

Remembering Sungai Buloh: Public safety, regulatory amnesia, and why prevention must precede celebration

Abstract

Public safety disasters are rarely sudden or unforeseeable. They are more often the cumulative outcome of prolonged regulatory neglect, weakened enforcement, institutional amnesia (forgetfulness), and the gradual normalization of risk within society. This reflective narrative revisits the 1991 Sungai Buloh fireworks disaster in Malaysia and places it alongside contemporary observations of increasingly prevalent roadside fireworks stalls during festive seasons. Drawing on personal daily encounters, disaster sociology, risk perception research, and governance literature, this narrative paper argues that prevention is not merely a technical or administrative option but a moral and civic obligation. The fading of collective memory surrounding the Sungai Buloh tragedy illustrates how societies become vulnerable when past disasters lose their guiding influence on present decision-making. Sustained prevention, precautionary governance, and ethical accountability are therefore essential to ensuring that celebration never overrides public safety.

Keywords: public safety, disaster memory, risk governance, fireworks regulation, prevention ethics

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Introduction

Each day while driving along a busy suburban road in Kuala Lumpur, I pass rows of temporary roadside stalls selling *bunga api* (fireworks and firecrackers) (Figure 1). As Chinese New Year (CNY) approaches, these stalls multiply, quietly occupying road shoulders and vacant spaces with an air of seasonal normalcy. When the first draft of this paper was written on 5 February 2026, the celebration was less than two weeks away, and the seasonal market had already begun to expand. Bright packaging, temporary canopies, and stacked boxes of fireworks form a visual landscape that many residents associate with the festive anticipation of the Lunar New Year. The atmosphere is lively and culturally familiar.



Figure 1 Temporary roadside stalls selling fireworks and firecrackers photographed on 5 February 2026 along a public road in Malaysia. Such informal sales locations often operate close to traffic corridors and residential areas, creating potential public safety risks due to inadequate storage controls, limited enforcement oversight, and high exposure of bystanders.

The sense that CNY is approaching brings excitement and nostalgia, reflecting the long-standing cultural tradition in which fireworks symbolize celebration, prosperity, and the welcoming of the New Year. At the same time, contemporary studies have increasingly examined the environmental and public health implications associated with large-scale fireworks use during festive periods, particularly in densely populated urban areas.¹⁻³

Yet for me, this everyday scene carries a quieter undertone shaped by memory. While the stalls project festivity, their roadside locations and temporary structures also evoke reflections about safety, regulation, and collective risk. Sociological studies of risk perception suggest that ordinary environments often conceal latent hazards because repeated exposure gradually normalizes them in the public imagination (Slovic, 2000).⁴ In this sense, the roadside fireworks stalls represent more than seasonal commerce. They become small but visible reminders of how societies balance celebration with safety, tradition with governance, and cultural continuity with public responsibility.

Figure 1 depicts temporary tent-based retail stalls selling fireworks and firecrackers positioned close to traffic corridors. These informal and seasonal sales arrangements occupy regulatory grey zones in which enforcement, safety oversight, storage standards, and crowd exposure are difficult to manage consistently. As a contemporary visual snapshot, the scene reflects persistent public safety vulnerabilities and underscores the continuing relevance of preventive governance. It also serves as a contextual trigger for this narrative reflection, especially when considered alongside the long history of fireworks-related injuries and fatalities that continue to shape public risk awareness.

Yet, the expectation that such incidents automatically lead to meaningful learning is not always supported by evidence. Research has shown that organizations may struggle to absorb or act upon the full lessons of past failures, even when hazards are well documented.⁵ This tension between visible risk and limited institutional learning further strengthens the case for renewed attention to prevention, regulation, and reflective policy response.

On 20 February 2026, my feelings and worries are unfortunately justified when there was a bad news that we would feel sorrowful in the moments of CNY celebration. A 31-year-old man in Segamat (Johor), lost his right leg after an illegal firework, described as a “Thunderbolt” or “Bola,” exploded prematurely on February 19, 2026.

Police are investigating the case under Section 8 of the Explosives Act 1957 and are searching for the seller of the illegal explosives.⁶

This return of widespread fireworks sales prompts a fundamental question. What happens when the memory of disaster fades faster than the risk itself? This paper is written as a narrative reflection grounded in public concern, arguing that forgetting past tragedies actively contributes to renewed vulnerability.

