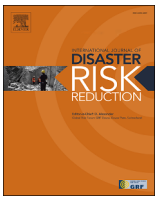
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Understanding levels of compliance with emergency responder instructions for members of the Public involved in emergencies: Evidence from the Grenfell Tower fire

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ABSTRACT

Purpose: – It is essential to understand how members of the public make decisions during emergencies. Such understanding is crucial in order to understand how emergency services can best influence positive protective behaviours. Previous research in this area has indicated that members of the public will respond both to the threat from an incident such as a fire as well the way the threat is managed by emergency responders and that this management will be crucial in increasing public willingness to comply with emergency services instructions.
Aims: The study aimed to identify factors that affected the way in which those involved in the Grenfell Tower Fire behaved and develop the understanding of factors that affect public behaviour during large scale emergencies.
Design/methodology/approach: This paper used 72 transcripts from the Grenfell Tower Inquiry to examine how members of the public make decisions during emergencies. The study utilised a Framework Analysis to identify themes relating to how members of the public made decisions regarding protective actions and what factors influenced these decisions.
Findings: The study identifies several key factors which influenced individuals' decision making concerning protective actions:
- Uncertainty and Anxiety.
- Environmental Factors in Evacuation Decision Making.
- Trust.
- Helping and Co-Operative Behaviours in Emergencies.
Originality/value: Data involving real life emergencies is extremely useful in providing support to the development of emergency procedures and training for emergency services.
The research identifies several key factors which can inform a better understanding of public behaviour during emergencies.

1. Introduction

The Grenfell Tower Fire on June 14, 2017 claimed the lives of 72 residents and was the worst residential fire in the UK since the Second World War. During the course of this incident, residents in Grenfell Tower were advised by the London Fire Brigade (LFB) about actions they should take including: stay in place; move to a 'safer room where there is no or less smoke'; close doors and keep

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them closed; block gaps in doors with sheets or towels to stop smoke and fumes getting in and also to evacuate the building [1]. These actions changed as the incident developed and residents therefore had to make rapid decisions about what actions to take, and whether to follow the advice given to them by the LFB. Ultimately, public behaviour (in terms of decisions whether to evacuate the building or not) played a key role in the outcomes from the incident, and therefore an improved understanding of the factors that affected public behaviour during this incident could help to optimise emergency management.

Research indicates that numerous factors affect the way in which members of the public behave during emergencies, and which therefore may have affected public behaviour during the Grenfell Tower Fire.

For this paper the term the 'public involved in the emergency' or similar as appropriate, is used to describe anyone impacted either directly by the fire such as residents or indirectly such as those with friends and family in the tower, and differentiates them from emergency services or unaffected bystanders.

Research into public behaviour during emergencies tends to fall under two broad, largely dichotomous, approaches: 'affective' or 'cognitive'. Approaches that make assumptions about 'affective' public behaviour suggest that people will panic, act instinctively, and be unable to make informed decisions about the actions they should take to protect themselves (e.g [2,3]. These approaches emphasise the high levels of anxiety that people will experience and the accompanying negative impact this will have on their ability to take recommended actions. In contrast, approaches that make assumptions about 'cognitive' public behaviour emphasise that members of the public will want to take actions to protect themselves, and others, during emergencies and will cooperate with each other and with emergency responders [4,5]. These approaches emphasise that people will want and need information about what actions to take and why.

Proponents of more affective approaches to public behaviour suggest that the lack of control, unfamiliarity and uncertainty inherent to emergency situations will result in an emotional, anxiety based response, which will be the major factor affecting public behaviour. In line with this, Slovic et al. [6] describe the essential role of affective decision-making, as the "fast, instinctive and intuitive reactions to danger" and it has been suggested that these rapid, affect-based processes drive behaviour in situations where people are confronted with a risk for which they have insufficient knowledge or time to use more time-consuming cognitive processes [7,8]. Slovic [9] identifies factors that may affect the way in which the public interpret risk: the extent to which the risk is perceived as voluntary (voluntary risks are more acceptable than involuntary risks); the extent to which the risk is personally controlled (personally controlled risks are perceived as less risky than those controlled by others); and the extent to which the risk is familiar (familiar risks are perceived as less risky than unfamiliar risks). Risks that are perceived as being involuntary, uncontrollable and unfamiliar are perceived to be the most risky and are sometimes referred to as 'dread' risks [9]. Reactions to such dread risks are therefore seen to rely on more affective processing given the lack of information and understanding upon which decisions can be based. As Slovic et al., [10] state "*reliance on affect and emotion is a quicker, easier, and more efficient way to navigate in a complex, uncertain, and sometimes dangerous world*" (p4). These approaches therefore view behaviour during emergencies as emotional and instinctive, resulting from the anxiety people will be experiencing, and largely pre-determined i.e. people will behave in a certain way and the role of responders will be to manage that behaviour.

