

Fire, Fear and Flames: Emotion and Evolution in Bushfire History

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BECAUSE WE FORGET

IF I ASKED YOU TO REMEMBER the worst fire disaster in United States history, what would you say? You might think of the Great Chicago fire of 1871, which burned for three days across nine square kilometers of the city, including the central business district, killing at least 250 people and leaving thousands homeless. Said to have been started by a lantern knocked over in a barn, this fire has been immortalized in United States history and culture (**FIGURE 1**). Chicago was rebuilt, fire regulations and architectural standards were radically overhauled, and the city paused to reflect on the costs of uncontrolled industrial development as it gathered to care for the homeless and restructure its shattered economy.

October 8, 1871 was not a good day for fires around the Great Lakes, but that had nothing to do with clumsy handling of lanterns. A fierce westerly wind-change turned many small ordinary fires—a structure fire in Chicago, burning-off vegetation in the country—into infernos. Across Lake Michigan, the cities of Holland and Manistee shared Chicago’s fate, and further east, Port Huron also burned. But while the papers were obsessed with the burning of Illinois’s biggest city, an even greater tragedy had unfolded to the north. In the forests of Wisconsin, wildfires raged across six hundred thousand hectares, destroying the frontier town of Peshtigo. The fatalities from this fire are not certain: some accounts say fifteen hundred, others as many as two thousand, five hundred. Any records of the impoverished itinerant workers and Native Americans in the region were lost in the fire. Many of the bodies were never identified. The Peshtigo fire remains the worst wildfire tragedy in recorded history. But unlike its famous neighbor, the Peshtigo fire was, for many years, all but forgotten.

This selective memory is not restricted to the United States. Ask any Australian to name the natural disaster that struck in 1974, and they will instantly reply, “Cyclone Tracy.” Cyclone Tracy





FIGURE 1. The Great Chicago Fire has been seared into United States culture in art, literature, and film. (William Flint, *Chicago in Flames*, 1871, lithograph, Union Publishing Company [Chicago History Museum, ICHI-64423].)

all but flattened the entire northern city of Darwin on Christmas Eve 1974, leaving seventy-one dead and most of the population homeless. Refugees from the cyclone fled to cities on the other side of the continent. It was Australia's greatest natural disaster at the time: a trauma from which many have not yet recovered.¹

But Cyclone Tracy was not the only disaster to befall Australia that year. Over that same Australian summer of 1974–75, 117 million hectares—15 percent of the continent—burned in the largest wildfire ever: an area equivalent to the combined states of Texas, New Mexico and Oklahoma.² By contrast, the largest area of land burned in a single year in the United States is just four million hectares. Yet despite their truly extraordinary scale, hardly any Australians even know about these inland fires.

How is it that we can forget the deadliest or largest wildfire in human history? These are not one-off events, whose dangers have long passed. Like the United States, Australia has an extensive history of well-documented fire disasters, dating from the earliest European settlements to the present day (**TABLE 1**). Yet whenever fires strike, as they do with increasing regularity in fire-prone areas across the United States and Australia, residents and authorities react with shock and surprise—every time, again and again.

WHY DO WE FORGET?

This lack of preparation for what is a rare, but recurrent, event may have a wide range of explanations. We should know, from our experience with health campaigns, just how hard it can be to change behavior in the short term to reduce serious long-term risks. How many of us still smoke, weigh too much, or don't exercise enough? We all know these are the major risk factors

¹ E. R. Chamberlain et al., *The Experience of Cyclone Tracy* (Canberra: Australian Government Publishing Service, 1981), 147–50.

² D. Clode, *A Future in Flames* (Melbourne: Melbourne University Press, 2010), 79–80.

