

'Light pollution'

Was and still is one of the undesirable effects that we are not warned about in any of the information issued by the lighting industry.

Ever greater light intensities are unnecessary, often distracting and sometimes downright dangerous.

Phototoxicity***Potentially harmful light rays that can cause retinal damage.***

The cornea and lens focus potentially dangerous light rays into the most important point of the human body: direct into the middle of the retina, the fovea centralis, the place of sharpest vision.

Photodamage to the retina is irreparable; acute lesions can be caused by unshielded lights, the most famous example being, watching a solar eclipse without a protective filter.

Phototoxicity must be prevented through 'light hygiene'.

Glare, irritation, distraction ('distraction blindness') and bio-rhythms disturbed by light at the wrong time ('chronodisruption') plus psychological and somatic sequelae are often played down. Glare causes electrophysiologically verifiable long-term (side) effects, after glare effects resemble 'driving in a dark tunnel'.

Sensitive, vulnerable structures of the visual and cognitive system require a much more cautious procedure when dealing with modern high-intensity lamps than was previously the case. The capacitive limits of cognitive processes and the limitations of the physiology of the senses must be taken into account.

The high brightness blue/white ('Blue Peak Hazard') from many LED lamps is unphysiological (the central area of the retina lacks blue cones: e.g. the physiological central blue scotoma); yellow light improves contrast vision, causes less glare and distracts less.

The caveat regarding epigenetic and prenatal imprinting goes unheard.

Blog: Blue writing in the blue scotoma. The human retinal fovea is 'blue blind, the wrong colour, especially in front of the recommended dark backgrounds (retinal protection). (PH 1.12. 2018) <https://ub.meduniwien.ac.at/blog/?p=31486>

Excessively bright light intensities, indoors, outdoors, hazard lights etc. all interfere with human sensitivity and perception. In traffic scenarios the consequences are potentially fatal.

In plain language

Short-wave, 'bluish' spectra dominated light sources, e.g., arc welding, car Daytime Running Lights (DRL), high-intensity Light Emitting Diodes (LED)/Bi-Xenon headlights, street lights and advertising hoardings are distracting and potentially eye-damaging, depending on intensity, spectrum, exposure duration and distance from the light source - and temporal summation (repetitive light damage).

Light-trespassing is to be avoided, that is to say light that penetrates into bedrooms from neighbouring property or street lighting which can cause sleep disturbances.

Sports field and ski slope illuminations usually are tailor-made for 'TV-compatible cameras' but not for the human eye.

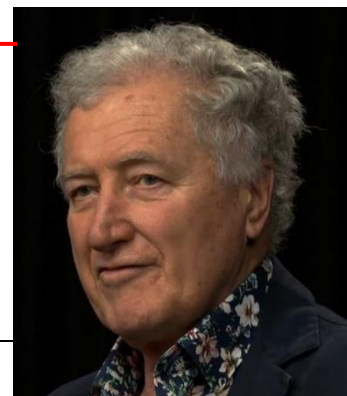
Bright 'security lights' ('Rottweiler light') do not drive away intruders. Globe lights, in 'Sky radiators' embedded in the ground and radiating upwards above the horizontal are obsolete.

Light emissions at the wrong time and in the wrong place cause 'light pollution' - an aerosol haze of light palling over urbanized landscapes blocking out the natural sky.

The solutions:-**Indoor Lights**

Should be softlight 'warm white', missing the 'blue peak' of the spectrum, still a nuisance in many commercially available LEDs.

The direct view into the light source should be avoided whenever possible. Once more: Bright light sources should never be seen directly with the naked eye.



a.o. Univ. Prof. emer.
Peter Heilig



Roy Milnes
Lightmare UK

Outdoor lights

Should be full cut-off (with no direct uplight and no light emitted above horizontal) only illuminating paths or streets downwards. (Upward Light Ratio (ULR ~ Zero)

Design and Regulation

Improved interdisciplinary cooperation is required between designers, regulators and health specialists, first and foremost eye-doctors. International Dark Skies Association specifications are a good guide.

The Lightmare

Light 'SINN'

Traffic Scenarios

In our increasingly risk-averse society, it seems incredible that when life-safety is at risk auto manufacturers are vying to outdo each other with brighter and brighter bluish white blinding lights.