However, proponents of more cognitive approaches to emergency behaviour suggest the opposite: that those involved in emergency incidents will maintain their cognitive capacity for decision-making and will continue to act normatively. As such, the way in which responders manage an incident will have a direct impact on the way in which the public behave. These more cognitive approaches emphasise the importance of trust in shaping public behaviour, i.e. the more that members of the public trust the emergency responders, the more likely they are to follow advice about recommended behaviours. Trust can be seen to result from two related but distinct constructs: legitimacy and competence [11–13]. The former is based upon a belief that responders will manage an incident fairly and act in the best interests of members of the public [14,15,16], while the latter is based upon a belief that responders are capable of managing an incident effectively. For trust to exist responders must be perceived as both competent and legitimate [12,17]. To the extent that responders are perceived as acting both competently and legitimately, this will increase public willingness to comply with their instructions [14,18,19]. Evidence suggests that trust is shaped by the manner in which responders manage an incident, with effective communication being particularly important. To enhance trust, communication should: be open and honest; explain what actions people need to take to protect themselves and why such actions are important; and provide practical information to enable people to know how to take protective actions [19,20].

During emergencies such as the Grenfell Tower Fire, members of the public will respond both to the perceived threat (i.e. the fire itself) and the way the threat is managed (i.e. the actions of emergency responders) [12]. The extent to which those affected perceive the risk of the threat to outweigh the risk of any recommended actions will influence how likely they are to take the actions recommended by emergency responders. Whilst the more affective approaches view these risk-based decisions as largely based on emotional, instinctive reactions (thereby largely pre-determined and unrelated to actions taken by emergency responders), more cognitive approaches see such risk-based decisions as being shaped by the actions of emergency responders and the way the incident is managed. It is important to understand the behaviour of those affected by the Grenfell Tower fire, so that the management of these types of large-scale emergencies can be optimised.

The Extended Parallel Process Model (EPPM) [21] is potentially relevant to the current study. EPPM was developed as a result of inconsistencies in the literature concerning fear appeals, and was originally based upon Leventhal's Parallel Process Model which looked at how adaptive protective behaviours arose from attempts to control perceived dangers [22]. It also draws from Rogers' Protection Motivation Theory, which proposes two responses to fear; a threat appraisal and a coping appraisal [23].

EPPM posits that fear-inducing situations cause two simultaneous methods of processing information. This is either via a cognitively based efficacy appraisal or through an emotional threat appraisal. The appraisal used will then lead to either a danger control

process or a fear control process. EPPM states that the fear control process will lead to message rejection, whilst the danger control process leads to message acceptance and consequently to adaptive behavioural changes.

However, further exploration of the EPPM is not included within this study, because the current study focused on the areas of competency, legitimacy and trust and the role of more affective or more cognitive decision making which are areas not covered by EPPM. We have sought to extend an understanding in this area, and it would be of interest to consider EPPM alongside competency, legitimacy and trust in any future studies.

Following the Grenfell Tower fire, a public inquiry was established to understand the circumstances leading up to and surrounding the fire. The inquiry was announced on June 15, 2017 and formally established under Section 5 of the Inquiries Act 2005 on August 15, 2017. The inquiry was split into two phases with Phase 1 focusing on the factual narrative of events [1]. As part of this Phase, a number of interviews were conducted with those affected. These were conducted by those appointed by the Chairman under Section 11 (2)(b) of the Inquiries Act 2005 with more details available on the Grenfell Tower Inquiry website [1]. The transcripts from these interviews contain key information relating to how those in Grenfell Tower decided whether to evacuate the building, and if so when, or whether to take other protective actions.

By analysing the transcripts from these interviews, the current study explored factors affecting decisions to evacuate, in order to contribute to an understanding of public behaviour during emergencies. Whilst there has been intense scrutiny as to whether the stay in place advice was correct in this situation [24,25], this paper does not aim to draw conclusions about correctness or otherwise of the advice given. Instead, this paper examines what actions residents took, how they made their decisions regarding these actions and why residents were, or were not, willing to follow any advice given. Such understanding is required as although panic as an expected response has been discredited by emergency response academia [26] there still persists a belief that those involved in emergencies cannot be expected to be capable of making well informed decisions ([27,28]. A clear example of such thinking can be found in the aftermath of the Grenfell fire where British MP Jacob Rees-Mogg commented that common sense on behalf of those in the Towers should have led them to evacuate the towers, implying a deficiency in the decision making of those in the towers [29]. As such it is vital to further explore the ability of casualties to make cognitively based decisions during emergencies.

In light of this, the current study aimed to examine decisions made by members of the public involved in the Grenfell Tower fire. Specifically, the aims of the study were to: identify factors that affected the way in which those involved in the Grenfell Tower Fire behaved; and develop the understanding of factors that affect the behaviour of members of the public involved in large scale emergencies. An understanding of factors that affect public behaviour during emergencies will facilitate appropriate planning and training to prepare for and effectively manage such emergencies.

