The paper explores key events and investigates their effects on cycling behaviour in the city of Dar-es-Salaam, Tanzania. The objective of the study is to identify specific key events during a person’s life course with a significant effect on change of travel behaviour towards cycling in relation to stage of change. Stage of change is a key construct of the transtheoretical model of behaviour change that defines behavioural readiness (intentions and actions) into six distinct categories (i.e., pre-contemplation, contemplation, prepared for action, action, maintenance, and relapse). By using a binary logistic regression model, it was possible to identify the key events that influenced change of travel behaviour among 450 daily commuters in different stages of change of cycling behaviour. Model results have shown that income generation, poor daladala (public transport) service, and harsh behaviour of daladala operators have a significant impact on changing to maintenance stage. After marriage, after child birth, past incidence of car accident on bicycle, feel shame on bicycle, fear of losing virginity among girls and shifting from small towns to Dar-es-Salaam where cars are the common mode of travel, have a significant impact on cycling especially moving from maintenance to relapse stage of cycling behaviour.

Fast Feelings - An experimental study of cycle helmets’ effect on cycling pace and emotional reactions
Fyhri, A1 & Phillips Ross, O.
Institute of Transport Economics, Norway1

It has been suggested that risk compensation reduces the effect of bicycle helmets. The current article tests the hypothesis that risk compensation does not occur among cyclists unaccustomed to wearing a helmet. This was investigated in a field experiment where pace and psychophysiological load was measured. The results show that routine helmet users cycle slower when the helmet is taken away, and that the change in speed was accompanied by an altered emotional state. Non-users did not change their behaviour. The results are interpreted as inconsistent with a risk compensation theory of bicycle helmets, since the observed behavioural change among routine helmet users is probably of a transient nature. The value of using HRV measures has been substantiated by introducing better control of amount of physical load.

A Study about Factors of Side Crash between Bicycle from Sidewalk with Vehicle
Suzuki, M1, Miyanoue, K., & Yai, T.
Department of Built Environment, Tokyo Institute of Technology, Japan1

In Japan, around 50% of accidents between bicycles and vehicles occur at non-signalized intersections, and around 80% of accidents at small, non-signalized intersections are side crashes, with the most hazardous case being an accident between a vehicle on a narrow side road and a bicycle on the sidewalk of a wider road. Moreover, another factor in collisions is that people are allowed to cycle on sidewalks with two-way traffic; for this reason, cycling on sidewalks is more dangerous than cycling on roads. In fact, the bicycle accident rate in Japan is higher than in the United States and EU countries.

To investigate vehicle driver maneuvering and visual behavior at small, non-signalized intersections with a narrow field of view, laboratory experiments were conducted using a MOVIC-T4 driving simulation system. We observed differences in driving characteristics caused by structural design, road infrastructure, and traffic situations at such intersections. As a result, we indicated the factor of design or situation (especially bushes side of sidewalks and a leading vehicle) which leads up to accidents at intersections.

Symposium - Driver experience, awareness and (change) detection
Friday 31st of August, 13:30 - 15:30 - Ronde zaal

Change detection and driving performance on familiar roads
Charlton, S.1
University of Waikato, New Zealand1

This paper describes our thoughts on the nature of everyday driving, with a particular emphasis on the processes that govern driver behaviour in familiar, well-practiced situations. This research examined the development and maintenance of proceduralised driving habits in a high-fidelity driving simulator by paying 29 participants to drive a simulated road regularly over 10 weeks of testing. A range of measures, including detection task performance and driving performance were collected over the course of 20 sessions. Performance from a yoked control group who experienced the same road scenarios in a single session was also measured.

The data showed the development of stereotyped driving patterns and declines in change detection performance indicative of attentional blindness and “driving without awareness”. Extended practice also resulted in increased sensitivity for detecting changes to foveal road features associated with vehicle guidance and performance on an embedded vehicle detection task (detection of a specific vehicle type). The changes in attentional focus and driving performance over time provide new light on a range of previous research findings and led to the development of a “Tandem Model” that includes both explicit and implicit processes involved in driving performance.

Drivers’ ability to detect changes in timing at signalized intersections
Vreeswijk, Jl, Van Berkum, E., & Van Arem, B.
Peek Traffic bv / University of Twente, The Netherlands1

Drivers have limited awareness of changes in trip attributes or the performance of the traffic system. Due to non-utilitarian behavior and perceptual biases a distinctive amount of changes go unnoticed or are valued incorrectly, which makes drivers indifferent to changing traffic conditions to a certain extent. Defining the indifference band and understanding the probability of behavioral response to changes is valuable input for road operators and traffic engineers designing traffic management measures.

To explore the thresholds of the indifference band, a field study was conducted. The study focused on the ability of drivers to observe and rightly value differences in the timing of traffic lights, in particular where the length of the red phase is concerned. Results confirm that drivers have limited awareness of differences in the length of the red phase of traffic lights, both in absolute and relative sense. Moreover, a large range of waiting times are perceived by drivers as being close to the average waiting time, which offers some insight in the indifference band. However, if the reason for waiting is not intuitive the perception of drivers becomes more accurate and their awareness increases (indifference band narrows).