TABLE 1. Australia's Most Fatal Bushfires

SEASON	STATE	AREA BURNED	FATALITIES
1850/51	Vic	5,000,000 ha	12
1897/98	Vic	260,000 ha	12
1926/27	Vic	400,000 ha	60
1938/39	NSW	73,000 ha	13
1938/39	Vic	1,520,000 ha	71
1943/44	Vic	1,000,000 ha	59
1951/52	NSW	4,000,000 ha	11
1966/67	Tas	264,000 ha	62
1968/69	NSW	2,000,000 ha	14
1968/69	Vic	250,000 ha	22
1979/80	NSW	1,000,000 ha	13
1982/83	Vic	461,864 ha	47
1982/83	SA	160,000	28
2008/09	Vic.	450,000 ha	173

Source: S. Ellis, P. Kanowski, and R. J. Whelan, "Appendix D," in *National Inquiry on Bushfire Mitigation and Management* (Wollongong: Commonwealth of Australia, 2004), <https://ro.uow.edu.au/scipapers/4>.

for cardiovascular disease, one of the biggest killers in the Western world. We know we need to eat less, exercise more, stop smoking, and we will—next week.

A fire is much less likely to kill you than cardiovascular disease. Risk mitigation is much more costly and time consuming. Cognitive games of chance like this may well account for why people don't prepare adequately for bushfires.³ Perhaps the question is not why don't people in risk areas prepare, but why do we expect them to?

In part, our response to fire risk is a result of our eternal optimism. More than 50 percent of us think we are better drivers than average. We buy lottery tickets when the chance of dying before the draw is greater than the chance of winning. We think bad things won't happen to us, and even when they do, we think the consequences won't be that bad.⁴ Such optimism is a psychologically healthy way to live, but it does not always prepare us well for disasters. "Expect the best but prepare for the worst" is a great adage but sometimes hard to implement.

In truth, the risks of a fire happening to us, in our home, in our lifetime, are relatively small. The probability of a catastrophic fire is smaller still, even in high-risk locations. These fires have mainly occurred on a cross-generational basis—over twenty, fifty, or one hundred years. Long-term rural residents learn from the memories of their parents and their grandparents, from local history and folklore. In the highly mobile, urban-bushland interface, residents may lack these connections. "Tree changers" moving from the city to a rural location often have no family or local history in the region. As described in Cassandra Atherton's essay in this special issue, they may instead draw upon a pastiche of socially constructed memories of fire responses, not all of

³ K. Gow, "How Psychological Theories Can Help Make Sense of Residents' Lack of Preparedness for Bushfires," *Australian Journal of Psychology* 58 (2006): 138.

⁴ M. Siegrist and H. Gutscher, "Natural Hazards and Motivation for Mitigation Behaviour: People Cannot Predict the Affect Evoked by a Severe Flood," *Risk Analysis* 28, no. 3 (2008): 776.

which are either accurate or appropriate. Climate change may increase the severity and length of fire seasons (at least until the vegetational changes reduce them again), but even so, we are unlikely to have much time to learn from personal experience.

It is not only residents whose short memories leave them unprepared for fires. Agencies that could reduce the risk of fire through planning and regulation often fail to do so. Immediately after a fire, there is a flurry of activity and position statements. But by the time of the next fire—twenty, thirty, or forty years later—few of these will have been implemented or sustained.⁵ Fire risks extend beyond the institutional memory of such agencies. The memory keepers, long-time public servants, will have retired and the lessons they have learned are lost with them. In a world of increasing job mobility, the dangers of this loss of institutional memory are compounded.

Increasing people's perception of risk is not always helpful though. Tempting as it may be to screen horror-shock ads of disaster and devastation, evidence suggests that fear campaigns alone are counterproductive.⁶ Awareness of risk has to be paired with an awareness of self-efficacy. If people feel that they have no capacity to mitigate the damage of a future disaster, then they may feel that their fate is in the lap of the gods. Fatalism may also result in a lack of preparation with self-fulfilling results.⁷ Residents who believe they can make a difference may be more likely to do so.⁸ The greater someone's sense of self-efficacy, the more likely they are to succeed, making self-efficacy a self-reinforcing feedback loop. These individuals set themselves higher goals, invest more effort in both planning and action, persevere for longer, and perceive errors as learning opportunities.⁹

For most of us, the mere thought of dealing with a large, life-threatening fire is simply too frightening even to contemplate. The psychology of fire, and fire preparedness, is very much the psychology of fear—and how we can overcome it. In order to understand how and why we react to and prepare for fires, we need to understand how the brain operates under high-stress conditions.