2. Method

2.1. Design

A secondary analysis of published data from the Grenfell Tower public inquiry was conducted. Data were transcripts from interviews carried out as part of the Grenfell Inquiry, all of which were publicly available on the Grenfell Inquiry website [1]. 72 of the transcripts that were available as of February 1, 2019 were randomly selected using a systematic approach before reading, representing 30% of the available witness transcripts. No transcripts were rejected from the analysis. A sample size of 30% of available transcripts was selected as this was deemed sufficient for the purpose of the study and supported the capacity of the researcher to undertake the analysis.

The 30% of transcripts fell into one of three categories in the following numbers; eyewitness statements from those inside the tower who survived (n = 42), eyewitness statements from those who were not inside the tower but witnessed the incident at close proximity (n = 19) and statements from those who were on the phone to friends or relatives in the tower (n = 11). The proportions of transcripts within each category were not representative of the overall transcripts available but appeared as part of the random selection of the 30% of selected transcripts. Once the 30% of transcripts had been selected the remaining transcripts where not reviewed to determine which category they would have represented had they been reviewed.

The categories chosen represent the three statement types taken for the Grenfell Tower inquiry. The Grenfell Tower inquiry also took transcripts from interviews with emergency responders and other agency staff involved in the response which are not included as part of this study.

2.2. Data analysis

This study was not looking to focus on testable theories but rather analysis sought to explore the extent to which the behaviours of those in the Grenfell Tower were based on more affective or more cognitive decision-making, with a view to potentially informing further quantitative research in this area. In order to examine the data held in the Grenfell transcripts, framework analysis was utilised.

Framework Analysis was selected as it is a form of thematic analysis that provides a systematic model for managing and mapping the data. It is also well suited for analysis of interview data, as it is able to generate themes through comparisons both within and between cases [30].

Ritchie and Spencer [31] developed this methodology as a way to organise data into themes and categories [32]. Qualitative analysis of detailed interview transcripts is a continuous and iterative process that requires the researcher to first manage the data and then make sense of it through descriptive and explanatory analysis.

Framework Analysis involves five consecutive steps [31], which were followed in the analysis of the transcripts. A priori themes were identified based upon existing literature. The transcripts were then read through so as to become familiar with them and allow further themes to emerge from the data.

Sections of the transcripts were then indexed against these themes and sub-themes. These themes and sub themes were then charted to examine the data systematically through organizing it into a matrix. Finally, learning from the previous four stages was brought together to identify clusters of data in order to review and re-appraise the data to create a narrative for how the data is structured.

The coding framework was applied by two additional researchers from the UK Fire and Rescue Services, who are experts in high rise firefighting, and who each reviewed 30% of the quotes which were selected at random. 30% was selected as a robust sample which could be reviewed within the time allowance of the two Fire and Rescue experts. Any disagreement between researchers was discussed, prior to the development of the final thematic framework.

The results below are quotes from transcripts of one of three conditions:

- IT = In Tower and escaped
- OP = On the Phone
- EW = Eyewitness Not in the Tower

3. Results

The following four main themes were identified as relevant in understanding how members of the public made decisions during emergency situations:

1. Uncertainty and Anxiety: This theme identified the presence of anxiety in those involved in the Grenfell fire and how this was influenced by the uncertainty of the situation.
2. Environmental Factors in Evacuation Decision Making: This theme identified variables which influenced decisions on whether to stay in place or to evacuate. There were three sub-themes relating to why people chose to evacuate or stay in place:
   a. Physical cues (e.g. seeing smoke entering their flat)
   b. Physical barriers (e.g. the presence of fire or thick smoke blocking an exit route)
   c. Weighing the risk of evacuating against the risk of staying in place (e.g. the risk of moving through a smoke filled corridor to exit the building against remaining where they are and awaiting rescue or further instruction from the Fire and Rescue Service).
3. Trust: This theme described the trust that those involved had in the Fire and Rescue Service, and how this influenced their likelihood to follow advice, and their expectations of how the incident would develop. There were two sub-themes relating to trust:
   a. Competency: this related to how members of the public perceived the ability of the Fire and Rescue Service to effectively deal with the situation and assist them in maintaining their safety and returning them to normalcy. This is distinct from the concept of legitimacy, below, as it relates to perceived ability of firefighters to manage the situation rather than to a belief that firefighters will manage the incident fairly and in line with the public's own values.
   b. Legitimacy: this related to how likely members of the public were to believe that the Fire and Rescue Services would manage the incident fairly, prioritising them appropriately and acting in their best interest.
4. Helping and Co-Operative Behaviours in Emergencies: This theme identified how those involved in the emergency helped each other.
   a. Members of the public are helpful and co-operative: This theme described helping and cooperative behaviour displayed by members of the public (e.g. waking up neighbours to alert them to the fire).
   b. Advice from friends, family and neighbours: This theme identified how members of the public sought advice and shared information with those close to them be they neighbours or friends and family (e.g. discussing whether to evacuate or remain in place).
   c. People go to the scene to help: This theme described the behaviour of relatives and friends of those in Grenfell Tower, particularly in relation to their desire to attend the scene to assist those involved (e.g. friends and family trying to enter the Tower to go and rescue their loved ones).