Vehicle lights have developed from eye-tolerant tungsten to dazzling Bi-Xenon, blinding eye-damaging 6500k bluish white LED and even laser headlights.

Since DRL were mandated by EU ministers in 2011, accidents have increased in the EU, the UK and the USA.

[EU research organisation SWOV Factsheet](#) claimed 15% less fatal & 10% less injurious accidents.

Increased accidents

However, in 2019 higher than expected injuries and fatalities have occurred: -

The EU had 8,000 more fatalities

The UK had 10,000 more fatalities and seriously injured

The USA had 516,500 more fatalities and injured

2019 EU road safety report sums up the problem well:

"Whilst vehicles are equipped with an increasing amount of safety devices e.g. ABS, ASC, SIPS, RFT, Radar, Lidar, absorbent bumpers, crumple zones etc. and roads are engineered with safety as a priority, the expected year on year downward trend has halted"



The EU offers no explanation for the decline in road safety despite it being coincidental with the introduction and development of blinding lights that many drivers intensely dislike.

To justify their studies EU traffic "experts" used slides in a laboratory which cannot emulate the photon emissions beamed directly into a driver's eye. The EU then commissioned meta-analysis (studies of studies) which compounded their errors to produce the desired result.

Lighting manufacturers assume roads are billiard table smooth when designing lamps, a fact that regulators seem to overlook. Undulations in real traffic cause illegal blinding glare.

For evidence of how inaccurate their claims were, look at the EU, UK and USA road accident charts in Appendix 1.

Effect upon the brain

Continual exposure to blindingly bright lights and distracting stimuli (DRL) can cause overflow of visual short-term and working memory because overstimulation can produce 'seen' but ultimately not consciously 'perceived' objects which are extinguished in the cognitive processes.

The most vulnerable group of all road users: Children at pedestrian crossings **

Due to "Distraction Blindness"

Dazzle causes negative after-images and light in the peripheral field of vision from DRL can trigger 'distraction blindness'. Road users can also become less aware of each another through overstimulation, which distracts and increases risk to less conspicuous, more vulnerable road users.

Particularly affected are drivers who have had eye surgery and drivers who have retinal problems. They may have 20:20 vision but they can have longer [retinal recovery times](#)

This, plus straylight, can cause [temporary blindness](#) with fatal consequences.

Cumulatively, constant blinding light causes driver irritation and tiredness, putting the driver in an unsafe frame of mind. This annoyance can be an intangible contributory factor in the causation of accidents. A driver could be found guilty of causing an accident when the real criminals are the manufacturers and authorities permitting motorists to be distracted or even temporarily blinded!

**** In German Schutzweg = Safe Way, way of protection.**

The auto industry believes in 'superhuman' eyes and with disarming naivety almost infinite cognitive capacities.

"It has been suggested that Variable Message Signs (VMS) become less effective at communicating important traffic information when irrelevant information is displayed on them" (Thomas et al 2020).

"We waste our lights in vain, like lamps by day." William Shakespeare, Romeo and Juliette, Act I Scene IV. Mercutio

Elimination of blinding lights will provide increased safety and security for all road users. Every 'traffic-relevant object' in road traffic deserves exactly the same amount of attention.

No ETHICS commission in the world would approve such an unethical life or death 'experiment'.

Overaccentuated motorised vehicles (DRL) against vulnerable inconspicuous road users.

Law and Human Rights

Blinding light violates:

The convention concerning The Power of Authority;

The Law in Respect of the Protection of Infants;

The bond of protection;

The Principle of Equality;

Declaration of Human Rights (1948) Article Three;

The Laws of Logic; Public Ethics and Morals.

Attorney-at-Law Dr. G. G. SANDER, MA. Mag.rer.publ. states:

"Since 2011, all type-approved cars within the EU have to come with them as standard so-called 'daytime running lights'. This is in blatant contradiction to the above-mentioned laws and listed legally / logically founded principles".

This has yet to be proven in a law court.

An EU daytime running lights directive would be difficult to explain in terms of the rights of The Child's reconciliation act dated November 20, 1959 - children enjoy special protection.

Art. 2 Para. 1 of the International Covenant of 19 December 1966 on civil and political rights determines every child's legal status as a minor and the protective measures required by society and the state.