IT'S ALL IN THE BRAIN

Bushfires are terrifying. Like many natural disasters, they not only threaten our lives and homes, but also take away our sense of control and place us at the mercy of the elements. A fire experience can be deeply traumatic, particularly when there are significant losses—of friends, family, animals, or homes.¹⁰ Fundamentally, fires challenge our sense of security and safety in our own homes, disturbing the basic fabric of how we live our lives and interact with our environment.

To understand how we respond to life-threatening situations, we need to understand how our brains work. If you imagine an ultrasound scanning down from the top of your head, the twin bumps of the neocortex would emerge first—the complex, convoluted structure that defines

⁵ T. Griffiths, "We Have Still Not Lived Long Enough," *Inside Story*, Feb. 16, 2009, <https://insidestory.org.au/we-have-still-not-lived-long-enough/>.

⁶ T. Daniel, "Managing Individual Response: Lessons from Public Health Risk Behaviour Research," in *Wildfire Risk: Human Perceptions and Management Implications*, ed. W. E. Martin, C. Raish, and B. Kent (Washington: RFF Press, 2008), 111.

⁷ A. Asgary and K. G. Willis, "Household Behaviour in Response to Earthquake Risk: An Assessment of Alternative Theories," *Disasters* 21, no. 4 (1997): 362.

⁸ C. Abraham, P. Sheeran, and M. Johnston, "From Health Beliefs to Self-Regulation: Theoretical Advances in the Psychology of Action Control," *Psychology and Health* 13, no. 4 (1998): 572; A. Ripley, *The Unthinkable: Who Survives When Disaster Strikes—and Why* (New York: Random House, 2008), 79.

⁹ Abraham, Sheeran, and Johnston, "From Health Beliefs to Self-Regulation," 579.

¹⁰ For a compelling illustration, see the documentary *Afterburn: In the Tiger's Jaws* directed by Moira Fahy (One Thousand Productions, 2014).

our species, gives our brains their walnut appearance, and composes our thoughts and intellect. Farther down and we reach the white bridge of the corpus callosum stretching its bundled fibers between the hemispheres, linking left with right. Lower still and the thalamus and hypothalamus come into view—the seat of love and anger, fear and courage. Blink and you might miss the small, almond-shaped amygdala—our brain’s internal alarm bell¹¹—before descending into the realms of the old brain we share with other mammals, birds, and even reptiles, the area that controls our every move, day and night.

Our brain is literally two brains—not left and right, but old and new, one overlaying the other and each working seamlessly in parallel (**FIGURE 2**). The old brain feels hunger, fatigue, and loneliness. The neocortex sifts through these mute waves of emotion that sweep up from below, converting them into rational explanations—food, bed, and love. It calms, soothes, and suppresses our emotional urges, like a trainer working with a flighty horse. It vetoes panic and overrules our gut reactions. It talks us out of them. But our clever-thinking brain is not always right.

When we see smoke, our neocortex searches for a rational explanation, something within our realm of experience, something that has happened before. Our neocortex sends us out for more information to confirm or deny its suspicions. It is cautious—a thinker—carefully weighing the pros and cons, always conservative, always erring on the side of what is known, rather than what might be imagined. If smoke and fire are not within the realm of its experience, the neocortex looks for another explanation. It tries to normalize the world and send us back about our everyday business. When the world refuses to be normal, we suffer from “cognitive disarray.”¹²

The old brain is a doer, not a thinker. Its memories are not limited to this life but extend back into our evolutionary past, into times of feast and famine, through wars and predators.¹³ Most of

