This naturalistic field study examined the effects of garment color (fluorescent yellow-green or fluorescent red-orange), the amount of background material (vest or jacket), pedestrian arm motion (moving or stationary), and driver age (younger or older) on the conspicuity of high-visibility safety garments during civil twilight. Distances at which drivers detected pedestrians wearing high-visibility garments were recorded. All of the challenges normally encountered when driving on public roadways were present, imposing a realistic level of driver workload.

The results indicate that only driver age produced a significant main effect on the conspicuity of pedestrians wearing high-visibility garments during twilight. The remaining findings were similar to the results of previous studies conducted during the day and at night. The findings from the current study, in combination with several previous naturalistic studies, suggest that, for the levels of the variables examined, 1) color does not affect conspicuity of high-visibility garments in daylight or twilight, 2) the amount of background material does not affect conspicuity in daylight, twilight or at night, 3) pedestrian’s arm motion does not affect conspicuity in daylight or twilight, 4) arm motion is significant at night, and 5) older drivers need to be significantly closer to detect a pedestrian at twilight or nighttime.