3.1. Coding framework results

There was broad agreement between the raters with the first expert rater agreeing with 77.4% of the codes whilst the second expert rater agreed with 93.5% of the codes. There was an 81% agreement between the two expert raters.

The inter-item correlation scores for each rater were as follows with rater 1 being the original researcher.

- Raters 1 and 2 had a 0.620 inter-rater score
- Raters 1 and 3 had a 0.902 inter-rater score
- Raters 2 and 3 had a 0.700 inter-rater score

In accordance with McHugh [33] this analysis suggests that any score above 0.7 indicates a strong level of agreement between raters. As such the scores between raters indicate a strong level of agreement between rater 1 and rater 3 and rater 2 and rater 3. Whilst the agreement between rater 1 and rater 2 is below the 0.7 to show strong agreement this still indicates a moderate degree of agreement [33].

3.2. Uncertainty and anxiety

Those involved often referred to feeling uncertain during the fire. Comments included "*G just didn't know what to do" (IT66)* and *"We're trying to understand what can we do and where can we go" (IT66).*

Alongside uncertainty, the transcripts correspondingly recorded anxiety in those inside the tower *"R told me to check the kitchen to put my mind at ease so I went to the kitchen to make sure everything was ok." (IT 31)*

> *"I did feel anxious at this point, but I tried to stay calm. I didn't know how bad the fire was" (IT 63)*

> *"I tried to stay calm but I couldn't and neither of us knew what to do." (IT 63)*

Many members of the public referred to themselves or others panicking:

> *"I don't know why we didn't call the fire brigade first but we didn't, maybe we were just panicking." (IT 71)*

> *"He was looking panicked, but I can't remember him saying anything." (IT 68)*

> *"It took me about 5 minutes to get myself together because I was panicking. I couldn't feel the ladder with my foot at first but I eventually managed it and I started to work my way down the ladder" (IT 31)*

However, whilst the term 'panic' was used, this was often followed by a description of cognitively weighed actions e.g. *""I knew we had to get out of the building and started to panic. I ran into my son's room […] I shouted that we needed to leave as the building was on fire." (IT 62).* This suggests that, while those involved used the term 'panic', this appeared to be used interchangeably with 'anxiety' or 'fear' and did not necessarily represent a purely affective response.

3.3. Environmental Factors in Evacuation Decision Making

Analysis of the transcripts identified two environmental factors that affected individuals' decisions to either remain in the Tower and shelter in place or to evacuate: physical cues (physical factors that prompted people to evacuate); and physical barriers (physical factors that prevented people from leaving).

3.3.1. Physical cues

Signs of fire or smoke appeared to be one of the main drivers of members of the public identifying a need to evacuate.

> *"I asked if they were coming to get us as the smoke was getting stronger outside the building. At this point I was told by the same firefighter that it might be best for us to take the stairs. I thought that was a good idea". (IT 31)*

> *"It was an utter shock to see flames at the window and I realised then we needed to get out of the building quickly." (IT 64)*

> *"I could see smoke outside which I think was coming from the flats below. I said to A 'Let's just get dressed and leave." (IT 63)*

3.3.2. Physical barriers

These physical cues could also become barriers to actions. There were a number of occasions where members of the public could not physically evacuate as the risk was too great and forced them to stay where they were e.g.

> *"Why aren't you coming out?' She said that she couldn't as the smoke was so bad and whenever she opened her front door she couldn't see anything." (OP 21)*

> *"I was coughing as the smoke got stuck in my lungs. My eyes started burning so I quickly closed the door." (IT 31)*

> *"She only opened it a small amount, but I could see that the landing was filled with thick black smoke and the heat of the smoke hit me straight away. M closed the door quickly and we went back inside the flat; back to the kitchen." (IT 71)*

> *"explained to him that there was too much smoke in the hallway so we couldn't get out." (IT 63)*

There was evidence that those involved considered the risks of taking each of the available actions (e.g. evacuating or staying in place) before deciding which action to take.

