Pedestrian collision avoidance on narrow sidewalk: a meeting between psychology and virtual reality
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**First Experiment – Questionnaire**
- 64 videos of pre-jousting, before any modification of trajectory
- 40 videos of complete jousting with the new model.

**Second Experiment – Questionnaire**
- 8x8 counterbalanced videos
  - 4 videos of complete jousting with the new model.
  - 4 videos of complete jousting with the opposite of the model result.

**Social Perception Model**
- Speed and attention influence the decision to step down from the narrow sidewalk.

**Assumptions**
- Speed and attention increase the detection time in the ORCA model. Detection time is then a score.
- The virtual pedestrian decides to step down if his detection time is greater than the other pedestrian involving in the jousting.

**N.B.**
- The virtual pedestrian sees pedestrian in the public space, and detects him in the social space.

**Discussion**
- To use Social Pedestrian Non Player Characters in VR environment is feasible.
- Needs to take into account the empowerment/authority.

**PEDESTRIAN COLLISION AVOIDANCE ON NARROW SIDEWALK: A MEETING BETWEEN PSYCHOLOGY AND VIRTUAL REALITY**

**Context:** NARROW SIDEWALKS
- On narrow sidewalks, pedestrians are likely to encounter other pedestrians.
- To simulate a social virtual pedestrian in a virtual environment.

**Goal:**
- To simulate a social virtual pedestrian (non player character) in order to study this kind of situation in virtual environment.

**Problem:**
- Why do we choose to step down or stay on the narrow sidewalk when we encounter a pedestrian walking in the opposite way?

**Impact of 3 personal factors were studied**
- Speed (fast – slow)
- Sex (Male – Female)
- Distraction (texting – non texting)

**Perception model for the virtual pedestrian**
- ORCA model used.
  - different types of collision avoidance (anticipative, reactive)
  - Collision avoidance behaviors are a function of the walking speed, the detection time.

**Social pedestrian decision (virtual reality)**
- Pedestrian decides to step down if his detection time is greater than the other pedestrian involving in the jousting.

**Overall ranking of the model-based videos, Median = 4**

**Participants said…**
- One of 8 videos is a fake video.
- Participants said why the virtual pedestrian stepped down (speed, sex, distraction) with Likert scales.
- Participants told who was to step down:
  - 64 videos of pre-jousting, before any modification of trajectory
  - 40 videos of complete jousting with the new model.

**Participants said if the jousting is credible**
- * He is attentive
- * He walks fast
- * He is attentive
- * For the participants, no gender effects

**Discussion**
- Needs to take into account the empowerment/authority.
- To use Social Pedestrian Non Player Characters in VR environment is feasible.