May 2018

Road user type and transport mode

Figure 5: Distribution of junction fatalities by mode of transport, EU, 2007-2016



Source: CARE database, data available in May 2018

The percentage of pedestrians in junction fatalities has been steadily increasing in the last years.

Figure 5 and Table 5 show the distribution of fatalities that occurred at junctions across the different modes of transport as recorded in CARE database. According to Figure 5, especially the percentage of pedestrians in junction fatalities has been steadily increasing in the last years.

60% of fatalities occurring at junctions are of vulnerable road users.

Table 5: Total number and distribution of junction fatalities by country and mode of transport, 2016 or latest available year

	Car or Taxi	Pedestrian	Motor Cycle	Pedal Cycle	Moped	Lorry	HGV	Other	Total
BE	33%	16%	15%	29%	4%	2%	0%	0%	85
BG	-	-	-	-	-	-	-	-	-
CZ	50%	18%	13%	14%	0%	2%	1%	1%	125
DK	28%	21%	9%	34%	5%	0%	0%	3%	58
DE	-	-	-	-	-	-	-	-	-
EE	-	-	-	-	-	-	-	-	-
IE	-	-	-	-	-	-	-	-	-
EL	-	-	-	-	-	-	-	-	-
ES	28%	28%	25%	5%	7%	3%	2%	2%	389
FR	36%	20%	24%	9%	6%	2%	1%	2%	486
HR	13%	30%	24%	24%	2%	2%	2%	2%	46
IT	38%	14%	26%	15%	4%	1%	1%	2%	760
CY	10%	30%	60%	0%	0%	0%	0%	0%	10
LV	57%	29%	14%	0%	0%	0%	0%	0%	7
LT	-	-	-	-	-	-	-	-	-
LU	75%	25%	0%	0%	0%	0%	0%	0%	4
HU	36%	22%	12%	20%	3%	1%	3%	3%	115
MT	0%	33%	67%	0%	0%	0%	0%	0%	3
NL	20%	5%	7%	34%	8%	1%	0%	25%	142
AT	27%	28%	19%	24%	1%	0%	0%	1%	85
PL	37%	30%	12%	13%	5%	0%	3%	1%	513
PT	24%	18%	22%	14%	11%	8%	0%	3%	88
RO	32%	37%	4%	16%	2%	3%	0%	4%	207
SI	50%	0%	0%	50%	0%	0%	0%	0%	2
SK	-	-	-	-	-	-	-	-	-
FI	75%	13%	0%	0%	0%	0%	0%	13%	8
SE	42%	15%	14%	17%	6%	0%	0%	6%	66
UK	33%	34%	20%	7%	1%	1%	0%	4%	626
EU	34%	24%	19%	13%	4%	2%	0%	3%	3.825
CH	13%	13%	26%	42%	6%	0%	0%	0%	31

Source: CARE database, data available in May 2018

In the EU, the percentage of junction fatalities of all fatalities is highest for pedal cyclists and mopeds.

Table 6: Percentage of junction fatalities of all fatalities by country and mode of transport, 2016 or latest available year

	Car or Taxi	Pedestrian	Motor Cycle	Pedal Cycle	Moped	Lorry	HGV	Other	Total
BE	9%	20%	19%	39%	23%	6%	0%	0%	14%
BG	9%	19%	23%	38%	20%	0%	15%	11%	13%
CZ	19%	18%	26%	34%	0%	18%	6%	50%	20%
DK	17%	35%	19%	65%	38%	0%	0%	40%	28%
DE	-	-	-	-	-	-	-	-	-
EE	-	-	-	-	-	-	-	-	-
IE	23%	16%	23%	20%	-	17%	0%	20%	21%
EL	-	-	-	-	-	-	-	-	-
ES	14%	28%	29%	27%	50%	11%	16%	15%	21%
FR	10%	18%	19%	27%	23%	8%	7%	16%	14%
HR	4%	21%	29%	41%	10%	20%	33%	11%	15%
IT	19%	19%	30%	40%	26%	19%	10%	26%	23%
CY	10%	21%	60%	0%	0%	0%	0%	0%	22%
LV	6%	4%	8%	0%	0%	0%	0%	0%	4%
LT	-	-	-	-	-	-	-	-	-
LU	16%	13%	0%	0%	0%	0%	0%	0%	13%
HU	15%	16%	29%	32%	25%	7%	25%	18%	19%
MT	0%	13%	29%	0%	0%	0%	0%	0%	14%
NL	13%	19%	23%	48%	35%	5%	0%	66%	27%
AT	12%	33%	19%	42%	13%	0%	0%	25%	20%
PL	13%	18%	25%	24%	32%	-	13%	20%	17%
PT	9%	13%	32%	36%	23%	17%	0%	10%	16%
RO	9%	11%	17%	19%	15%	11%	0%	11%	11%
SI	2%	0%	0%	9%	0%	-	0%	0%	2%
SK	-	-	-	-	-	-	-	-	-
FI	4%	4%	0%	0%	0%	0%	-	9%	4%-
SE	20%	24%	25%	50%	50%	0%	0%	33%	24%
UK	24%	46%	40%	40%	50%	12%	6%	53%	34%
EU	12%	19%	22%	28%	25%	9%	8%	22%	16%
CH	5%	22%	18%	26%	33%	0%	0%	13%	16%