This paper adopts a narrative reflective mini-review approach, combining personal observation, historical analysis, and existing research literature to explore how disaster memory shapes contemporary public safety awareness. Narrative reflection has been widely used in social science and public policy scholarship as a means of linking lived experience with broader theoretical interpretation.⁵ In the context of risk governance, such reflection helps illuminate how everyday encounters such as observing roadside fireworks stalls can trigger deeper questions about institutional memory, regulatory practice, and collective responsibility. By situating personal observation within the broader literature on disaster sociology and risk perception, the present study seeks to bridge experiential insight with analytical discussion.

1991 Sungai Buloh firework explosion and its aftermath: fireworks disasters as incubated and recurrent public safety failures

In 1991, I was a schoolboy in Form Five at a governmental secondary school. Like many students at that time, I played with fireworks during festive seasons, although I can no longer recall exactly which types I used. What remains vivid is not the play itself but the shock that followed. The headline of the Sungai Buloh fireworks explosion that year left a lasting imprint on my memory. It was not a minor incident reported briefly in the news. It was a massive explosion, and its coverage dominated newspapers and television for weeks, repeatedly confronting the public with images of destructions and losses.

What followed was equally memorable. Fireworks were completely banned for many years after the tragedy. During that period, not a single “*Pi-Bang*” could be heard, including the stormy, atomic-like sounds that once defined festive nights when the awe can be felt. At least in my residential area, festive seasons passed in silence. That silence was not empty. It carried a shared understanding that something devastating had occurred, and that public safety, for once, had taken precedence over celebration.

In 1991, the Bright Sparklers fireworks factory explosion in Sungai Buloh killed 26 people and injured more than 100 others. Residential houses and schools were destroyed, and survivors struggled to articulate the scale of devastation, often resorting to comparisons with Hiroshima. Such descriptions were not rhetorical exaggerations but expressions of trauma. Research on collective memory and risk perception shows that societies tend to downplay hazards once temporal distance grows, even when consequences were severe.^{7,8}

The Bright Sparklers factory explosion in Sungai Buloh on 7 May 1991 should be understood as more than a tragic historical episode. It represents a classic example of what disaster scholars describe as an incubated failure. Investigations revealed that the factory had operated illegally since the late 1970s, storing large quantities of explosive materials within a residential area and employing underage workers. These unsafe conditions persisted for years despite regulatory frameworks that should have prevented them. Turner’s⁹

theory of man made disasters explains how such catastrophes arise when early warning signs accumulate but remain unaddressed until a triggering event exposes systemic neglect. In this sense, the Sungai Buloh explosion was not sudden or unforeseeable, but the predictable endpoint of prolonged regulatory tolerance. More broadly, research on technological and organizational disasters shows that catastrophic failures rarely result from isolated technical breakdowns alone. They emerge from complex interactions between institutional oversight, risk normalization, and systemic vulnerabilities that develop gradually over time.⁵

Perrow¹⁰ concept of normal accidents further clarifies why fireworks manufacturing and storage demand exceptional regulatory vigilance. High-risk technologies fail not only because of human error, but because complex systems interact with organizational complacency, fragmented oversight, and weak enforcement. Fireworks production is inherently hazardous, requiring strict zoning, professional handling, and continuous inspection. When these safeguards erode, disaster becomes a matter of timing rather than probability. Similar patterns have been documented in industrial explosions globally, where regulatory blind spots persist until tragedy forces institutional attention.¹¹ Sungai Buloh therefore stands as a structural failure, not merely an isolated explosion.

Festive Risk and forgotten lessons: contemporary fireworks incidents in Malaysia

The Sungai Buloh tragedy therefore represents more than a historical memory. It also provides an analytical lens through which contemporary fireworks incidents can be interpreted. By examining present-day cases alongside this earlier disaster, it becomes possible to observe whether institutional learning has strengthened prevention or whether the same patterns of risk continue to re-emerge over time.

Crucially, the legacy of Sungai Buloh has not translated into sustained prevention. Contemporary fireworks-related incidents in Malaysia reveal a troubling continuity of risk. Despite decades of awareness, fireworks continue to cause severe injuries and fatalities, driven by illegal products, unsafe modifications, improper handling, and weak enforcement during festive periods. Recent cases from 2023 to 2025 demonstrate that fireworks-related harm remains a recurring public safety issue affecting children, workers, bystanders, and medically vulnerable individuals.

