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16. Abstract <p>Past work in vehicle lighting has focused primarily on the needs of the developed world. The goal of this study was to analyze how our understanding of lighting needs might be affected if the perspective was widened to the entire world, including the developing countries.</p> <p>Each year, worldwide traffic fatalities are increasing, with the vast majority of the increase occurring in the developing countries. These countries have 40% of the motor vehicles, but suffer 86% of all traffic fatalities. The primary safety problem in the developing world is collisions between vehicles and pedestrians. Furthermore, the crash rate is approximately three times higher in nighttime traffic than during the daytime. The crash type most overrepresented in darkness is pedestrian collisions, with a three to seven times greater fatality risk than during the daytime. Worldwide, an estimated 200,000 pedestrians are killed in night traffic each year. Over 90% of these fatalities occur in developing countries. A number of other nighttime crash types are also overrepresented, but causes other than darkness are more involved (e.g., alcohol, and fatigue).</p> <p>Analyses based on the limited information that is available were made of the crash and traffic situations in which automobile lighting plays a critical role and where an improvement in automobile lighting would increase safety. Results showed obvious differences between developed and developing countries. The large number of pedestrians killed in developing countries in night traffic is the major safety difference. This study suggests and evaluates improvements in automobile lighting that would reduce this safety problem in darkness for the world in general and for the developing countries in particular. Some other potential improvements of automobile lighting and other countermeasures are also discussed.</p>					
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