"Smoke was everywhere. It was absolutely terrifying. I tried to walk across the other side of the hallway towards the stairway. I had heard M shouting that he was going back to the flat. I remember him shouting "B" (which is my nickname) "we're not going to make it. We are going to die in here. I'm turning back." (IT 48)

Perceptions of risk often changed as a result of the changing circumstances of the fire, as can be seen in the quotes below. This respondent initially felt that the risk of evacuating was too great:

> *"My friends had been constantly telling me that we needed to leave the building, but we kept telling them that we couldn't as the smoke was too much" (IT 71)*

However, as the risk of the fire increased, the risk of staying in place began to grow to a point where it was perceived as a higher risk than evacuating, which resulted in the individual deciding to leave:

> *"I spoke with M and said that we needed to try and get out. I told her that the fire brigade might not be able to get us and if we didn't try, then we would die in the flat. I told my friends that we were going to try and leave and asked them to relay that message to the fire brigade in the hope that they could come up and help us." (IT 71)*

It can be seen how the risk of the threat (e.g. fire, smoke) was considered alongside the risk of any available protective actions (evacuation or stay in place) and that, as the risk changed, so too did individual decisions about whether it was safer to evacuate or stay in place. There was also evidence that at times, the physical risk of evacuating (e.g. falling from a ladder) was perceived as greater than the risk of the fire, and this resulted in delays to evacuation e.g.

"When I looked at the fireman's ladder it was very slim, seemed flimsy and unsafe. I asked the firefighter to tie me to the ladder or do something to make it secure but he said I had to go now and move quickly as the fire was approaching. He said the fire and smoke were escalating and the building was burning rapidly. I will never forget him saying to me "please just get on the ladder so I can save your life". That is when the reality of the situation dawned on me. I just had to risk it if not I would die in the fire." (IT 31).

3.4. Trust

A number of residents at different stages of the incident followed the advice given to them by emergency responders either via face-to-face communications or over the phone, and this therefore played a role in their decisions whether to stay or evacuate.

> *"H also told me that I needed to get out, but I told him that we had been advised to stay by the fire brigade" (IT 71)*

> *"He asked me how I was and he said that they were in their house as well. He said that he had phoned the emergency services and they told him to wait and not to leave the flat. He said that he was sitting together with his children and he advised me to do the same with my children and that the emergency services would come and take us out and rescue us." (IT 65)*

Several of those interviewed specifically stated that they trusted the responders, and that this was why they had followed their instructions:

> *"S for a second time told me that the fire fighters were coming for us and that we should wait for help. M was also saying, "Why are we staying, the fire is in the bedroom?". S clearly trusted the Fire Brigade advice to stay where we were and they would rescue us". (IT 32)*

> *"One of the roles of a firefighter is to save lives [….] We then sat down to wait because we trusted the advice the firefighter had given us." (IT 65)*

"The firefighter told us to "Stay where you are and don't panic". I was shaking and scared but felt comforted that I had spoken to the firefighter. I thought we would be rescued". (IT 31).

The transcripts revealed two specific elements that contributed to trust: the perceived competency of the Fire and Rescue Service (i.e. Fire and Rescue Services being seen as capable of taking appropriate actions to protect the public); and the perceived legitimacy of the Fire and Rescue Service (i.e. Fire and Rescue Service being seen as acting fairly and in the best interests of the public).

3.4.1. Competency

Several of those interviewed reported that they believed the Fire and Rescue Service would be capable of managing the fire e.g.

"At first I was not worried because there have been small fires in other blocks before and they have always been controlled and put out by firefighters". (IT 22).

If the emergency services were viewed as competent and able to help, then their advice was more likely to be followed:

"[My wife] was reassured by having spoken to someone who seemed to know what they were talking about. My wife told me that the 999 operators had told her to put items around the bottom of door in order to stop smoke coming into our flat. I went immediately to get a quilt and I started putting it around the bottom of the door". (IT 38).

As such it appears that responders being viewed as competent and therefore able to help contributes towards public willingness to follow advice given by the emergency services.

There was also evidence that initial perceptions of Fire and Rescue Service competency could be lost as a result of actions taken by responders during the emergency. On occasions where emergency responders appeared not to be capable of taking effective actions, members of the public felt anger and frustration as a result e.g.

> *"I remember people getting frustrated because it appeared ineffective, and we thought more fire engines would have been sent." (EW 69)*

3.4.2. Legitimacy

Legitimacy is the belief that Fire and Rescue Services have the authority to manage an incident and will behave in a fair way, acting in the best interests of members of the publics. There was evidence that those involved perceived that the Fire and Rescue Service would manage the incident legitimately, and that this affected their actions e.g.

> *"I decided that I should walk towards the firefighters and that if my life was in danger they would surely warn me," (IT 58)*

"When the door was opened there was a firefighter in uniform. […] He said to stay in the flat and put a blanket around the door and cover every hole to stop the smoke coming in. And he said 'you're safe.' Of course, we believed him." (IT 65).

As with perceptions of competency, if the belief in responders' legitimacy was lost (due to actions taken by responders), this led to negative perceptions of responders e.g.

"People around me were talking about how they felt betrayed because they had told residents in the Tower that it was safe to stay inside when it clearly was not." (EW15).

