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The psychology of protecting the UK public against external threat: COVID-19 and the Blitz compared

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The COVID-19 pandemic and the World War 2 aerial bombing campaign against the UK between 1939 and 1945 both exposed the civilian population to a sustained threat. Risk, whether from exposure to viral load or the density of the bombing, led to a range of protective measures and behavioural regulations being implemented. The V1 and V2 missiles used in summer and autumn, 1944, functioned as a second wave of bombing, arriving after people believed the danger had passed. Adherence to lockdown and a reluctance to return to work after the lifting of lockdown during the COVID-19 pandemic in the UK were mirrored in the preference for using home-based bomb shelters during the air raids. Heightened sensitivity to risk, or a so-called deep shelter mentality, did not materialise even during the second wave of bomb attacks and some deep bomb shelters were closed because of low occupancy. The most popular protective measures were those that reflected people's preferences, and not necessarily those that provided the greatest safety. As with the COVID-19 pandemic, the public drove government policy as much as they followed it.

Introduction

Unprecedented is a term commonly used about the COVID-19 pandemic. Yet there are substantial parallels with earlier threats to people's lives, not least the 1918 and 2009 influenza outbreaks. However, this Historical Review compares the current COVID-19 health crisis in the UK with the aerial bombing of its towns and cities (known as the Blitz) during World War 2. The response to the Blitz is one of the earliest examples of a government seeking to protect people from harm and maintain national production, informed by behavioural science and psychological understanding. An emerging interdisciplinary scholarship has begun to address the parallels between these events that have been drawn by commentators and politicians.^{1,2} People's occupation of air raid shelters offers a comparison with people remaining at home during the lockdown.³ The threat of a second wave of COVID-19 infection was mirrored by the V1 and V2 missiles launched in summer and autumn, 1944, when Londoners who had survived the Blitz of 1940–41, and the Baby Blitz of spring, 1944, believed that the war was effectively over. Then, as now, the government commissioned studies into the new types of threat faced by the nation, to inform the character of protective measures and information campaigns to sustain resilience. Parallels exist between the COVID-19 pandemic and the aerial bombing campaign in terms of the planning, preparation, and exposure phases. This Historical Review compares the psychological responses and behaviour of the UK people during periods of threat to identify common patterns to inform understanding for future health emergencies.

Pre-event planning

In the prewar planning phase, the Committee of Imperial Defence identified stoicism (mental resilience) as the core defence against the stress of aerial bombardment,⁴ and sought ways to strengthen people's inherent resolve to withstand bomb attacks.⁵ If shelters deep underground were provided as the only guarantee of safety from air raids for people living in towns and cities, it was thought

that the shelter occupants would rapidly become risk averse when presented with the contrasting sight of destruction once back on the surface. Such risk aversion was considered to be contagious and likely to foster a so-called shelter mentality, which could undermine national production as workers became increasingly anxious.⁶ A series of air raids on Helsinki by Soviet planes in November, 1939, appeared to confirm these predictions: "persons in raided areas would go and sit in shelters at times when no raid was in progress to recover from an attack".⁷ In February, 1939, the UK Government rejected proposals to construct deep underground shelters, not only to protect inherent resilience but also to maintain a sense of unity in adversity.⁸ Shared standards of protection were provided across areas of equivalent risk of bombing to prevent any social or occupational group from feeling disadvantaged, and the cost of a nationwide network of deep shelters was considered prohibitive.

To predict behaviour and to design protective measures, the prewar government drew on reports from other nations, notably Spain, Ethiopia, and China, all of which had been subjected to air raids.^{9,10} Although this intelligence revealed adaptability and an absence of panic, this valuable evidence was discounted by planners on grounds of national differences. Claude Pelly, the UK air attaché in Shanghai, expressed prejudices common to Europe and North America in this period, when he argued that the observed resilience was a racial characteristic: "the Chinese are more fatalistic and possibly less imaginative than the Western races".¹¹ In the present day the UK, late in the chain of countries to be infected by COVID-19, could have accessed data from China, South Korea, and Italy, but failed to do so.¹² Italian mortality rates were discounted on the grounds that these were a function of particular demographics, notably a high proportion of elderly people living in close proximity with their younger relatives. Furthermore, the Scientific Pandemic Influenza Group on Behaviour and Communication urged caution about using behavioural science from other nations "because there is evidence to

