PEDESTRIANS' BEHAVIOR AT UNSIGNALIZED CROSSWALKS: COMPARISON OF RESULTS BASED ON SIMULATED URBAN ENVIRONMENTS WITH FIELD OBSERVATIONS
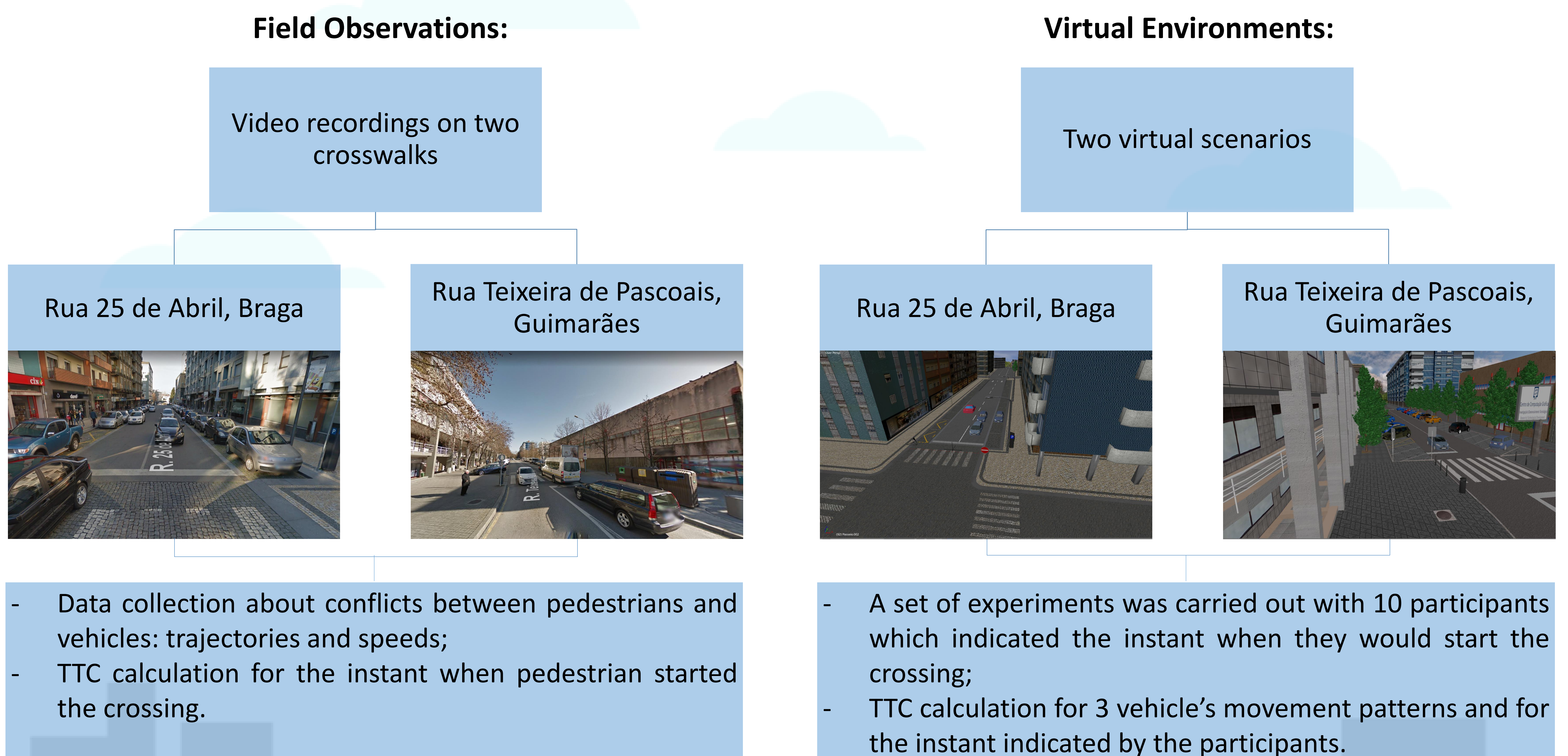
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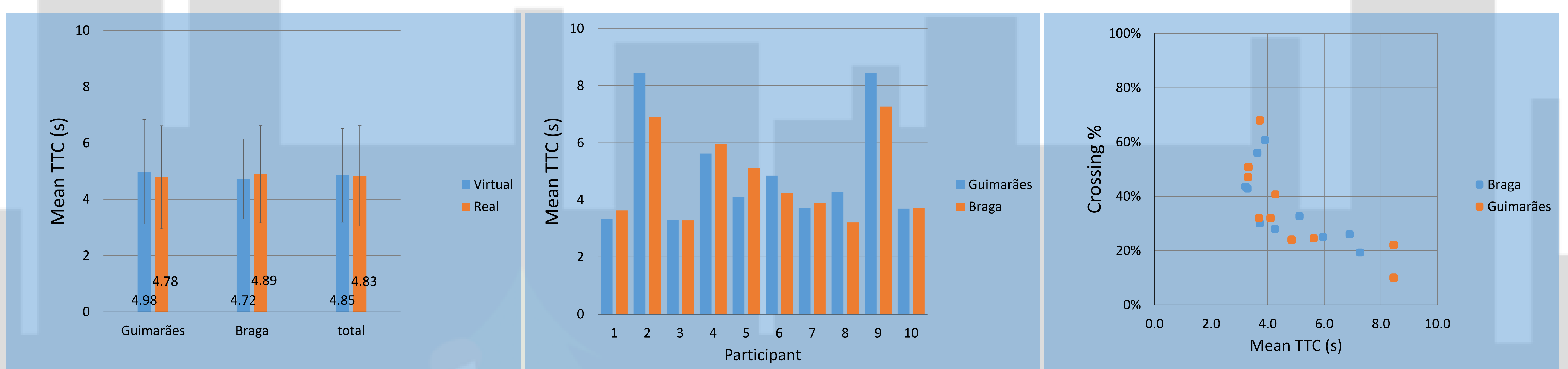
I. INTRODUCTION

Walking is the cleanest mode of transportation on earth, but the it is still one of the most dangerous. Knowing the pedestrians' behavior in conflict zones is an essential step to reduce pedestrian crashes. The methods for this kind of analysis pass through sophisticated simulation methods, such as the virtual environments.

This research is a part of the project AnPeB, the first approach done to the pedestrians' behavior analysis on a pair of virtual urban environments recently developed, comparing the data collected through their implementation with field observations.

II. METHODOLOGY

Field Observations:

Video recordings on two crosswalks

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Rua Teixeira de Pascoais, Guimarães

- Data collection about conflicts between pedestrians and vehicles: trajectories and speeds;
- TTC calculation for the instant when pedestrian started the crossing.

Virtual Environments:

Two virtual scenarios

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Rua Teixeira de Pascoais, Guimarães

- A set of experiments was carried out with 10 participants which indicated the instant when they would start the crossing;
- TTC calculation for 3 vehicle's movement patterns and for the instant indicated by the participants.

III. RESULTS

IV. CONCLUSION

- Validation of virtual scenarios for pedestrians' behavior analysis is achieved;

- Highly immersive and detailed environment has been developed;

- Valid experimental protocol, however with some limitations (e.g. participant standing in the same position during all the experiment);

- Need for a better exploration for the data collected with the virtual environment experiments to take all the benefits of this kind of approach.