"I do not believe the firefighters were helping as much as they could have. They could have done more during the early stages of the fire. The firemen did not look strong they looked shocked". (EW 29).

"I recall that other man said "we cannot guarantee we will get to them. They need to come out themselves." I'll never forget that and how it made me feel, like I was being slapped in the face. After 3 h of being in the building I thought it was a joke." (IT 71).

The sense of betrayal indicates that the Fire and Rescue Service were initially perceived to be legitimate and, as such, when they failed to meet the expectations associated with this legitimacy, such adverse reactions occurred.

3.5. Helping and Co-Operative Behaviours in Emergencies

3.5.1. Members of the public are helpful and co-operative

Throughout the transcripts it was clear that members of the public caught up in the disaster looked to help each other. A large number of those in Grenfell Tower reported being awoken by phone calls or knocking on their doors from neighbours wanting to alert them to the fire, before looking to their own safety. Many also invited their neighbours into their properties to shelter in a place of perceived greater safety.

"But around four other people from her floor entered her flat because her corner of the building was the only side that was not affected by the fire at that time. People from the flat opposite to hers came in, and she was offering help and offering people to come in". (OP 8).

"She said she woke up because she could hear hard knocks on the door. There was a woman shouting and screaming. G and M opened the door and found two people outside, a young man and a woman. G thought that they must have lived on the same floor. They let them come into the flat." (IT 32).

"I recall seeing two adult males coming down the stairs just as I was opening the door. I would describe them as big, tall men. The stairs were not busy and I do not recall seeing any other residents I thought everyone else must have got out already. The two men that I had seen coming down were not people that I was personally familiar with. One of the men walked up to me and picked me up and placed me over his shoulder. He did this before I had said a word to him, although I was clearly in a distressed state". (IT 52).

3.5.2. Advice from friends, family and neighbours

Residents frequently provided information and advice to those they encountered, and families and friends called or sought each other out to share information and discuss a course of action. As such, the advice and actions of others around them often influenced individuals' behaviour.

This was true both of advice provided via calls from those outside the tower e.g.

"She had been trying to call us both about the fire. H told W to get out of the building as it was on fire. […] We left so quickly that I was still in my nightdress. I think it took no more than 5 min for us to leave the flat". (IT 62).

"It was W. W told me to get out of my flat and by the power and strength of his voice, I knew not to argue with him and to just leave" (IT 59).

And from others in the tower e.g.

"leave urgently. She said that the flat was full of smoke. F works for X and so has received training about how to react in emergency situations. She was very clear and commanding" (IT 60).

"This was at around 1.00am. Whoever was banging did not stop and just kept on banging on our door. My husband got up to see who it was and found our neighbour from Flat X, which is on the same landing as our flat standing outside. I told us that he had heard that there was a fire on the 4th floor and he thought that it best for us to leave and just get out of the building. Although there was absolutely no sign of fire at this stage at all, there were no flames or smoke anywhere, either in our flat or on the landing, I decided with my husband that it would be sensible to follow his advice and just leave the building." (IT 57).

3.5.3. People went to the scene to help

There was evidence that many people associated with those in the towers immediately went to the scene when they discovered what was happening. There was a clear and consistent desire from friends and family to make their way to the incident with a desire to assist those in need.

"My brother H and I devised a plan to separate and to go opposite ways around the tower in order to increase our chances of getting into the building to save our family members". (OP 6).

"Before this, I only saw normal people like me or residents or young people running in and getting people out. One of the men I recall, I think he was Somali, came from the Mosque. He said "I'm going in, I don't care" and "when I come out you can arrest me". He managed to go in and save his family members". (OP 8).

"She said that she had tried to go towards the Tower, but the Police had stopped her going further. She had taken a few blankets and wanted to try and help rescue people. She said that she had seen people jumping from the window". (EW 15).

4. Discussion

The analysis of transcripts from the Grenfell Tower Inquiry provided numerous insights into the experiences and behaviours of those involved in the Grenfell Tower Fire. There was evidence that those involved experienced anxiety and uncertainty due to the incident, though this did not often prevent them from making cognitively weighed decisions regarding actions they should take.

Other factors that appeared to affect behaviour included the following: physical cues (e.g. the presence or absence of smoke), information provided by friends and family, and advice and instructions provided by emergency responders. The extent to which those involved acted upon emergency responders' instructions appeared to depend, to some extent, on their trust in those responders managing the incident. Finally, it was clear that those members of the public involved in the Grenfell Tower emergency attempted to help each other, and that their friends and family also tried to help. These themes are further explored alongside some of the key literature below.