Compulsory, state-ordered driving with blinding lights contradicts protective obligations and children's rights.

The authors accept that a proportion of accidents could be due to distractors such as mobile phones and in-car touch screens, as well as being blinded, however, the authorities do not have the ability to quantify the proportions.

Conclusion

Lighting and auto industry, designers, architects and ministers seldom take into account the damaging effects of blinding light upon the retina.

Hazard Perception is inextricably linked to the Cognitive System, because some road users are less conspicuous and others are ablaze with light, which the brain cannot cope with.

The law decrees the use of blinding light to the detriment of less conspicuous more vulnerable road users - a policy based on the morality of the highwayman
"Mack the Knife".

Outdoor light pollution and light trespass requires action.

Every spark of energy that is saved helps mitigate the effect of climate change.

Artists imagine lovers strolling under a starry sky guided by the Milky Way on the shore of a bathing lake in a World Heritage site. Maybe one day we can regain this ideal not only for lovers but for the future of our children.

France had the correct solution with selective yellow headlights circa 1931 -1993.

France also decreed in 2019 that all external lights should not exceed 2700k (warm white) and focus downwards - other countries should follow.

[The Austrian Ophthalmological Society banned Daytime Running Lights in 2008](#)

Thousands of drivers have [petitioned against blinding lights this one](#) by [Softlights.org](#) USA has almost 30,000 signatures.

"Distracted driving is an increasingly deadly threat to road safety." (Stimpson et al, 2010)

How many more casualties will it take before authorities' act?

Closing stanza:

"Because some are in the dark"

"And the others are in the light"
(and the others drive with lights)

"And you see them in the light"
(with lights (DRL))

"You can't see those in the dark"
(distraction blindness - worst case)

[The Threepenny Opera](#) Bertolt Brecht 1930

Synopsis

The human eye is a vital organ of vision. It plays a very important role not only in life but also in the human body.

The eye gives us the sense of sight, allowing us to learn more about the surrounding world than we do with any of the other four senses.

Why are we being bombarded with eye-damaging phototoxic blinding light?

The Authorities have an implicit duty of care to prevent our eyes being damaged, this document shows the effect of the drive for commercial profit overruling worldwide medical expertise and the tragic consequences.

Solutions are proposed in Light SINN. Designers, regulators and authorities should be instructed to take note.

Publications:

[TRL Glare from Vehicle Lighting on UK Roads](#)

Thomas FMF, Charlton SG (2020) Inattention blindness etc , Accid Anal Prev 140: 105511. doi: 10.1016 / j.aap.2020