On the eve of Deepavali in October 2025, an explosion in Paya Besar, Kulim injured at least 22 people who were watching an informal fireworks display in a residential area. Investigations indicated that an illegal “*kelapa*” firework had been ignited upside down, allegedly while the individuals involved were intoxicated. One victim suffered a fractured forehead and required transfer to Penang Hospital, while police arrested two men in connection with the incident. This case illustrates how quickly informal celebrations can escalate into mass casualty events when illegal fireworks and poor risk awareness intersect.¹²

In March 2025, a different but equally alarming incident occurred at a religious school dormitory in Jeli, Kelantan. Three students attempted to create a homemade explosive by inserting sulfur into a bottle filled with gravel. The device detonated prematurely, resulting in a 16-year-old student losing a finger, while two others sustained burn injuries. This incident highlights the accessibility of explosive materials and the lack of effective safety education among minors, where curiosity and imitation, combined with weak supervision, can lead to irreversible harm.¹³

Children have also been disproportionately affected by illegal fireworks. In Kampung Baru, Kuala Nerang, two brothers aged four and seven were injured by ball-shaped firecrackers in March 2025. The older child lost all fingers on his left hand and suffered severe facial lacerations, while the younger sustained burns. Such cases underscore how children rely entirely on adult protection and regulatory enforcement, and how failures in both translate into lifelong physical, psychological, and social consequences.¹⁴

Fireworks-related fatalities are not confined to informal street use. In December 2023, a 40-year-old technician died instantly while setting up a New Year's Eve fireworks display at a hotel car park in Port Dickson when explosive materials detonated prematurely. A colleague was also injured. This incident demonstrates that even organized displays carry significant occupational risks when safety protocols, training, or material controls are insufficient, reinforcing the need for stringent professional standards and oversight.¹⁵

Beyond explosions, fireworks-related harm also extends into public health domains. In February 2024, during Chinese New Year celebrations, an 80-year-old man suffered a fatal asthma attack after inhaling smoke from firecrackers. He fell into a coma and died eight days later. This case highlights an often-overlooked dimension of fireworks hazards: air pollution and respiratory triggers that disproportionately affect elderly individuals and those with pre-existing conditions, challenging the narrow framing of fireworks injuries as purely mechanical accidents.¹⁶

These contemporary incidents echo historical patterns established by Sungai Buloh. Recent statistics show little evidence of lasting improvement. In Kelantan alone, 17 children aged 9–10 were injured in April 2023, followed by another 17 victims aged 4–40 reported between March and April 2024.^{17,18} The repetition of similar injury profiles across decades reveals a failure to convert past tragedy into sustained preventive action. Taken together, Sungai Buloh and subsequent incidents form a continuous narrative of regulatory amnesia (a loss or disturbance of memory). Fireworks-related harm in Malaysia is not accidental in the strict sense but structurally enabled by illegal supply chains, informal sales, seasonal enforcement lapses, insufficient public education, and fading institutional memory. The persistence of these incidents reinforces a fundamental public safety principle. Prevention is always more effective, ethical, and humane than post-incident response.

Governance responsibility and regulatory amnesia

It is reasonable to argue that governance bears responsibility when illegal and hazardous operations are allowed to persist for years. Risk governance is not fulfilled by the existence of laws alone; it depends on consistent enforcement and institutional vigilance. Allowing unsafe practices to continue constitutes a silent transfer of risk from institutions to the public.

Following the 1991 disaster, Malaysia imposed strict bans and controls on fireworks manufacturing and sales. Initially, enforcement was visible and firm. Over time, however, exceptions multiplied and enforcement weakened. This pattern aligns with what regulatory scholars describe as regulatory drift and regulatory amnesia, where rules remain formally intact but lose operational force.^{19,20} Empirical studies show that institutional memory decays unless actively maintained through training, enforcement routines, and public reminders.²¹ When enforcement relaxes during festive seasons, risk is not eliminated but socially redistributed, often to those least aware or least protected.

Taken together, these incidents reveal several recurring patterns. First, many accidents involve illegal or modified fireworks, highlighting weaknesses in enforcement and supply control. Second, children and bystanders frequently become unintended victims, indicating gaps in adult supervision and public safety awareness. Third, both informal celebrations and organized displays can produce severe injuries when safety protocols fail. These recurring characteristics suggest that fireworks-related harm is not random but structurally patterned, reinforcing the argument that sustained regulatory vigilance and public education remain essential.

Theoretical integration: regulatory amnesia, normal accidents, and risk normalization

The recurring pattern observed in fireworks-related incidents can be interpreted through a synthesis of several theoretical perspectives from disaster sociology and risk governance. Turner's theory of man-made disasters explains how catastrophic events often emerge from long incubation periods in which warning signs accumulate but remain unrecognized or unaddressed.⁹ These incubation periods are frequently sustained by institutional complacency, fragmented oversight, and gradual erosion of regulatory vigilance. When viewed through this lens, the Sungai Buloh explosion exemplifies how disaster is often the culmination of long-standing governance failures rather than an unpredictable anomaly.