Source: CARE database, data available in May 2018

Table 6 shows the proportion of fatalities in junction accidents for different modes of transport by country. As expected, in most countries this percentage is highest for vulnerable road users.

Area and road type

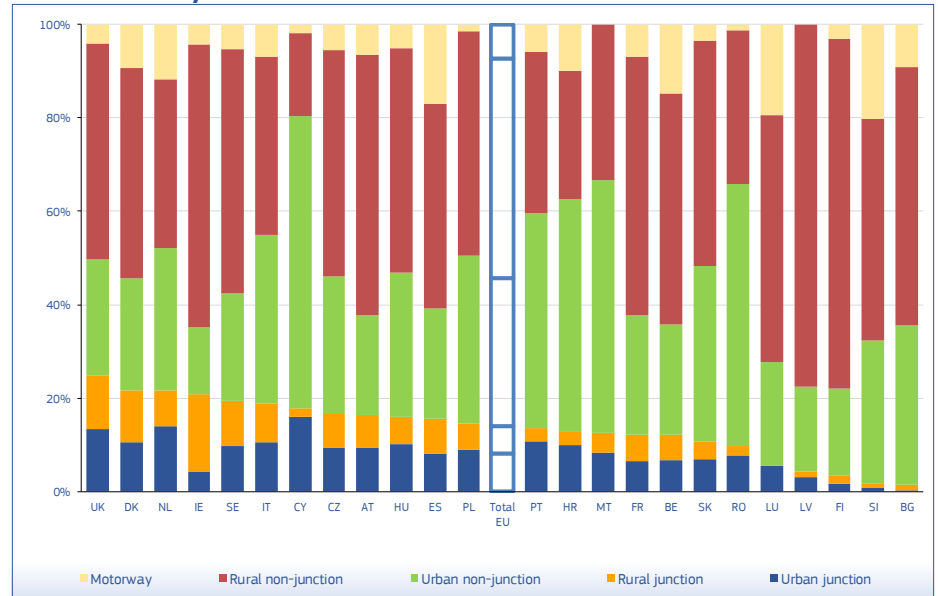
Figure 6 shows the distribution of junction fatalities by type of road; the percentages for each type of road vary widely among the countries.

In contrast to the distribution of junction fatalities across the different types of road in Figure 8, in Table 8 the proportion of fatalities occurring at junctions is given for each type of road, which on EU average is highest for urban roads.

In 2016, the reporting of junction accidents by type of road was relatively good for only 24 EU countries.

Figure 6: Distribution of road fatalities by country, “junction” and road type, 2016 or latest available year

The distribution of junction fatalities by type of road varies from 1% to 25% among the countries.



Source: CARE database, data available in May 2018

The share of junction fatalities is highest on urban roads.

