Different congestion indications on dynamic route information displays

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Abstract

A new type of dynamic route information display is the Full Colour Information Panel (FCIP). The advantage of an FCIP is that it can display a route map, travel time and congestion at the same time. There are different ways to depict maps with travel times and congestion, for instance, with colour, a congestion sign or a combination of both. An experiment was carried out to study various designs. No difference in reaction time between the different congestion representations was found when the participants were required to choose the quickest route. However, there were differences in reaction time if extra signs were included on the FCIP. Contrary to what was expected, reaction time was not affected by FCIPs with a congestion depicted on a route with less travel time than the other routes. However, if shown successively these FCIPs did affect reaction time for FCIPs on which the congestion was consistent with travel time.

Introduction

The present experiment is a follow-up of the EU TravelGuide project (Roskam et al., 2002), involving the design and layout of a specific dynamic route information display, the Full Colour Information Panel (FCIP), positioned over the motorway at the entrance of the city of The Hague. FCIPs are dynamic and able to display any graphical information. This specific FCIP can display a route map and the travel time of each of the three routes. The route-choice that motorists will make depends upon the information they receive. People may not only choose the route with the least travel time, they could also consider the (potential) presence of congestion (Bovy, 1989). In order to make such a choice, these elements should be depicted on the FCIP. There are different ways to depict a congestion on a FCIP, e.g. by means of a colour, with a congestion sign or a combination of both.

Congestion sign and colour use

The obvious way to depict a congestion is using a standard congestion sign, a queue of cars in a red triangle. The congestion sign is widely used, so motorists are familiar with the sign and its meaning. A second option to indicate congestion is using