4.1. Uncertainty and anxiety

The Grenfell Tower Fire presented a unique situation for those members of the public involved. Such an event was beyond the experience and knowledge of those living in the Tower, and consequently, it is no surprise to see that anxiety was common. This is in line with previous research which demonstrates the role of uncertainty in driving anxiety during emergency situations (e.g. Ref. [9]. Interestingly, whilst members of the public often referred to themselves and others as 'panicking', in several instances it was clear from their responses that the behaviours they described, whilst representing fear or anxiety, did not inhibit their ability to make cognitive decisions (e.g. phoning the emergency number 999, helping others, attempting to evacuate). This has previously been recognized with Fahy et al. [34] finding in a study of behaviour during fires that *"panic, in terms of irrational behaviour, is rarely seen in fires"* (p336) and that "*descriptions of 'panic' relate more to fear or heightened anxiety than any sort of behaviour leading to the death or injury of a person."* (p336).

Given that real "panic" describes behaviours that are affective in nature [35], the behaviours that members of the public described did not actually represent panic. This finding is in line with a wealth of previous research that demonstrates that panic is rare during emergencies, and that people continue to behave in a normative and cooperative manner (e.g. Refs. [36–39]. So, whilst the uncertainty of a situation such as Grenfell can be expected to cause anxiety, this does not mean that members of the public will be incapable of making cognitively weighed decisions.

This is a crucial finding, as it demonstrates that members of the public involved in the Grenfell Tower Fire maintained their ability to engage cognitively with the situation and with the advice and instructions of the emergency services, and therefore offers insights that can inform planning and training for the management of such emergencies.

This is supported by [27] and [28] who identify that a belief in more affective approaches to public behaviour during mass emergencies can lead to strategies which may at best be unhelpful for the management of an incident and in fact may actively inhibit operations and be counterproductive to engaging a supportive public response.

4.2. Environmental Factors in Evacuation Decision Making

The transcripts revealed that environmental cues and barriers played a key role in the decisions made by members of the public regarding whether to evacuate or stay in place. The presence of smoke or flames was often a driver of the decision to evacuate, though conversely, too much smoke was often given as a reason for not evacuating and for staying in place instead. As the physical cues of the fire intensified, so too did attempts to gather information or take protective actions, with members of the public weighing up the risk of either staying in place or evacuating. This is in line with previous research which highlights that the presence of smoke, flames and debris affected the evacuation of people from high-rise buildings for example Gershon et al. [40]. Interestingly, at times members of the public appeared to weigh the perceived risk from the threat (i.e. the fire) against the perceived risks of evacuating (i.e. falling from a ladder). When the former outweighed the latter, this resulted in members of the public taking action.

4.3. Trust

Many of those interviewed reported that they took advice directly from the Firefighters (FFs) they encountered or from Fire Control Operators (FCOs) to whom they spoke over the phone. Most people initially expressed trust in responders and the information they provided and expected that they would help them. This trust revolved around both competency and legitimacy, in line with Eiser et al.'s [41] suggestion that when understanding who is trusted in relation to public responses to expert advice during natural disasters, *"research suggests that we need to distinguish between trust in others knowledge or expertise on the one hand, and their motivation, honesty and integrity on the other hand"* (p11).

However, as it became apparent in some instances that responders were unable to help, in this case due to the nature of the incident, consequently there was a reduction in trust in emergency responders and in their handling of the incident. This supports findings from previous research which has shown that the way in which emergency responders manage an incident affects the perceived legitimacy of emergency responders (e.g. [14]. This reduction in legitimacy has been shown to reduce public willingness to comply with responder instructions (e.g. Refs. [14,19]. It is therefore essential that responder actions are perceived as legitimate, in order to enhance compliance.

There are two major issues relating to trust that need to be considered. First, trust appears to be crucial in determining the relationship between members of the public involved in an emergency and members of the emergency services responding to it. Trust has been suggested by other fields of risk management to guide decision making, especially where there is little knowledge of a subject, such as in emergency situations [42,43]. Secondly, trust appears to assist in facilitating decision making and when positively held can help promote public compliance with recommended protective behaviours [44,45].

Hence, understanding how trust is built and maintained by emergency services appears crucial in order to facilitate public cooperation with instructions provided, and thereby assist emergency responders in managing the incident.

There are several outstanding questions relating to the role of trust which may benefit from further research, including: what levels of trust emergency services hold within different communities; and whether different emergency services should provide communications and instructions at different emergencies or to different communities. Such questions require further research and consideration to ensure the concept of trust in relation to emergencies and the emergency services is more fully understood.

4.4. Helping and Co-operative behaviours

The transcripts also identified that people were willing to help and cooperate with others. This is in line with Drury et al. [46] who found that during the London bombing attacks of July 7, 2005, members of the public demonstrated a willingness to help others

around them regardless of any prior connection, and even at considerable risk to themselves. This also provides support to 'more cognitive' approaches to emergency behaviour, demonstrating that rather than behaving in an affectively driven or self-seeking way, members of the public will help others and tend to the welfare of their neighbours.

