



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*.



While enjoying concert...

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).

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.



an earthquake strikes

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.**



Evacuate!

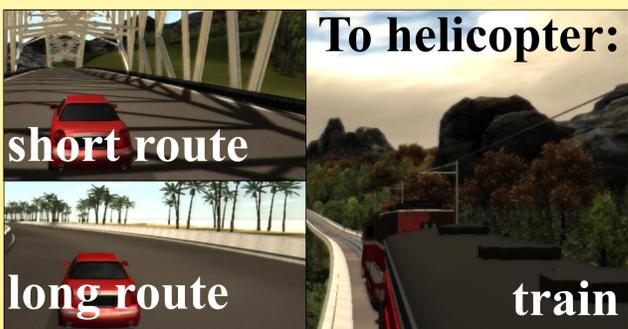
Results

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

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.



To helicopter:

short route

long route

train

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).



Safe!

Research plan

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

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