Data Collection by Serious Gaming

Everscape: a new 3D multi-user virtual environment for data collection on travel choice behaviour in case of a tsunami

Data collection methods can be divided in Stated Preference (SP) and Revealed Preference (RP). With SP, a hypothetical situation is considered BUT is this what people do in reality? With RP, the actual situation is considered BUT it is hard to reconstruct. Therefore, we developed Everscape.

Pilot experiments with Everscape

We have conducted 3 pilot experiments with experts from the field of traffic and transport (2 at TRB-2012 & 1 at PLATOS-2012).

The main goal of these pilot experiments was to find out if Everscape provides opportunities for data collection on travel choice behaviour in case of a tsunami.

Setup pilot experiments

Virtual experiment: go to island to see concert, evacuate from tsunami.

Questionnaire: e.g. personal characteristics, what people did during virtual experiment & why, experience with disasters, computers & gaming.

Discussion: e.g. being part of multi-user environment, ‘serious gaming’ experience.

Results

Positive aspects: controlling the avatar (walking) is good, the earthquake feels realistic and people were aware of the other participants.

Suggestions for improvement: controlling the car, add screaming sounds to invoke sense of urgency, make it possible for groups to participate (e.g. get in/out car & train together).

Research plan

- Comparable SP survey
- Large experiment: Everscape extended with SP survey
- Estimating choice models

Conclusions

We consider Everscape to be an enriched SP tool because:
- Participants are more part of the experience compared to a standard SP survey and they are aware of the other participants.
- The situation can be fully reconstructed: detailed trajectory and event data are available.
- It is possible to combine it with an SP survey.

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M. van den Berg*
E. Doirado**
R. van Nes*
J.W.C. van Lint*
H. Prendinger**
S.P. Hoogendoorn*
*TU Delft
**NII (Tokyo, Japan)

Contact: M. (Mignon) van den Berg, MSc
Delft University of Technology,
Civil Engineering and Geosciences, Transport & Planning
m.vandenberg@tudelft.nl

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While enjoying concert...

an earthquake strikes

Evacuate!

To helicopter:

short route

long route

train

Safe!