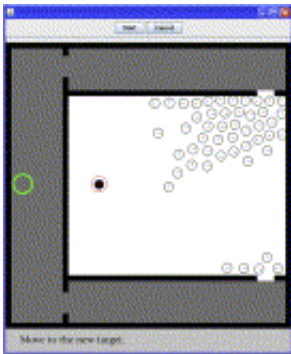


# Zombies offer key to understanding how crowds evacuate

July 8 2013

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Zombies might not be the most obvious candidates to use when researching how crowds evacuate buildings, but they have proved a key factor in a new study into crowd behaviour.

As part of on-going research into understanding human [crowd behaviour](#), scientists from the University of Essex collected data using a computer game run at the Science Museum's ZombieLab event.

The AXA-funded research on crowd evacuations, published in the journal *Animal Behaviour*, revealed how stress can affect decision making and crowd behaviour during evacuations.

Lead researcher Dr Nikolai Bode, from the Department of Mathematical

Sciences at the University of Essex, explained: "Imagine you are exiting a building in a [large crowd](#). There are different exit routes of similar length you could take. Do you take a route you know already? Do you follow or avoid others? Investigating these decisions is important to understand how crowds evacuate from buildings."

Dr Bode and colleague Dr Edward Codling designed a zombie-themed [computer game](#) where players had to escape from a building in the presence of simulated evacuating pedestrians. Players had to complete the game either under non-[stressful conditions](#), or stressful conditions where they were told that they had to beat the fastest evacuation time.

The results showed that rather than focus the mind, stressful situations were more likely to lead people to make worse decisions compared to people who were not stressed. The research also found that people who were stressed were less likely to reconsider a bad evacuation decision compared to people who were in less [stressful situations](#).

"It was striking to find that putting more pressure on players resulted in them sticking to routes they knew already and made them less likely to adapt their decisions to changing situations, even if this resulted in longer times to evacuate," explained Dr Bode. "These results could have implications for the design of safe and efficient evacuation routes in buildings and other public places."

Conducted at the Science Museum in London, the research formed part of ZombieLab, a three-day contemporary science festival about consciousness.

"Events such as ZombieLab might sound trivial, but it brought a horde of 12,000 visitors to the Science Museum to explore and take part in cutting-edge science," said Kat Nilsson, Head of Contemporary Science at the Science Museum. "ZombieLab was a brilliant opportunity for our

visitors to get involved in real research, providing enough data for new insights into crowd behaviour to be published."

**More information:** Nikolai W.F. Bodea, Edward A. Codlinga, Human exit route choice in virtual crowd evacuations, *Animal Behaviour*, Available online 21 June 2013, [dx.doi.org/10.1016/j.anbehav.2013.05.025](https://doi.org/10.1016/j.anbehav.2013.05.025).  
[www.sciencedirect.com/science/ ... ii/S0003347213002443](http://www.sciencedirect.com/science/.../ii/S0003347213002443)

Provided by University of Essex

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