Table7: Number and percentage of junction fatalities by country and type of road, 2016 or latest available year

	Motorway		Non-motorway				All roads	
	Fatalities	% at junction	Rural Fatalities	% at junction	Urban Fatalities	% at junction	Fatalities	% at junction
BE	101	3%	372	10%	207	22%	680	13%
BG	60	0%	372	2%	227	1%	659	2%
CZ	41	2%	411	13%	284	24%	736	17%
DK	25	0%	150	20%	92	30%	267	22%
DE	389	-	1.491	-	611	-	2.491	-
EE	-	-	-	-	-	-	-	-
IE	8	13%	145	21%	35	23%	188	21%
EL	-	-	-	-	-	-	-	-
ES	373	12%	1.130	15%	696	25%	2.199	18%
FR	271	1%	2.414	9%	1.272	20%	3.957	12%
HR	35	3%	107	9%	211	17%	353	13%
IT	276	1%	1.882	18%	1.885	22%	4.043	19%
CY	1	0%	11	9%	44	20%	56	18%
LV	-	-	130	2%	35	14%	165	4%
LT	-	-	-	-	-	-	-	-
LU	7	29%	19	0%	10	20%	36	11%
HU	37	0%	388	11%	297	25%	722	16%
MT	0	0%	9	11%	15	13%	24	13%
NL	77	0%	288	17%	294	31%	659	22%
AT	34	0%	325	11%	158	30%	517	16%
PL	50	0%	1.900	10%	1.589	20%	3.539	14%
PT	38	0%	241	7%	368	19%	647	14%
RO	26	0%	741	6%	1.353	12%	2.120	10%
SI	25	0%	60	2%	39	3%	124	2%
SK	14	0%	215	7%	183	15%	412	11%
FI	7	0%	178	2%	47	9%	232	3%
SE	17	0%	199	16%	105	30%	321	19%
UK	101	10%	1.433	20%	952	35%	2.486	25%
EU	2.013	3%	14.611	11%	11.009	20%	27.633	14%
CH	12	0%	138	10%	93	26%	243	16%

Source: CARE database, data available in May 2018

Type of Junction

Several types of junction are recorded in the CARE database and Table 8 shows the data for 2016. Junction type is not available for several countries and there are wide variations among the others.

Table 8: Distribution of junction fatalities by mode of transport and country, 2016 or latest available year

	At junction						Not at junction	Un-known	Total	
	At level crossing	At grade - crossroad	At grade - multiple junction	At grade - roundabout	At grade - T or staggered junction	Not at grade (interchange)				At junction - other
BE	0%	0%	0%	0%	0%	0%	13%	80%	7%	637
BG	0%	11%	0%	0%	0%	2%	0%	87%	0%	901
CZ	3%	8%	0%	0%	9%	0%	0%	80%	0%	611
DK	0%	10%	0%	0%	14%	0%	3%	72%	1%	211
DE	-	-	-	-	-	0%	0%	78%	22%	3.206
EE	6%	0%	0%	0%	8%	0%	3%	83%	0%	78
IE	0%	4%	0%	1%	11%	0%	3%	0%	82%	193
EL	-	-	-	-	-	-	-	92%	8%	793
ES	0%	7%	0%	4%	8%	0%	2%	79%	0%	1.810
FR	0%	6%	0%	1%	5%	0%	2%	86%	0%	3.471
HR	0%	7%	0%	0%	7%	0%	0%	85%	0%	307
IT	0%	10%	0%	2%	11%	0%	0%	77%	0%	3.283
CY	0%	4%	0%	0%	15%	0%	2%	78%	0%	46
LV	-	-	-	-	-	-	4%	96%	0%	158
LT	-	-	-	-	-	-	-	88%	12%	242
LU	0%	3%	0%	6%	3%	0%	0%	88%	0%	32
HU	0%	11%	0%	1%	6%	0%	0%	81%	0%	607
MT	0%	4%	0%	0%	9%	0%	0%	78%	9%	23
NL	0%	25%	0%	1%	0%	0%	0%	70%	3%	533
AT	4%	12%	0%	0%	2%	0%	2%	80%	0%	432
PL	1%	0%	0%	0%	0%	0%	16%	83%	0%	3.026
PT	0%	5%	0%	1%	8%	2%	0%	84%	1%	563
RO	1%	10%	0%	0%	0%	0%	0%	89%	0%	1.913
SI	2%	0%	0%	0%	0%	0%	0%	96%	6%	125
SK	-	-	-	-	-	-	-	-	100%	310
FI	3%	0%	0%	0%	0%	0%	0%	84%	13%	258
SE	0%	17%	0%	3%	0%	2%	3%	76%	0%	270
UK	0%	5%	0%	3%	20%	0%	6%	66%	0%	1.860
EU	0%	6%	0%	1%	5%	0%	3%	79%	5%	25.899
CH	0%	4%	0%	0%	11%	0%	0%	0%	85%	216