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show that how people respond to infectious disease outbreaks differs between countries".¹³

Phoney war and pre-lockdown

The declaration of war in September, 1939, was followed by a burst of activity, in which civilians filled sandbags, stockpiled food, and joined voluntary organisations.¹⁴ Yet, when the expected air raids failed to materialise, much of daily life returned to normal. A poll in October, 1939, suggested that 50% of the working population thought there would be no air raids.¹⁵ In December, 1939, John Anderson, the UK Home Secretary, warned, "public opinion is only too ready to discount the risks of a large-scale attack, merely because no such attack has yet to be delivered". He urged that active steps be taken to "counter this spirit of false optimism".¹⁶ Without the anxiety created by nightly bombing, many people had little motivation to prepare for the bombing.¹⁷ A survey in June, 1940, found that 38% of London households had taken no air raid precautions beyond observing the compulsory blackout (ie, extinguishing sources of light that could help enemy aircraft to identify urban and industrial targets).¹⁸

The dissipation of anxiety similar to that in the phoney war was also apparent during the 3 months between the first reports of a deadly virus in China and the spread of cases within the UK early in March, 2020. On Dec 31, 2019, Chinese authorities notified WHO of an outbreak of pneumonia in Wuhan City, later classified as COVID-19.¹⁹ At the end of January, Britain entered the contain phase, designed to detect and isolate the first cases of COVID-19.¹⁹ Despite widespread media coverage, by March 1, a YouGov poll found that only 24% of UK adults feared catching the virus.²⁰ On March 12, as the number of confirmed cases in the UK rose to 596, with eight deaths, a policy of delay was introduced, designed to flatten the peak incidence of infection. Although the wisdom of holding large public events was questioned, in the week of March 8, the Cheltenham Festival (4 days of horseracing) went ahead, and attracted daily crowds in excess of 60 000 people. However, fear of catching the virus gradually increased, being expressed by 38% of adults on March 13. 3 days later, the prime minister urged people to avoid non-essential travel and to work from home if possible.²¹ In the week of March 16, as some schools and workplaces closed voluntarily, concern was expressed that the government was following rather than leading on preventative measures, prompting its announcement that schools would close from March 20. Lockdown was introduced on March 23, and not eased until 7 weeks later, on May 11.

Shelter occupation and lockdown

The first 2 months of the Blitz (in September and October, 1940) saw the highest civilian casualties of the war, with 27 091 people killed and wounded.²² To better understand how to protect people, the government commissioned studies of people's behaviour during air

raids. A November, 1940, survey of the 3.2 million people living in inner London found that only 4% took shelter in underground railway stations. A further 5% occupied street air raid shelters, and 27% slept in domestic air raid shelters constructed in their gardens. Hence, most people (64%) stayed indoors, under the stairs, in a basement, or in a ground floor room during air raids. Compared with inner London, the risk of death was lower in the suburbs, where a population of 4.6 million largely remained at their homes (70%), with only 4% going to public shelters and 26% to domestic shelters.²³ Wartime surveys revealed that people's overwhelming wish was to remain at home during the raids, preferring "the warmth and comfort of their own beds regardless of the noise and danger".²⁴ Zuckerman and Bernal found that death was rarely caused by the exploding bomb itself, and instead was usually a result of structural damage to the dwellings in which people had been sleeping.^{25,26}

During both the Blitz and the COVID-19 pandemic, people often acted ahead of the government. Some schools took an independent decision to close before the lockdown. Equally, the number of people choosing not to leave their homes began to rise before the official instruction to stay at home.²⁷ In September, 1940, Londoners living in flats or buildings without basements or gardens and who were therefore at increased risk from bombs, ignored the ban on the use of underground railway stations as shelters. Large numbers bought a platform ticket in the evening and refused to leave until the morning.²⁸ The weight of numbers prevented the authorities from removing people from the underground stations and forced a re-evaluation of the deep shelter policy. Henceforth, occupation of the underground stations was regulated with the provision of numbered bunk beds, medical facilities, and food deliveries.²⁹ In November, 1940, the Home Secretary and Minister of Home Security Herbert Morrison finally approved the provision of deep shelters, eight being constructed each with 8000 beds.³⁰