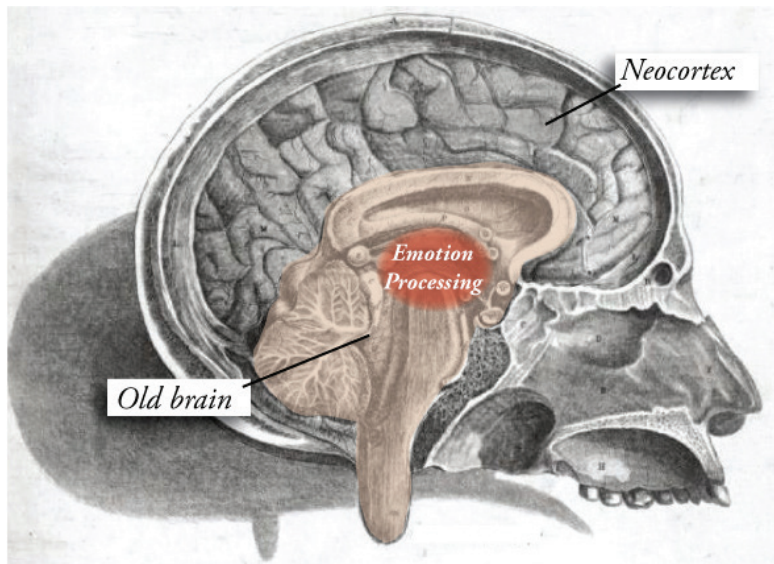


FIGURE 2.

The old brain and the new brain replicate many functions but perform them in different ways. (Alexander Monro, from *Observations on the Structure and Functions of the Nervous System*, University of Otago Special Collections [Edinburgh: Printed for and sold by William Creech, 1783], <https://www.otago.ac.nz/library/exhibitions/monro/cabinet8/inside.html>. Coloring and labels added.)

¹¹ D. Debatisse et al., “Emotions, Fear and Fright in the Human Being,” in *Fear in Cognitive Neuroscience*, ed. S. Campanella (Hauppauge: Nova Science Publishers, 2006), 17.

¹² J. Leach and L. Ansell, “Impairment in Attentional Processing in a Field Survival Environment,” *Applied Cognitive Psychology* 22, no. 5 (2008): 643.

¹³ H. S. Bracha, “Human Brain Evolution and the ‘Neuroevolutionary Time-Depth Principle’: Implications of the Reclassification of Fear-Circuitry-Related Traits in DSM-V and for Studying Resilience to Warzone-Related Posttraumatic Stress Disorder,” *Progress in Neuro-Psychopharmacology and Biological Psychiatry* 30 (2006): 830.

the time, it lies quietly, coloring our world with feeling. But under threat, a very different beast emerges. When the amygdala senses a danger to life—a speeding bus, a gunshot, the approaching roar of a bushfire—it responds faster than the thinking brain can track. We react almost instantly, a crack force of hormones sweep through the body increasing arousal (dopamine), vigilance (norepinephrine), and cortical activity (acetylcholine).¹⁴ We surge into survival mode: blood drawn in to the vital organs; defensive white blood cells to the skin; hunger, fatigue, and heat ignored; vision tunneled down to the essentials. Adrenalin bypasses the executive control centers of the brain that usually critically assess and moderate our behavior.¹⁵ Our old brain and body work as one, following some ancient survival strategy that successfully protected us from predator or disaster. We respond instinctively rather than logically, using preexisting patterns of behavior rather than coming up with new, innovative strategies to deal with a situation.¹⁶ We prepare to fight, flee, or hide. These fear responses are intended to facilitate a rapid response to a perceived threat, but they may also reduce our ability to make safe decisions in the event of a fire.¹⁷

None of our instinctive survival responses is particularly useful in a bushfire. Our brain searches for some preprepared plan or set of instructions about what to do in these conditions. People often freeze and do nothing or engage in inappropriate habitual behaviors, such as looking for their keys or worrying about paperwork. By the time the flames arrive, it is too late. Bushfires are complicated. It is not simply a matter of freezing, fleeing, or preparing to fight. Despite the fear, we need every bit of the clever, thinking part of our brain in a fire, just to survive. We need our thinking brain to recognize the danger and respond, not wait until fear takes over. We need to stay in charge.