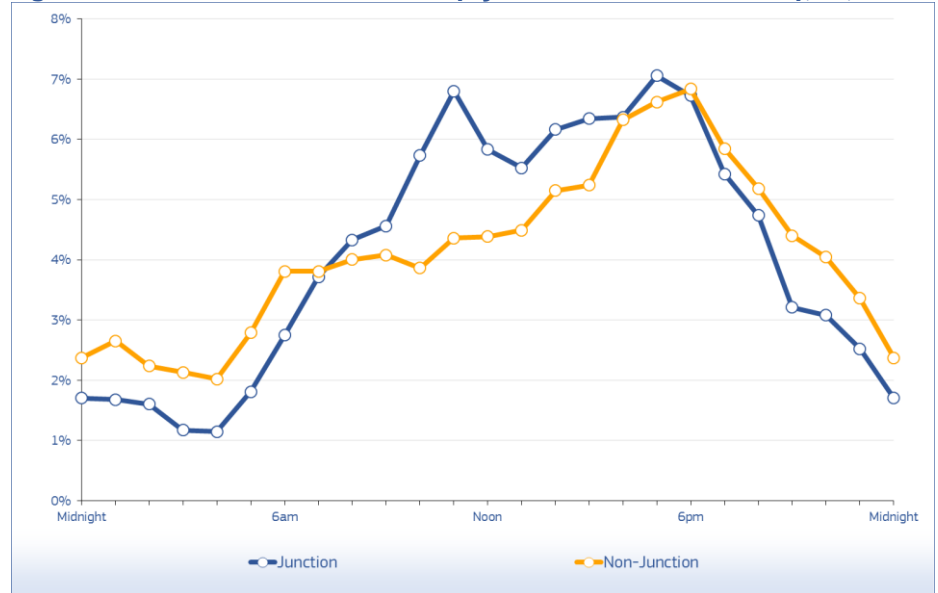
Source: CARE database, data available in May 2018.

Most fatal accidents at junctions occurred at “at grade – crossroad” and “at grade - T or staggered junction” types of junctions.

Day of the week and Time of the day

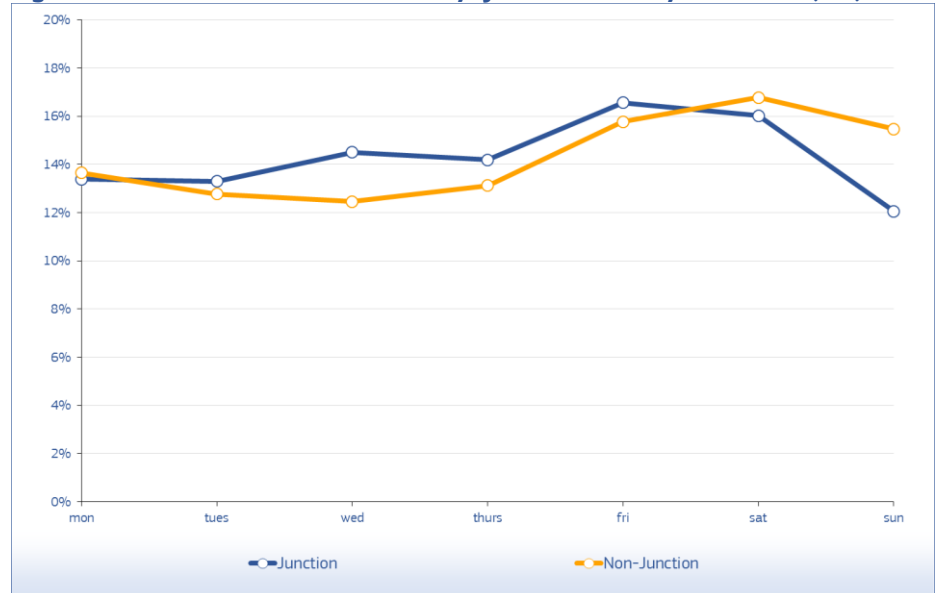
Figure 7 shows the distribution of fatalities in junction accidents by hour of day in the EU countries and compares this with the distribution of fatalities in non-junction accidents. This comparison shows that proportionately fewer people died at junctions during the night (8pm-6am) and proportionately more during the day (8am-4pm).

