Route choice dynamics after a link restoration
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Abstract
Carrion, and Levinson (2012) studied the bridge choice behavior of commuters before and after a new bridge opened to the public. This bridge replaced the previously collapsed I-35W bridge in the metro area of Minneapolis-St. Paul. The original I-35W bridge collapsed on August 1st 2007, and the replacement bridge opened to the public on September 18th 2008.

This study extends Carrion, and Levinson (2012) by considering explicitly the day-to-day behavior of travelers, and by also considering the previously excluded subjects that are transitioning between bridge alternatives not including the I-35W bridge. The primary results indicate that the subjects react to day-to-day travel times on a specific route according to thresholds. These thresholds help discriminate whether a travel time is within an acceptable margin or not, and travelers may decide to abandon the chosen route depending on the frequency of travel times within acceptable margins. The secondary results indicate that subjects previous experience, and perception of the alternatives also influence their decision to abandon the chosen route.

Objectives
Understand the influence of information of past trips on future route choice behavior.
Identify the factors that govern the decision of travelers to leave the current route choice.

Data
GPS : 65 subjects following no instruction from researchers in a period of 8 to 13 weeks.
Electronic Survey : Comprehensive evaluation of bridge alternatives by the 65 subjects.

Conclusions
The primary results indicate that both the Fixed Thresholds, and the Moving Thresholds models are found to capture the dynamics of the data, but the the Fixed Thresholds should be preferred. In addition, the late trips are more persistent in the subjects’ travel time moving sets in comparison to the subjects’ early trips. It is also found that both margins to classify whether a trip is an early trip or a late trip are asymmetric. Subjects are tolerant to small increases above the mean in their travel experiences. The secondary results indicate that subjects’ perception (i.e. fear, travel distance) of the alternatives also influence their decision to abandon the chosen route.