Deep shelter mentality and refusal to leave home

A study of lockdown adherence in ten UK cities on April 21 concluded that the most important belief driving compliance was the Blitz phrase, "we are all in it together and we all need to come out of it together", a sense of common fate, and a shared identity.³¹ At the beginning of May, popular support for the lockdown remained strong. A YouGov May 5–6 poll of British people found that 82% reported that they could manage well until June, and 63% until July.³² Furthermore, a poll at the end of May identified a reduction in stress associated with needing to stay at home, with 41% of adults reporting they had remained indoors for 5 or more of the previous 7 days.³³ Parents and teachers expressed unease about the gradual reopening of schools, even with physical distancing measures. In its October, 1941, review of morale, the UK Ministry of Information concluded that a secure base for food, warmth, rest, and sleep were material factors in the

maintenance of morale.³⁴ People's homes are often an expression of the self and associated with safety. Nostalgia (widely reported in North America and Europe during the 19th century and early 20th century, at which time it was seen as a psychological illness), was experienced by soldiers away on campaign and represented the loss of home.³⁵ A home-oriented mentality was important to wellbeing during air raids, even though homes could not offer as much safety as the underground stations (table). The UK Government therefore adapted its shelter policy to meet this popular preference. Introduced in March, 1941, the Morrison shelter was a steel-framed cage that could accommodate two adults and also function as a table, protecting users against all except a direct hit, so that people could remain in their homes with greater safety. However, home does not always serve as a protector against mental illness. A review of the psychological impact of quarantine found largely negative effects associated with boredom, isolation, and restrictions on movement.³⁷

A reluctance to leave home after the lifting of the lockdown has been described as a form of deep shelter mentality.³⁸ In fact, examples of this behaviour in the Blitz were rare and arose in a particular context, such as the occupation of a railway tunnel by several hundred inhabitants of Ramsgate after a series of air raids in late 1940.³⁹ Because of fears that these people would infect the surrounding population with their anxiety, they were forcibly evicted from the tunnel. An inquiry discovered that these people had lost faith in the official protective measures. As a coastal town close to German airfields in France, Ramsgate was vulnerable to low-level air raids, and civilians received no advance warning of attacks, with the sirens only sounding as the bombs fell. Feeling unprotected, families occupied the tunnel as the only sure form of safety. Furthermore, deep shelters were not popular. In response to the V1 missile attacks, five deep shelters with a total capacity of 40 000 beds were opened in July, 1944, but occupancy scarcely rose above 10 000 and Morrison closed two of them.⁴⁰

Adaptation to threat

At first, air raid alerts led to a substantial loss of manufacturing time. When the alarm sounded, workers left their machinery to go to a shelter, where they might remain for several hours before the all clear sirens sounded to signal that it was safe for them to leave. By July, 1940, the UK Ministry of Supply was concerned by the loss of production. The solution proposed by the then Prime Minister Winston Churchill was to normalise the experience of threat, so that workers could work through the air raid alarms. Duff Cooper, Minister of Information, briefed journalists to report raids in a way to encourage people to think of "air-raids as a matter of ordinary routine... [and] learn to take air-raids and air-raid alarms as if they were no more than thunderstorms".⁴¹ Risks were re-evaluated. Trained

	Aerial bombing in World War 2	COVID-19
Demographic context		
UK population	46.3 million	66.7 million
Deaths	60 595 (0.1%)	45 432 (0.07%)*
Total casualties versus total infected	146 777	296 377*
Highest number of deaths per day	1820 (April 16–17, 1941)	1228 (April 21, 2020)
Responses to threat		
Government concern	A deep shelter mentality would cause people to remain underground, eroding resilience and preventing them from working	A resistance to restrictions on movement would undermine the effectiveness of lockdown measures
Public response	People preferred to shelter at home; deep shelters were underoccupied	Adherence to lockdown measures was high and concern was expressed about premature relaxation of these restrictions
Protective strategies	People volunteered for, or were recruited into, welfare and emergency response organisations, such as Air Raid Precautions, Auxiliary Fire Service, Civil Defence Service, and Women's Voluntary Services; householders were required to observe the blackout	Physical distancing
Inoculation	A popular belief that bombs could not strike twice in the same place so that a nearby explosion protected individuals against future raids	Search for a vaccine
*Total on July 22, 2020. ³⁶		

Table: Comparison of aerial bombing in World War 2 and the COVID-19 pandemic in the UK

observers were placed on rooftops with the authority to over-rule the warning sirens. Loudspeaker systems and shelters constructed within factories enabled plane spotters to delay the order for workers to take cover until the last minute, and then declare a rapid return to work after the air raid. A feature common to the Blitz and COVID-19 is the willingness of key workers, whether firefighters, air raid precaution wardens, health professionals, or those in vital industries and services, to continue in their roles despite substantial risk to their lives.