Figure 7: Distribution of road fatalities by “junction” and time of the day, EU, 2016



Source: CARE database, data available in May 2018

Figure 8: Distribution of road fatalities by “junction” and day of the week, EU, 2016



Source: CARE database, data available in May 2018

Proportionately more fatalities occur during daytime at junctions than away from junctions, and proportionately fewer during night-time.

By comparison with non-junction accidents, relatively few people died at junctions during weekends.

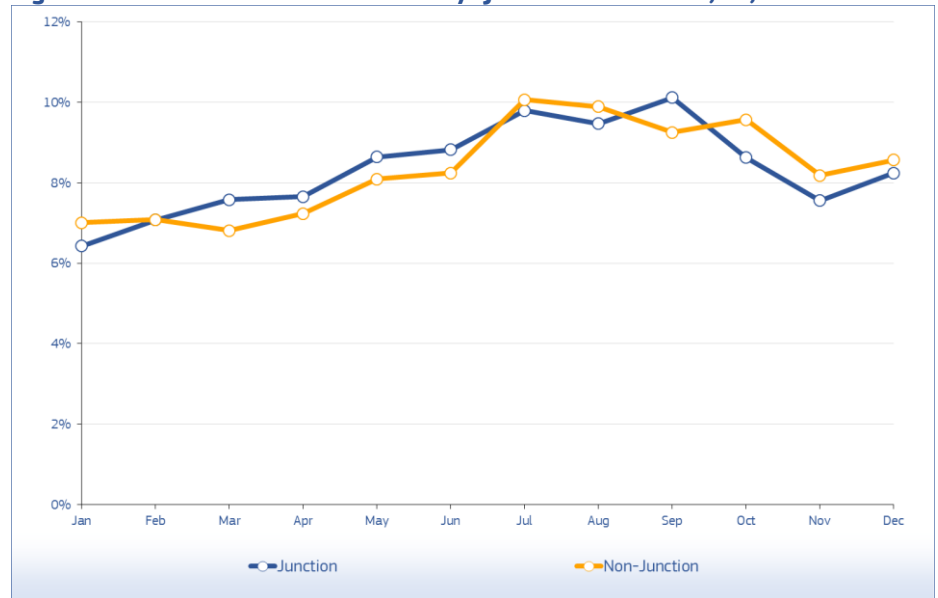
No marked difference was found between the distributions of junction and non-junction fatalities by month of the year.

Figure 8 shows the distribution of fatalities in junction and non-junction accidents in 2016 by day of the week in the EU. By comparison with non-junction accidents, relatively few people died at junctions during weekends and relatively many on weekdays (Monday -Friday).

Seasonality

Figure 9 shows the distribution of fatalities in junction and non-junction accidents in 2016 through the year in the EU. The two distributions are similar, but there were relatively many fatalities in junction accidents between March and June and in September, and relatively few from October to February.

Figure 9: Distribution of road fatalities by “junction” and month, EU, 2016



Source: CARE database, data available in May 2018

In 2016 more junction fatalities occurred when there were dry weather conditions.

Weather and Lighting conditions

Table 99 examines CARE data from the EU countries in 2016 to see whether the incidence of fatalities in junction accidents varies with weather condition. The numbers of fatalities in junction and non-junction accidents are shown first, followed by the distributions of junction and non-junction fatalities. The table also presents for each weather condition, the proportion of fatalities that occurred at a junction. This was highest for dry conditions (23%) and lowest in adverse conditions such as snow with 14% (Unknown excluded).

Table 9: Number and distribution of road fatalities by “junction” and weather condition and percentage of junction fatalities by weather condition, EU, 2016

	Dry	Rain	Fog or mist	Snow	Other	Un-known	Total
Number of fatalities in:							
Junction accidents	4.103	355	53	27	188	237	4.963
Non-junction accidents	13.834	1.935	314	169	868	2.647	19.767
Distribution of fatalities in:							
Junction accidents	83%	7%	1%	1%	4%	5%	100%
Non-junction accidents	70%	10%	2%	1%	4%	13%	100%
Proportion of fatalities occurring at junctions							
	23%	16%	14%	14%	18%	8%	20%

Source: CARE database, data available in May 2018

Table 10 repeats the analysis for lighting condition. The proportion of fatalities occurring at junctions was highest for accidents in the dark with lighting, and lowest in the dark with no lighting. This probably reflects the tendency for street lighting to be installed at junctions.