Posch T, Freyhoff A, Uhlmann T (Ed.) (2009) The End of the Night. Kindle

Goronczy EE (2018) Light pollution in metropolises, Springer

Krop-Benesch, A (2021) LIGHT OUT !? rororo Heilig P (2013) Blendung

<https://ub.meduniwien.ac.at/blog/?p=14844>
Heilig P (2019) Light hygiene

<https://ub.meduniwien.ac.at/blog/?p=33593>

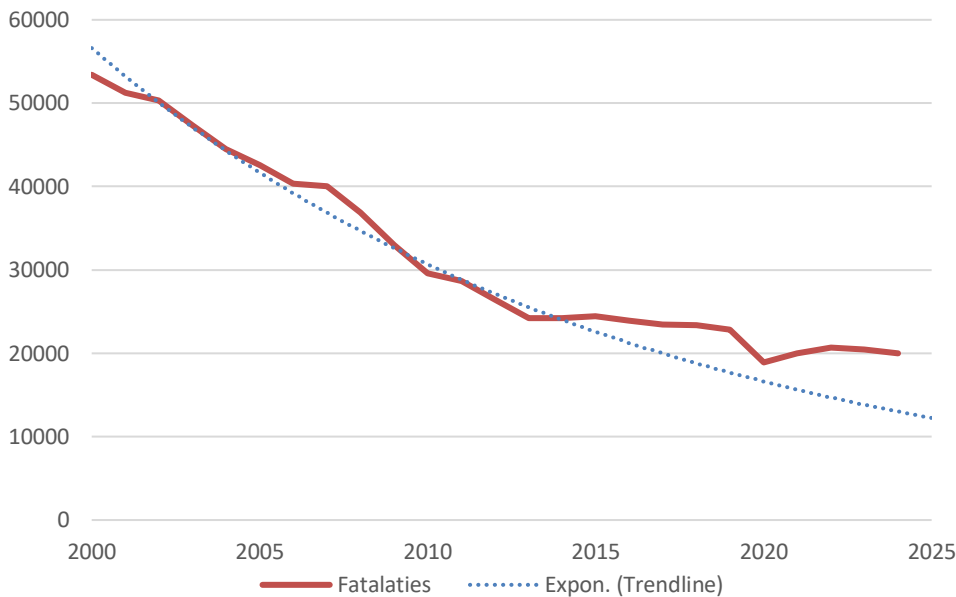
www.darksky.org/light-pollution

www.hellenot.org/themen/mensch

lightmare.org

EU Fatalities 2020 - 2025

Source EU Care + ETSC 2025 PIN



Source

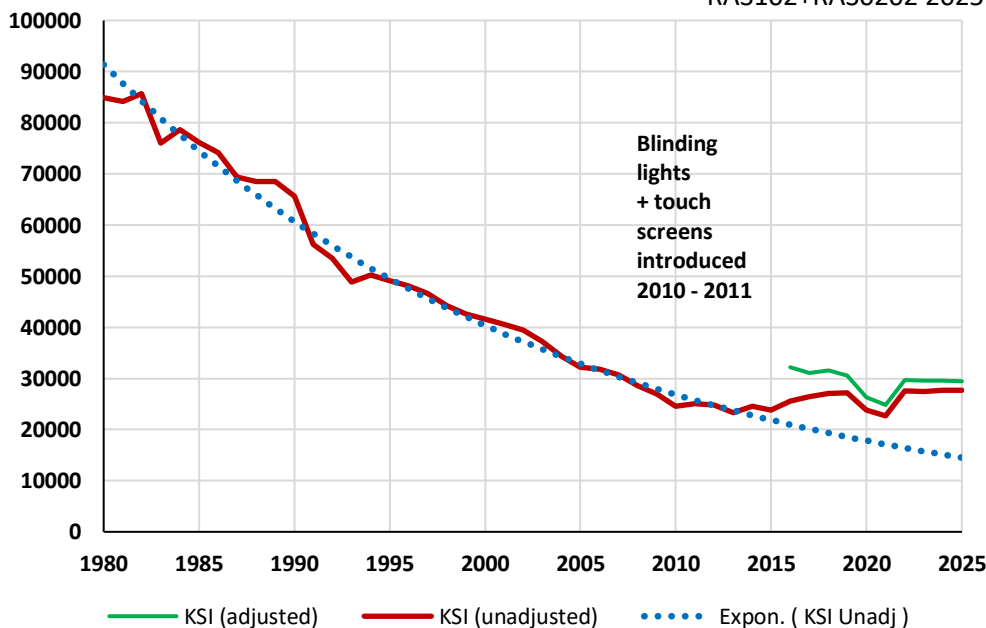
Care S2023 stats updated from

[19th Annual Road Safety Performance Index \(PIN Report\) - ETSC](#)

Extract from The ETSC Road Safety Performance Index (PIN) Report:

"We find ourselves at a critical juncture. We are now almost halfway through the EU's Road Safety Policy Framework period for 2020–2030. The collective goal of halving road deaths and serious injuries by 2030, while ambitious, remains both necessary and achievable. **But our latest findings are a sobering reminder that the pace of progress is far too slow. Since 2019, road deaths in the EU have decreased by only 12%. A reduction of more than twice that amount would have been needed by now to remain on track.** The 2% decline recorded between 2023 and 2024, while welcome, is simply nowhere near enough. In real terms, this means thousands of deaths not prevented, families grieving avoidable losses, and communities affected by tragedies that could have been avoided. **Behind these statistics lie immense human costs.** But the numbers also point to opportunity — and responsibility. They show us where meaningful, life-saving improvements have been made, and where urgent action is still needed."

UK Killed and Seriously Injured 1980 - 2025

Source DfT
RAS102+RAS0202 2025

Source

[Reported Road Casualties Great Britain Annual Report 2019](#)

RAS30059 Reported Road accident casualties by severity, Great Britain 1979 – 2019

Updated by

RAS0202: Reported road casualties by road user type, sex and age, Great Britain, 10 years up to 2024