Perrow's concept of normal accidents complements this perspective by emphasizing that accidents in complex and hazardous systems are not entirely avoidable once organizational safeguards weaken.¹⁰ In such systems, multiple small failures can interact in unexpected ways, producing outcomes that exceed the capacity of institutions to respond effectively. Fireworks manufacturing and storage represent precisely this type of high-risk environment, where technical hazards interact with regulatory oversight, human behavior, and organizational decision-making.

A third dimension arises from research on risk perception and normalization. Slovic et al.²² demonstrated that repeated exposure to hazardous activities without immediate consequences gradually reduces perceived danger, a phenomenon that can lead societies to underestimate genuine risks.^{8,22} Over time, this process contributes to what governance scholars describe as regulatory amnesia, where institutional memory of past disasters fades and enforcement practices weaken.^{19,20} When these three dynamics interact—incubation of risk, systemic vulnerability, and normalization of danger—the probability of repeated incidents increases significantly. The Sungai Buloh tragedy and subsequent fireworks incidents in Malaysia therefore illustrate how regulatory amnesia and normalized risk can converge to recreate the very conditions that once produced disaster.

Festivity, culture, and the normalization of risk

Fireworks occupy a powerful symbolic role in cultural celebration, representing renewal, joy, and collective identity. Questioning their regulation is frequently misinterpreted as cultural opposition. Yet history demonstrates that cultural practices consistently evolve alongside safety norms. Building codes, food safety laws, and traffic regulations were all once contested before becoming accepted protections.

Temporary roadside fireworks stalls (Figure 1) present particular governance challenges. Their transient and informal nature creates what Beck⁴ describes as diffuse responsibility, where accountability becomes unclear before accidents occur. Studies on informal

economies consistently show that safety risks are highest where oversight is weakest and temporality is greatest.²³

Risk perception research further demonstrates that familiarity reduces perceived danger, even when objective risk remains unchanged.²² Repeated exposure to fireworks without incident gradually reframes them as harmless, despite historical evidence to the contrary. This psychological normalization of danger is precisely why institutional safeguards must remain firm when public vigilance wanes.

Prevention as an ethical imperative

“Prevention is better than cure” is often dismissed as a truism, yet in public safety it functions as an ethical principle rather than a slogan. Once lives are lost, no policy revision or compensation can reverse the harm. The precautionary principle, widely adopted in environmental health and safety governance, asserts that known hazards require preventive action even in the absence of complete certainty.²⁴ This preventive ethic is equally emphasized in environmental management, where proactive protection is considered essential to avoid irreversible ecological damage. For example, assessments of biodiversity vulnerability in the Persian Gulf demonstrate that preventive governance is necessary to mitigate long term impacts from industrial activities such as desalination before ecological degradation becomes irreversible.²⁵

Long term surveillance and epidemiological investigations consistently demonstrate identifiable risk factors, predictable injury patterns, and recurring public safety failures associated with consumer fireworks use.^{26–29} These studies show that injuries frequently involve non users, including children and nearby observers, highlighting the broader community exposure inherent in fireworks incidents. Safety science research further shows that most accidents are preventable through early intervention, enforcement consistency, and hazard reduction rather than post incident response.³⁰ Remembering Sungai Buloh is therefore not about fear or restriction. It is about ethical fidelity to lessons already paid for with human lives.

Conclusion

This narrative paper is written not as accusation, but as care. Care for public spaces, for families living near roadside stalls, for children drawn to festive packaging, and for a society that deserves celebration without avoidable danger. Public safety should never be framed as an obstacle to culture. It is the condition that allows culture to endure responsibly. If Sungai Buloh fades from public consciousness, the loss is not merely historical. It is ethical. Forgetting disasters weakens prevention, erodes accountability, and invites repetition. Prevention must precede celebration, not as an inconvenience, but as a shared responsibility owed to past victims and future generations. Strengthening prevention requires several practical governance measures. First, enforcement cycles should remain consistent throughout the year rather than intensifying only during festive seasons. Continuous inspection and monitoring reduce the likelihood that illegal supply chains re-emerge during periods of high demand. Second, zoning regulations should clearly prohibit temporary fireworks sales near high-traffic corridors or residential areas, thereby reducing exposure to large numbers of bystanders. Third, public education campaigns should accompany enforcement strategies, particularly targeting children and young adults who are frequently involved in fireworks-related injuries. These measures do not eliminate cultural celebration but rather ensure that celebration occurs within boundaries that protect public safety.³¹

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Conflicts of interest

The author declares there is no conflict of interest.

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