The proportion of fatalities occurring at junctions – as opposed to non-junction fatalities – was highest for accidents in daylight.

Table 10: Number and distribution of road fatalities by “junction” and lighting condition and percentage of junction fatalities by lighting condition, EU, 2016 or latest available year

	Darkness	Daylight	Twilight	Unknown	Total
Number of fatalities in:					
Junction accidents	1.142	2.839	180	766	4.927
Non-junction accidents	6.023	9.159	912	2.566	18.660
Distribution of fatalities in:					
Junction accidents	23%	58%	4%	16%	100%
Non-junction accidents	32%	49%	5%	14%	100%
Proportion of fatalities occurring at junctions					
	16%	24%	16%	23%	21%

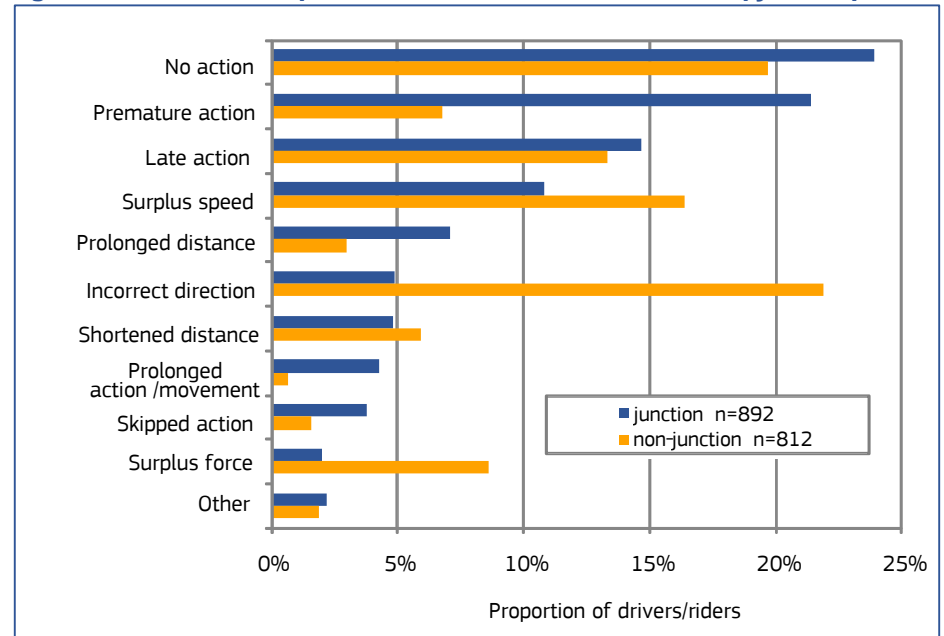
Source: CARE database, data available in May 2018

Accident Causation

During the EC SafetyNet project, in-depth data were collected using a common methodology for samples of accidents that occurred in Germany, Italy, the Netherlands, Finland, Sweden and the UK¹². The SafetyNet Accident Causation Database was formed between 2005 and 2008, and contains details of 1.006 accidents covering all injury severities. A detailed process for recording causation (SafetyNet Accident Causation System – SNACS) attributes one specific critical event to each driver, rider or pedestrian. Links then form chains between the critical event and the causes that led to it. For example, the critical event of late action could be linked to the cause observation missed, which was a consequence of fatigue, itself a consequence of an extensive driving spell.

48% (483) of accidents in the database occur at junctions. Figure 10 compares the distribution of specific critical events for drivers and riders in junction accidents to those in non-junction accidents.

Figure 10: Distribution of specific critical events - drivers or riders by junction presence



Source: SafetyNet Accident Causation Database 2005 to 2008 / EC; N=1704
Date of query: 2010

The specific critical events, no action, premature action and late action, are recorded more frequently in junction accidents, especially acting prematurely.