By 1942, government research had shown that of buildings destroyed during air raids, 80% were a result of fire and only 20% a result of explosives.⁴² Both the management of fires and the spread of infection are driven by the principle of early identification—for fires, to extinguish them before they become established, and for COVID-19, to quarantine people to reduce the spread of infection, and treat those who are ill. In September, 1940, the government issued the first Fire Watchers Order, which compelled those responsible for large factories, warehouses, and yards to introduce a system of monitoring.⁴³ All males aged 16–60 years who were not in the armed forces had to register for fire watching and do a maximum of 48 h duty per month. Inefficiencies in this system were addressed by adding capacity to control centres and by improving communications with industry. Equally, the UK Government issued COVID-secure work practice guidelines for vital industries and services

operating during the lockdown, which included practical measures designed to minimise the transmission of infection.⁴⁴ With the lifting of lockdown, monitoring systems sought to identify local outbreaks, with track and trace systems, and also through teams within organisations to monitor illness rates.

Observance of regulations

Given the psychological effects of chemical weapons observed in World War 1, the UK Government feared the impact of bombs filled with toxins on the civilian population.⁴⁵ Accordingly, adults were required to carry a gas mask when at work or outside their home. The use of gas masks was monitored, as a measure of both preparedness and anxiety. In September, 1939, shortly after the declaration of war, 71% of men and 76% of women in inner London obeyed the regulation. Habituation and the absence of air raids saw the number of people carrying gas masks fall to 24% of men and 39% of women by November that year.⁴⁶ By spring, 1940, gas masks had become a rarity on the streets, although the evacuation of British troops from Dunkirk and fears of an invasion saw the proportion of people carrying them rise to 30%.⁴⁷ During the Blitz, gas mask use fluctuated with the intensity of attacks and number of resulting deaths. During the lull in bombing during February, 1941, when monthly deaths fell to 283, only 5% of Londoners carried gas masks, although the rate climbed in April, when deaths rose to 2557. This evidence underlines the role of emotion as a driver to action. Equally, a study of a multinational sample done during the 2009 H1N1 influenza pandemic found that those people most anxious of becoming infected were the most likely to reduce their use of public transport or cancel flights.⁴⁸

The blackout and physical distancing, both governed by regulations and fines, are based on the principle of collective responsibility.⁴⁹ Failing to carry a gas mask risked only the individual, but exposing a light endangered the whole community.⁵⁰ During the phoney war, Churchill worried that the hardship created by the blackout might erode morale and damage productivity.⁵¹ Yet, when in September, 1944, the government introduced the dim-out (allowing the public and local authorities to use lights of equivalent intensity to moonlight), many people continued to observe the blackout, feeling protected by the darkness. This response was similar to the reluctance of some people to return to cafes and shops when they reopened in July, 2020.

Evidence gathered during the lockdown showed that people generally observed official regulations governing behaviour. The number of passengers on public transport fell dramatically and remained low, although use of motor vehicles slowly increased during April and May.⁵² As in the Blitz, not all regulations were observed scrupulously, particularly those that most affected individuals' daily lives. People with a cough or fever were instructed to remain entirely at home for 7 days: surveys revealed that only 50% complied.⁵³

A second wave

The numbers killed by air raids fell substantially in 1942 and 1943, so that when the V1 missile campaign struck in June, 1944, people had relaxed their guard. Surveys revealed a substantial psychological shock: "nervousness, anxiety, strain and weariness are widespread. Sleepless nights account for much of the increased jitteriness and lowering of morale".⁵⁴ Londoners' spirits were judged "lower now than at any time during the last two years".⁵⁵ The need to deny the enemy from obtaining targeting information led to official censorship about the nature of the missiles.⁵⁶ This information vacuum encouraged speculation and fear. 2 weeks after the first missile was launched, the Ministry of Information challenged this tactic: "more details should be published... People ask for less secrecy and more true information".⁵⁴ As a result, the government issued cutaway drawings of the V1, with data on their size and weight, and publicised the measures taken to protect the public.⁵⁷ With their experience of the Blitz, people adapted quickly to this new approach. After 2 weeks, surveys showed that "people are beginning to adjust themselves to the [V1] raids". A growing number of Londoners believed that "the anxiety expressed is greater than the damage warrants".⁵⁴

