



Imperial College
London

VE60010 – The Science of Crowds: Movement, Behaviour and Design

Lecture 2: Human Behaviour in Emergencies

Part 1: A Brief History of Research into Human Behaviour in Emergencies

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Research Periods

- 1900-1970 - The Pre-Recognition Years
- 1970-1990 – The Productive Years
- > 1990 – The Performance Code Years

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Empire Palace Theatre Fire – Edinburgh, 1911



3,000 people
escaped the building
in **less than 2.5**
minutes

2.5 minutes adopted as
a 'safe exit time' for UK
buildings, and is still the
basis of regulations that
exist today!

Research Periods

- **1900-1970 - The Pre-Recognition Years**
- **1970-1990 – The Productive Years**
 - 1972: survey of 2,200 people in U.K. &
1977: interviews of 590 people in U.S. involved in residential fires revealed:
 - Re-entry behaviour also occurs in residential building fires
 - People will walk through smoke, and attempt to extinguish fires

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Research Periods

- 1900-1970 - The Pre-Recognition Years
- 1970-1990 – The Productive Years
- > 1990 – The Performance Code Years
 - Research focused on developing computer simulation models (covered in Lecture 2)
 - Importance of time delay (and behaviour that cause it) before evacuation movement: *pre-evacuation time*
 - Movement characteristics of mobility impaired people



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