¹ SafetyNet D5.5, Glossary of Data Variables for Fatal and Accident Causation Databases
² SafetyNet D5.8, In-Depth Accident Causation Database and Analysis Report

The distributions are quite different for the most often recorded specific critical events. The specific critical events under the general category of 'timing', no action, premature action and late action, are recorded more frequently in junction accidents, especially acting prematurely. A premature action is one undertaken before a signal has been given or the required conditions are established, for example entering a junction before it is clear of other traffic.

On the other hand, incorrect direction, surplus speed and surplus force are recorded more frequently in non-junction accidents. Surplus speed describes speed that is too high for the conditions or manoeuvre being carried out, travelling above the speed limit and also if the driver is travelling at a speed unexpected by other road users. Similarly, surplus force describes excess acceleration or braking for conditions or actions. 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). Here it is likely that the wrong direction element will appear in junction accidents and the leaving road element in non-junction accidents.

Table 4 shows the most frequent links recorded between causes for drivers and riders in junction accidents. There are 1.001 such links in total for this group

Table 4: Ten most frequent links between causes - drivers/riders, junction accidents

Links between causes	Frequency
Faulty diagnosis - Information failure (between driver and traffic environment or driver and vehicle)	158
Observation missed - Temporary obstruction to view	92
Observation missed - Permanent obstruction to view	76
Observation missed - Faulty diagnosis	73
Observation missed - Distraction	62
Observation missed - Inadequate plan	55
Faulty diagnosis - Communication failure	55
Inadequate plan - Insufficient knowledge	53
Observation missed - Inattention	44
Observation missed - Permanent sight obstruction	24
Others	309
Total	1.001

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

16% of the links between causes are observed to be between 'faulty diagnosis' and 'information failure'.

Traffic Safety Basic Facts 2018 - Junctions

Observation missed is recorded most frequently and the causes leading to that can be seen to fall into two groups, physical 'obstruction to view' type causes (for example, parked cars at a junction) and human factors (for example, not observing a red light due to distraction or inattention). Following observation missed, 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 driver/rider thinking another vehicle was moving when it was in fact stopped 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).

Inadequate plan (a lack of all the required details or that the road user's ideas do not correspond to reality) is seen to lead to observation missed and be a result of insufficient knowledge.

Notes

1. Country abbreviations

 Belgium	BE	 Italy	IT	 Romania	RO
 Bulgaria	BG	 Cyprus	CY	 Slovenia	SI
 Czech Republic	CZ	 Latvia	LV	 Slovakia	SK
 Denmark	DK	 Lithuania	LT	 Finland	FI
 Germany	DE	 Luxembourg	LU	 Sweden	SE
 Estonia	EE	 Hungary	HU	 United Kingdom	UK
 Ireland	IE	 Malta	MT		
 Greece	EL	 Netherlands	NL	 Iceland	IS
 Spain	ES	 Austria	AT	 Liechtenstein	LI
 France	FR	 Poland	PL	 Norway	NO
 Croatia	HR	 Portugal	PT	 Switzerland	CH

2. Sources: CARE (Community database on road accidents)

The full glossary of definitions of variables used in this Report is available at:
http://ec.europa.eu/transport/road_safety/pdf/statistics/cadas_glossary.pdf

3. Data available in May 2018.

4. Data refer to 2016 and when not available the latest available data are used (2015 data for BG, 2010 data for SK, 2011 data for Germany, 2015 data for EE and 2014 data for IE). Totals and related average percentages for EU also include latest available data.

5 Data for Greece and Lithuania are not included in the totals. Slovakian data are not included in the totals of data comparing the years 2007-2016.

6. At the commenting of the tables and figures, countries with small figures are omitted.

7. This 2018 edition of Traffic Safety Basic Facts updates the previous versions produced within the EU co-funded research projects SafetyNet and DaCoTA.

8. Disclaimer

This report has been produced by the National Technical University of Athens ([NTUA](#)), the Austrian Road Safety Board ([KFV](#)) and the European Union Road Federation ([ERF](#)) under a contract with the [European Commission](#). Whilst every effort has been made to ensure that the matter presented in this report is relevant, accurate and up-to-date, the Partners cannot accept any liability for any error or omission, or reliance on part or all of the content in another context.

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9. Please refer to this Report as follows:

European Commission, Traffic Safety Basic Facts on Junctions, European Commission, Directorate General for Transport, June 2018.