Surprisingly, the government responded to the V2 ballistic missile campaign in September, 1944, with an official silence.⁵⁸ Because there was no defence against the missiles, which travelled faster than the speed of sound, it was argued that information about this new weapon might be more terrifying than censorship.⁵⁹ Instead of being given accurate information, the public were fed stories that the bomb damage was caused by exploding gas mains. However, civil defence workers had become expert in identifying the effects of bomb blasts and few believed the cover story. Not until Nov 10 did Churchill confirm the existence of the missiles, by which time it was considered that "the official silence add[ed] to the apprehensions of the nervous".⁶⁰ This evidence suggests that a second wave of COVID-19 would create psychological distress in a population weary of restrictions and believing that the worst of the pandemic was over. Unless there is compelling evidence of increased mortality, reimposing restrictions on movement might meet resistance from a nation that feels it has already made its contribution. Conversely, if the motivation exists to reimpose lockdown, then people who have developed coping strategies should adapt more readily than they did the first time.

Communication of risk

Throughout World War 2 there was an almost continuous demand for accurate information.⁶¹ In July, 1940, the civil defence commissioner in Reading argued that "frank explanation is what the public want and expect. Without it they feel that something is being hidden from them".⁶² Although the Ministry of Information had been set up to satisfy this demand, its role was often confused with

Search strategy and selection criteria

I searched The National Archives catalogue for the period 1938–1945 and Web of Science, using the terms “morale”, “resilience”, “shelter mentality”, “home intelligence” and “psychology” on March 30, 2020, applying no language restrictions. The search of the The National Archives was focused on five departments of government: the Ministry of Information, Home Security, Cabinet Office, Air Ministry, and the War Office.

propaganda. In February, 1942, the fall of Singapore, which the public had believed was impregnable, broke their trust in government communications.^{63,64} Brendan Bracken, Minister of Information, used the drop in public morale to focus on candid and objective news,⁶⁵ supported by a carefully laid plan of publicity and explanation.⁶⁵

As in World War 2, the Independent Scientific Pandemic Influenza Group on Behaviours advised the government to “provide clear and transparent reasons for the strategies that have and have not been selected; reduce ambiguity wherever possible”.¹³ However, this recommendation floundered upon the announcement of the easing of the stay-at-home restrictions and introduction of the “Stay Alert” slogan on May 10.⁶⁶ The ensuing public confusion prompted the government’s push to regain trust through the release of the evidence used by the Scientific Advisory Group for Emergencies and a re-emphasis on clarity.⁶⁷ Concern has been expressed by the scientific community about the volume of research on COVID-19, some of which has been rushed to publication.⁶⁸ The wartime government, in contrast, had more time to set up specialist units to gather and interpret data as the 6-year conflict unfolded.⁶⁹

Conclusion

The COVID-19 outbreak is often presented as a unique challenge, implying that there is no direct evidence base from which to make behavioural science recommendations. Furthermore, findings from the 2009 H1N1 influenza pandemic showed that people’s responses are influenced by cultural differences. A comparative study of preventive behaviours in five nations showed clear differences among uptakes of recommended measures, such as hand washing and wearing face masks.⁷⁰ However, the comparison with the Blitz suggests that similar or related events are not without value and contribute to an understanding of people’s behaviour when they are subjected to threat.

Because emotions drive behaviour, government policy in the COVID-19 pandemic delay and lockdown phases was directed towards increasing vigilance and adherence to rules by sensitising people to the risks of the virus. The value of anxiety as a driver to action was learned during the phoney war period, when most people had been reluctant to change their behaviour or prepare. To

maintain production and preserve vital industries, the wartime government fostered adaptation. In part, adaptation occurred naturally as understanding of the risks increased, but was also encouraged by tailoring protective measures to people’s preferences, and changes made to work practices. During the lockdown, worry and altruism were used to keep people at home and away from public places on the grounds that this saved lives. Encouraging people to return to work and use public transport is a substantial challenge, because of the inherent attraction of home, and because lockdown left little opportunity to foster elements of normal functioning. The lesson from the Blitz is that resilience is not a given, and has to be managed with cultural understanding.

Declaration of interests

I declare no competing interests.

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