SIMULATING THE IMPACT OF FIRST RESPONDER COMMUNICATION STRATEGIES ON CITIZEN ADHERENCE IN EMERGENCIES
- ANNUAL NEWSLETTER

EXPANDING THE TEAM

We are delighted to announce that we have expanded our team to include Anezka Beamish Leskovcova as the Project Administrator, Dr Hui Xie and Dr Pete Thompson from Movement Strategies (a GHD company) as modelling consultants, and Yunhe Tong who will start as the postdoctoral researcher in January 2023. We have also created a first responder steering group and modelling steering group with stakeholders who provide expert advice on the project progression to ensure its impact potential.

FIRST RESPONDER GUIDANCE, TRAINING, AND INTERVIEWS

We started the year by conducting a review of the training and guidance for first responders on how to communicate with the public in emergencies. We found valuable recommendations in the NFCC Operational Guidance around warning, informing and advising the public, as well as useful insights from the National Institute of Standards and Technology on best practice for creating message content, structure and language. However, we found little guidance on what words or information to convey to the public during emergencies. In part, this may be because much training and development occurs through ongoing mentoring as well as during exercises and stress tests.

Next, we held interviews with first responders to discuss the most and least effective ways of asking the public to perform actions in emergencies. We are very grateful to the first responders who took time to participate and share their experiences. Their expertise provided us with essential information about which phrases and approaches are commonly used in emergencies, what effects they have, and how we can make the project outputs useful for developing current practice and policy. Thank you!

Prof Steve Gwynne presenting a model review

Dr Anne Templeton and Prof. Dr Gerta Köster

EVACUATION EXPERIMENTS

The crux of our evidence-based ethos is conducting evacuation experiments to determine how and why the public react to instructions from first responders in emergencies. This will involve a series of iterative online and then in-person evacuation experiments to explore which phrasing of instructions best facilitates public adherence and why. We are about to launch studies piloting communication approaches which use a mixture of measures from social psychology and evacuation research, and we are working hard to develop our virtual environment for the studies. These studies will be our main priority for next year and we are excited to put on our nerdy social psychologist hats!

Concurrent to developing these studies, we are creating a database of measures used in evacuation research. This database will ultimately be made open source with the aim of encouraging replication in research and generating knowledge about the validity of the measures.

AGENT-BASED MODELS OF COMMUNICATION IN EVACUATIONS

A core task of the project is developing computer models of evacuation behaviour to better represent how the public react to first responder communication strategies. Computer models are widely used for planning and preparedness of emergencies and we aim to enhance them by incorporating theory from social psychology, evidence from our experiments, and careful testing, validation, and verification.

Our first step was to identify gaps in the current state of the art models. We have almost completed our systematic review which asked: 1) How do current agent-based models simulate social interactions and communication approaches between first responders and the public in evacuations? 2) What are the key factors and variables addressed in these models? You can read our pre-registration here. We are now conducting a deep dive into how communication between the agents is modelled and how this can be useful for our project as we develop our parameters in Vadere, the flagship open-source framework for pedestrian and crowd simulation.

We also completed a review of industry models to see how our project can be useful for them. A great achievement of the review is that we now have Pathfinder and Simulex (crowd movement models) as valued stakeholders and are working closely with them to gain feedback on our project results and ensure our model developments can be easily adapted into their software.

DISSEMINATION

We have been spreading the word about the project far and wide. We showcased the project in a TED talk at the 5th European Emergency Medical Services Congress and in Anne's Early Career Award talk at the BPS Social Psychology Section annual conference. The BBC have covered our work twice, first in the BBC World Service Deeply Human podcast and then in the CrowdScience show. We have also been interviewed on the Fire Science Show, provided a webinar for FireCo, and participated in a government body roundtable. Next year, we hope to present our findings at more conferences and in trade outlets. Watch this space!

We also have new Twitter (@FRCommsStrategy) and LinkedIn (FRCommsStrategies University of Edinburgh) accounts, and continually update our website which you can access here.

Dr Pete Thompson, Dr Fergus Neville, Prof Dr. Gerta Köster, Anezka Beamish Leskovcova, Dr Aoife Hunt, Dr Hui Xie, Prof Steve Gwynne

Dr Anne Templeton giving her BPS SPS award talk

GET INVOLVED

If you would like to hear more about the project, join one of our steering groups, or have questions for us, then please contact the project lead Dr Anne Templeton at A.Templeton@ed.ac.uk or Anezka Beamish Leskovcova at Abeamish@exseed.ed.ac.uk.

From the whole team, we wish you a very happy festive period and all the best for 2023!