Adrenalin helps us to survive, but it also prevents our brains from functioning the way they normally do. In the absence of the ability to think clearly, we need to have a set of instructions to follow—a preprogrammed contingency plan. Ensuring that people have ingrained, practiced routines to enact during an emergency is fundamental to psychological preparation. The importance of practiced emergency responses is the rationale behind staging fire evacuation drills, emergency services training, and military training.¹⁸ Soldiers, firefighters, rescue workers, and many others demonstrate the capacity of individuals to overcome fundamental self-preservation instincts to carry out required tasks that are frightening and may place their own lives in danger.¹⁹ Appropriate training can enhance the skills of anyone to perform these kinds of tasks.²⁰

¹⁴ Debatisse et al., “Emotions, Fear and Fright,” 24.

¹⁵ Leach and Ansell, “Impairment in Attentional Processing,” 644.

¹⁶ J. Panksepp et al., “The Psycho- and Neurobiology of Fear Systems in the Brain,” in *Fear, Avoidance and Phobias: A Fundamental Analysis*, ed. M. R. Denny (Mahwah: Lawrence Erlbaum Associates, 1991), 45.

¹⁷ J. Leach, “Why People ‘Freeze’ in an Emergency: Temporal and Cognitive Constraints on Survival Responses,” *Aviation Space and Environmental Medicine* 75, no. 6 (2004): 540–42.

¹⁸ M. Crichton, “Training for Decision-Making During Emergencies,” *Horizons of Psychology* 10, no. 4 (2001): 7–22; S. Daniels, “The Royal Australian Navy and Operations Other Than War,” in *Phoenix of Natural Disasters: Community Resilience*, ed. K. Gow and D. Paton (Hauppauge: Nova Science Publishers, 2008) 149.

¹⁹ J. Shakespeare-Finch and P. Scully, “Ways in Which Paramedics Cope With, and Respond To, Natural Large-Scale Disasters,” in *Phoenix of Natural Disasters: Community Resilience*, ed. K. Gow and D. Paton (Hauppauge: Nova Science P, 2008), 90.

²⁰ G. A. Holmes and R. T. Jones, “Fire Evacuation Skills: Cognitive-Behavioral versus Computer Mediated Instruction,” *Fire Technology* 32, no. 1 (1996): 60; R. T. Jones and J. Randall, “Rehearsal-Plus—Coping with Fire Emergencies and Reducing Fire-Related Fears,” *Fire Technology* 30, no. 4 (1994): 439.

BE PREPARED

In some respects, psychological preparation for bushfires resembles preparation for aircraft disasters. Aviation emergency training is a well-developed and researched field, which places a strong emphasis on behavioral aspects of emergency responses. Many studies have found that in a disaster, people frequently take longer to evacuate the plane than is necessary, often increasing the risk of death.²¹ Passengers' lack of psychological preparedness for aircraft crashes impedes their ability to respond appropriately, and they waste precious time wondering what to do or collecting belongings. This is why aircraft personnel try to insist that everyone runs through their safety and evacuation procedures on every flight. During a disaster, aircraft personnel are also trained to shout orders at people to get them off the plane, as strong commands break through people's fearful paralysis more rapidly than other instructions.

In an aircraft crash, trained personnel are responsible for shepherding untrained community members to safety. This leadership role is often what we expect in a disaster. People naturally look for leaders in times of crisis and are often more inclined to follow others who express strong views, even if those views conflict with their own beliefs about what is safe.²² The views of emergency services personnel, particularly those on the ground, such as firefighters and the police, tend to be given considerable weight by members of the public. Similarly, these people (and their representative organizations) are expected to provide leadership during disasters.

