

## Research Trends and Results

# What is the road that makes a feel of human priority?

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### 1. Introduction

On 2012, there arose a series of traffic accidents that involved children and students going to or coming back from school, thus raised the urgent task of making the traffic security countermeasure of the school road.

At present, as the traffic security countermeasure for the community road including the school road, MLIT and National Police Agency have designated total 1,300 areas as "Relief walking area" since 2003 and significantly proceeded on upgrading the footway, enlarging the side strip, introducing the road structure able to control the driving speed such as Hump, the limit speed control and ?, but it is imperative to continuously practice such countermeasures.

However, though pedestrians and bicycles mainly use the community roads, almost all of them have narrow road width, then it is difficult to secure their space separately from the motorway. Furthermore, it is required to adopt such a countermeasure that is low cost and easier to prevail as the community roads are long and widely spread.

Accordingly, in this research we focused on the road cross-road composition to research the relation of such cross-road and walking speed in order to understand what is the road to make a feel of human priority.

### 2. Driving speed subject to the composition of the road cross-road

The research was carried out by human subjects who run through the computer graphic (hereafter CG) image space under integrated areas along the road using the Driving simulator (hereafter DS), in which driving speed and driving route are recorded on respective image space and impressions (s)he felt on running through was grasped through query. The CG roads are classified by total 23 types having three width such as 4m, 6m and 8m with or without road strip, different width and color, with or without center line and so on. There was no consideration on the oncoming vehicle and foot passenger.

As a result, lower driving speed was obtained in the 6m width road with chicane road strip and full color CG image without chicane road strip.

On the other hand, although we could not have a distinct result on the restrictive effect on the driving speed by enlarged road strip and colorized road, we have received a number of responses that raised the colored road strip as one of the factors that have made them

restrict the driving speed.

Furthermore, in an example that we have made one cross-section of the CG image a still and showed several stills to the same human subject and asked which was the one made him a feel of human priority, most preferred one was the motorway of 2m with road strips 2m X 2 for the case of 6m road (Left bottom of the Fig. 1).

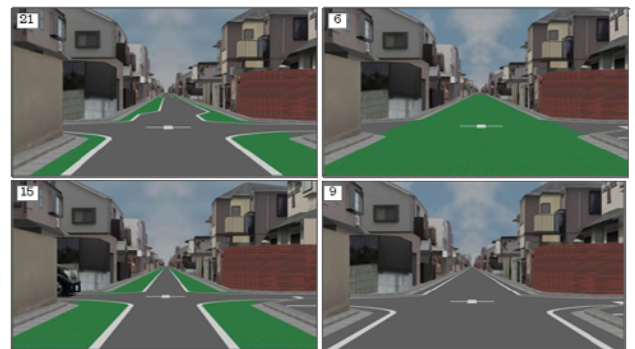


Fig. Examples of CG images used for the DS research (Width 6m)

Left top: Chicane road strip (1m x 2m), Right top: Full color road, Left bottom: Road strip 2m X 2, motorway 2m, Right bottom: Road strip 1m X 2, motorway 4m

### 3. Future deployment

We are to continuously observe the driving speed on the actual road of similar condition without affected by the foot passenger and oncoming vehicle so as to make a summary of the relation with the cross road composition and make comparison with the DS research.

At present, as several examples have shown effect of the enlarged and/or colored road strip, we are willingly to make clear which cross road composition is the most effective to restrict the driving speed and support the traffic safety countermeasure if the community road that is effective and having better efficiency.

### 【Reference】

1) Research on the Driving speed variation due to difference of the road factor composition" by OKIMOTO Hiroto, HONDA Hajime, TAKAMIYA Susumu in the 32<sup>nd</sup> Traffic engineering research presentation papers, September 2012