Drury et al. [46] also highlighted helping and co-operative behaviours and suggested that resilience during an emergency is not just reliant on the emergency services but can develop rapidly in communities themselves. The importance of such findings is that they identify the need to consider and include the public in policies and strategies for dealing with emergencies. This consequently allows the public to participate in their own safety and wellbeing and therefore there is a need to consider how the public can be effectively informed during an emergency to facilitate such participation.

4.5. Practical application

This paper finds that trust in emergency responders is essential in facilitating co-operation, and that it influences a casualty's engagement with the emergency responders and co-operation with the advice given. This understanding of trust will be crucial for informing the approaches and training taken by emergency responders in managing emergency situations involving members of the public.

The analysis of the Grenfell Inquiry transcripts also identified the various factors that contribute to a casualty's decision to either: evacuate, shelter in place or take another form of protective action. Physical cues appeared to play a very important role in the decision-making process with smoke and signs of fire promoting evacuation. Members of the public also looked to engage with others in the building to understand which course of action to take whilst many were also influenced by the advice given by emergency services. In most cases, a combination of all these elements played a role in influencing public perceptions of both the threat being faced (the fire) and the behaviour being recommended (evacuation, stay in place or other risk mitigating behaviours). Hence, these transcripts show how members of the public had the ability to receive information and advice and utilise these effectively to weigh various options relating to the risks facing them.

Overall, the findings presented here indicate a variety of factors that may affect the behaviour of members of the public during major incidents. These findings support the view that the behaviour of those involved in such incidents will be largely cognitive (despite high levels of anxiety and uncertainty). Those involved demonstrated that they would weigh up the risks of different behaviours before acting, would listen to and act upon advice from emergency responders, and would want to help others. Of particular interest is the finding that the way in which emergency responders managed the incident affected public trust in responders and the information they provided, which may have impacted their behaviour. It would therefore be beneficial for future research to explore what actions and communications from emergency responders could be used to promote perceptions of responder legitimacy and competency. It may also be beneficial to explore how pre-existing levels of trust in different response agencies (i.e. Fire and Rescue Service, Police, Ambulance) may contribute to the behaviour exhibited by members of the public during a major incident.

4.6. Limitations

The transcripts from the Grenfell Tower inquiry provide valuable first-hand accounts of the experiences of those involved, and therefore represent a unique resource from which to learn directly from such an incident. However, there are some limitations of this research, which should be considered when interpreting the findings.

As the interviews were conducted by another researcher, in this case the Grenfell Tower Inquiry, it was not possible to fully explore ideas that arose during the interviews. As the goal of this research was different to the aims of the inquiry those performing the interviews did not examine in depth the areas which would have been most interesting to this study, limiting the pertinent information available for this study.

The data were also collected retrospectively following the event. The interviews occurred up to a year and a half after the incident happened. The incident was also a highly stressful event and attracted a great deal of media attention. The effects this will have had on respondents' recollection of events must also be considered, as must the fact that those choosing to give interviews to the Inquiry were self-selecting.

Another limitation was that it was not possible to establish the interview approach that was used such as what types of questions were asked or the methodology applied in the interviews.

It was also not possible to establish if any form of emergency response training had been given to residents, nor what prior experiences or knowledge they may have had relating to emergency situations beyond that which they disclosed in their transcripts.

Finally, it was also not possible to capture the characteristics of the sample (e.g. age, gender etc.) and therefore not possible to compare the characteristics of the sample with those of the available transcripts.

5. Conclusions

The tragic events at the Grenfell Tower that unfolded during the night of June 14, 2017 resulted in the loss of 72 lives. It shocked the nation's conscience and led to a public inquiry with evidence provided by interested parties. By systematically analysing a sample of the transcripts of that inquiry, this study has identified that members of the public remained rational in their decision making and were unlikely to panic. When those involved referred to 'panicking' this was typically followed by descriptions of cognitively weighed actions, thereby suggesting that respondents used the term'panic' to refer to fear or anxiety, rather than irrational behaviour. Findings therefore suggest that the behaviour of members of the public was both cognitively driven and co-operative. Consequently, emergency services were able to effectively engage with members of the public, and public behaviour did not adversely impact attempts to manage the incident.

The findings presented here suggest that it is essential to understand the role that trust plays in public decision-making and how this impacts public willingness to follow responder advice. This analysis has demonstrated that the public will generally be active in support of emergency responders as long as trust is maintained and that this is something that emergency responders need to understand and fully accommodate. This understanding can then be incorporated into community engagement activities, National Operation Guidance to support operational pre-planned tactics, and training for responders. Doing so will facilitate the most effective resolution of an incident.

Contribution statement

The authors confirm contribution to the paper as follows: study conception and design: F. Long, H. Carter, A. Majumdar; data collection: F. Long; analysis and interpretation of results: F. Long; draft manuscript preparation: F. Long, H. Carter, A. Majumdar. All authors reviewed the results and approved the final version of the manuscript.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

All Data is publicly available

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