In severe fires, it is not possible for emergency services personnel to provide the general public with instructions about what to do, even though this may be what many community members expect. In bushfires, people are typically isolated during the disaster and cannot rely on others to provide directions and instructions. Although we may have a psychological need for leaders during a disaster, it is important to recognize that they may not be available and each individual or household needs to have its own plans for survival. Group discussions about bushfire plans at either a family or neighborhood level (such as those promoted by fire-awareness programs) are likely to ameliorate this need for clear direction. Social interaction provides feedback on decisions at the planning phase and provides a source of reinforcement during a crisis. Promoting such a high level of self-reliance in the community remains one of the greatest challenges for bushfire education.

By encouraging people to develop a bushfire survival plan, fire agencies help community members to identify appropriate, achievable behaviors in the event of a catastrophe. The value of these plans first depends on how well considered they are and how well they take into account the range of different events likely to occur during a fire (for example, fires at night, power failure, water failure, presence of different members of the household, etc.). The literature on emergency response training also strongly suggests that the value of these plans depends very much on how often they are practiced.²³ Developing and practicing these plans also promotes confidence and a sense of self-efficacy, which in turn reduces fear and promotes effective responses to emergencies.

²¹ A. Ripley, *The Unthinkable: Who Survives When Disaster Strikes—and Why* (New York: Random House, 2008), 176–77.

²² R. Gordon, "Acute Responses to Emergencies: Findings and Observations of 20 Years in the Field," *Australian Journal of Emergency Management* 21, no. 1 (2006): 17.

²³ D. M. Simpson, "Earthquake Drills and Simulations in Community-Based Training and Preparedness Programmes," *Disasters* 26, no. 1 (2002): 55.

TRIAL BY FIRE

It is difficult to assess the effectiveness of preparedness, practice, and planning for severe fires. Nature rarely offers opportunities for controlled experiments in disaster. In 2009, severe fires raged across the state of Victoria in Australia. These fires, known as the Black Saturday fires, killed 176 people in what was Australia's worst bushfire tragedy. Victoria lies at the heart of what fire historian Stephen Pyne calls the "fire flume," providing a unique combination of climate, weather, and vegetation conditions to predispose the area to massive, periodic conflagrations.²⁴ As a result of these conditions, this most densely populated state of Australia has historically suffered the highest level of fatalities from bushfires.²⁵

Although fire risk extends across the state, the urban-bushland interface to the north of Victoria's capital of Melbourne faces a particularly high risk with semiurban populations living in and near dense, highly flammable, tall timber forests. This risk has long been recognized by the state's peak bushfire fighting agency, the Country Fire Authority of Victoria. As a result, when the Black Saturday bushfires ravaged this area, they coincidentally swept through one of the regions in which a systematic program of community-based preparation training, known as Community Fireguard, had been implemented and maintained for several years. Developed in 1993, Community Fireguard provided facilitators who "assist small neighborhood groups to take responsibility for their own fire safety, and to develop strategies for reducing their vulnerability from major fires."²⁶ By 2009, 1,225 Community Fireguard groups were registered, covering 13,450 households. Like any community program, levels of engagement and participation were highly variable.

The 2009 fires impacted many Community Fireguard groups, some severely. Many groups suffered house losses, and several group members died in the fires. As part of a follow-up to see how these community groups fared, the Country Fire Authority sent out surveys to all Community Fireguard groups in the Black Saturday fire area.²⁷ In these surveys we asked whether the members of each group attended meetings regularly, attended them occasionally, or only received newsletters or fire warnings. We were particularly interested to know how many group members' houses were saved and about any other damage that occurred. Because previous research suggested that houses are much more likely to survive fires if they are defended, we also collected data on which houses were defended or undefended. As a control, we measured the level of house loss in similar nearby streets that were not part of a Community Fireguard group.

Over 50 percent of surveys were returned from a broad cross section of groups, ranging from those impacted mildly to those who suffered severe losses. Of the seventy-nine groups directly in the fire area, forty-two lost houses. Sixteen of these groups lost most of their houses and eleven tragically lost group members in the fires. House loss in these Fireguard groups was very strongly associated with fire severity. Three-quarters of the variation in house loss can be explained by how fierce the fire was in a particular area. Fire severity is associated with vegetation, so the closer

²⁴ S. J. Pyne, *World Fire: The Culture of Fire on Earth* (Seattle: University of Washington Press, 1997), 29–30.

