



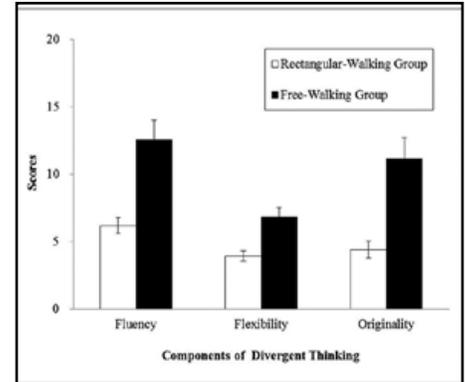
# IMPROBABLE RESEARCH: WALKING WITH CHOPSTICKS AND CROWDS

*Improbable theories, experiments, and conclusions*  
 compiled by Dirk Manley, Improbable Research staff

## Walking While Generating Unusual Uses for Chopsticks

“Sensorimotor-Conceptual Integration in Free Walking Enhances Divergent Thinking for Young and Older Adults,” Chun-Yu Kuo and Yei-Yu Yeh, *Frontiers in Psychology*, epub, October 13, 2016. (Thanks to Dor Abrahamson for bringing this to our attention.) The authors, at National Pingtung University, and National Taiwan University, Taiwan, explain:

Participants in the rectangular-walking condition walked along a rectangular path while generating unusual uses for chopsticks. Participants in the free-walking group walked freely as they wished, and participants in the free-generation condition generated unconstrained free paths while the participants in the random-experienced condition walked those paths.



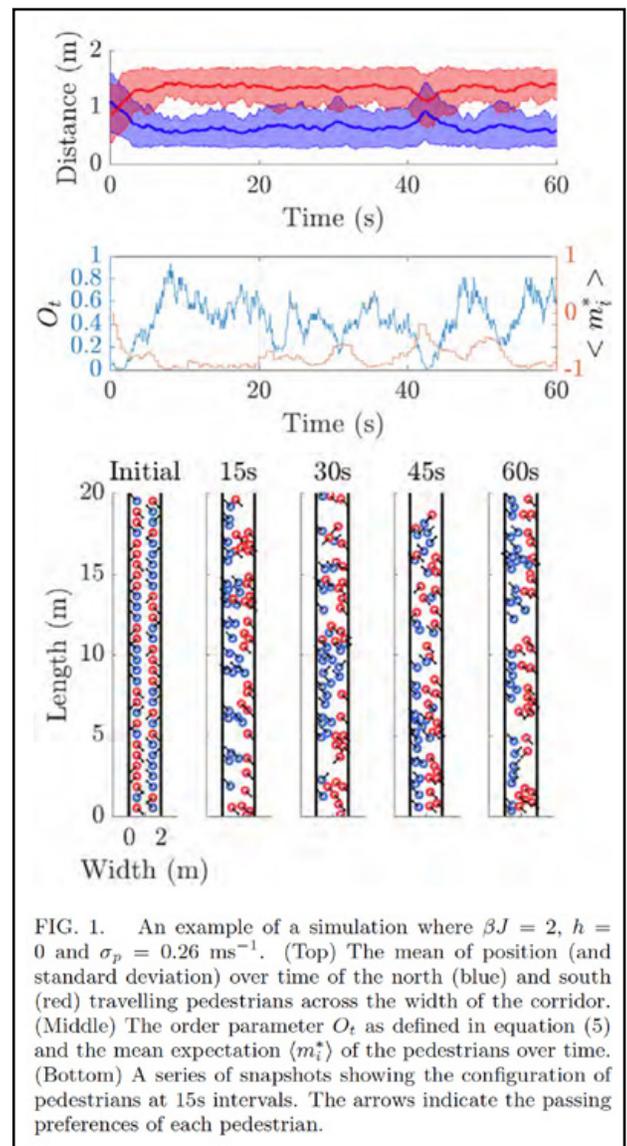
## Preventing Pedestrian-Pedestrian Collisions

“Symmetry Breaking in Pedestrian Dynamics,” Nickolas A. Morton, Shaun C. Hendy, arXiv:1605.05437v1, epub, May 18, 2016. (Thanks to Mason Porter for bringing this to our attention.) The authors, at the University of Auckland, New Zealand, report:

When two pedestrians travelling in opposite directions approach one another, each must decide on which side (the left or the right) they will attempt to pass. If both make the same choice then passing can be completed with ease, while if they make opposite choices an embarrassing stand-off or collision can occur. Pedestrians who encounter each other frequently can establish “social norms” that bias this decision. In this study we investigate the effect of binary decision-making by pedestrians when passing on the dynamics of pedestrian flows in order to study the emergence of a social norm in crowds with a mixture of individual biases. Such a situation may arise, for instance, when individuals from different communities mix at a large sporting event or at transport hubs. We construct a phase diagram that shows that a social norm can still emerge provided pedestrians are sufficiently attentive to the choices of others in the crowd. We show that this collective behaviour has the potential to greatly influence the dynamics of pedestrians, including the breaking of symmetry by the formation of lanes.

*TOP RIGHT: Detail from the study “Sensorimotor-Conceptual Integration in Free Walking Enhances Divergent Thinking for Young and Older Adults.”*

*RIGHT: Detail from the study “Symmetry Breaking in Pedestrian Dynamics.”*



*We welcome your suggestions for this and other columns. Please include the full citation (no abbreviations!) and, if possible, a copy of the paper.*