The Research on the Recognition of the Warning Traffic Signs to the Regular and Elder Drivers

Abstract

Progress of medicine and health care is changing our country into an aged society. As number of aged drivers increases their degenerating physical and mental ability in reading traffic signs may bring hazard to the public.

This research was to investigate the capability of the elderly in recognizing traffic signs while driving, including the elderly capability in recognizing warning signs of various forms, difference in recognizing signs of concrete type abstract type, difference of recognizing capability between elderly and regular participants, and what is the different of sign recognitions in the elderly and regular participants, total 3 issues.

The experiment use the simulation in the lab was employed for the investigation. According before three issues, to ask the participants to watch the traffic signs of various sizes on screen. This experiment uses the Method of Limits and lower absolute threshold. The figure of the signs on the screen was played from small to large, then to ask the participants to judge the height of the minimum in the figure of the signs.
Recognition of Traffic Warning Signs by Younger and Elderly Drivers

Abstract

(195 words, as submitted; 144 as corrected)

As Taiwan increasingly elderly drivers declining, our country is changing to become an aging society, and the elderly ones with physiological and mental ability declines are confronted with some difficulties in recognizing traffic signs while driving.

The present study aimed to investigate the capacity for traffic sign recognition on older and regular drivers, and three issues were included, which are the recognizability of general signs on regular and elderly drivers, the difference in recognizability between abstract and concrete signs, and the difference in the capacity of sign recognition between regular and elderly drivers.

The results showed the capacity for sign recognition of elderly was lower than regular ones, but the recognition ranking order was almost the same between two groups. Abstract signs had better recognizability than concrete ones did, and the variance of judging performance on this kind of signs was smaller.

As for the minimum safety distance for sign recognition on elderly, the signs W-35, W-21, and W-33 did not pass the safety level under the driving speed of 60 km/hr. All the signs could not meet the safety standard under the condition of driving in 90 km/hr, and the government should take them seriously and try to solve them.

Keyword: Elder, Traffic Signs, Recognition, Warning Traffic Signs.

Relevance to Design Practice –

The present study investigated the capacity for recognition of common traffic signs, and inspected the
The result of the research was apparently, the elder and regular participants were almost similar in the properties of recognition of the traffic signs, the difference is 0.129 arc minute, the elder participants was lower than the regular participants in the recognition.

The comparison of the abstract and concrete traffic signs in recognition to find the abstract traffic signs are easy to recognize than the concrete traffic signs, the main reason is the abstract traffic signs have the more simple and explicit character than the concrete traffic signs.

The ideal recognition of the signs have the smaller recognition difference, relatively, the worse recognition signs have the larger recognition difference.

If speed limited in 60km/hr, aim at the elderly drivers, the number W-35, W-21, W-33 did not arrive the minimum recognition level.

The Provincial road was limited the speed in 70km/hr, aim at the regular participants, the number W-37, W-9, W-44, W-10, W-39, W-43, W-33 did not arrive the minimum recognition level, but all not arrive the minimum recognition level in the elder participants.

The Highway speed limited in 90KM, the elder participants in the minimum recognition distance far away the official ideal minimum recognition distance, this result will cause the traffic accidents, the government of the relative departments must pay attenuation in this phenomenon and solve the problems.

Keyword: Elder, Traffic Signs, Recognition, Warning Traffic Signs.
Relevance to Design Practice

The research on the recognition of the Warning Traffic Signs in Regular and Elder Drivers, in this research provides an approach for designing the traffic signs that facilitate the driver to recognize the warning traffic signs, to increase the safety of driving.

1. Introduction

In Taiwan the medicine technology progress and the environment was improve in these years, the dead proportion in the was reduce year by year, according the statistics from lecture in 1993, Taiwan was became an elderly country (65 years old elder occupy the country in 7%), that mean Taiwan had become an elderly society. * I have significantly improved the English in this paragraph, but some of it still does not make good sense. Check the percentage (7%). How can a society be called "elderly" on the basis of such a small percentage? After retirement, the elderly, who enjoy high priority in society, have more time to participate in outdoor activities; therefore, they depend more heavily on transportation. Because the elder was high propriety in the society, and the elder retire have more the free time to participants the outdoor activity, and they depend on the transportation will more deeply.

The all the traffic accident events in the elder, mostly factors was relate with the traffic sign design, but the traffic signs was used many years in Taiwan, but most of the traffic sign was imperfect always cause the in worse recognition rate for the elderly requirements, and the ideal traffic sign design, will offer a clear and understood conduction to the driver, and mention the driver select a correct behavior to prevent the traffic accident. The worse traffic signs design was effects the elder driver even more the normal driver to the elder, because the elder was worse in the physiology and psychology condition also worse in the recognition ability, cause the larger loading and bother them when they driving, according these problems, we don't have much reference and research in Taiwan, and most references and discussions was build in the traffic installation issues, rarely in the researches, the