²⁵ K. Haynes et al., "One Hundred Years of Civilian Bushfire Fatalities: Exploring Trends in Relation to Australia's 'Prepare, Stay and Defend or Leave Early' Policy," *Environmental Science and Policy* 13, no. 3, (2010): 189.

²⁶ S. Petris and P. Potter, *A Review of All State and Federal Reports on Major Conflagrations in Australia during the Period 1939–1994 and a National Bushfire Preparedness Strategy* (Canberra: Australian Fire Authorities Council and Emergency Management Australia, 1995), 22.

²⁷ D. Clode, *A Review of the Role of Community Fireguard in the 2009 Victorian Bushfires* (Mt. Waverly: Country Fire Authority, 2009), 8–9.

houses are to native vegetation, the greater the risk of house loss. This pattern has also been found in other major Australian fires, including the Ash Wednesday fires that burned across Victoria and South Australia in 1983; the fires that burned into the outskirts of Australia's capital city, Canberra, in 2003; and the 1967 fires that burned the outer suburbs of Hobart in Tasmania.²⁸ The close connection between proximity to vegetation and house loss has also since been confirmed for the Black Saturday fires.²⁹

Despite this strong association between fire severity and vegetation and house loss, however, being an active member of Community Fireguard also made a big difference. Our research found that it was not enough just to be in a Fireguard group though—it was only regular members who fared the best. Eighty percent of the regular members of Community Fireguard groups saved their homes in the Black Saturday fires. Only 64 percent of non-Fireguard households in the same area saved their homes. Those members who were described as “occasional, new, phone-tree, or newsletter-only” members fared much worse than the regular members of their group—around 65 percent of those members saved their homes (**FIGURE 3, GRAPH A**).

Regular members of Fireguard groups were much more likely to have defended their homes than irregular members, and defended homes generally had a much higher chance of survival (80 percent) than undefended homes (46 percent). Even the undefended homes of regular Fireguard members, however, did better than the undefended homes of irregular members, with 60 percent still standing after the fires compared with 44 percent (**FIGURE 3, GRAPH B**).³⁰ All that preparation does give your house a better chance of surviving, even if you decide that it is safer to leave.

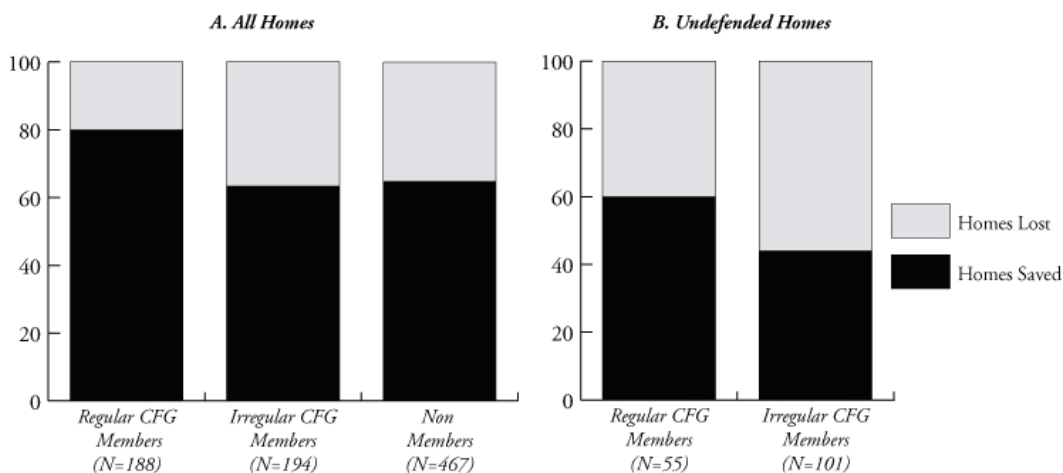


FIGURE 3. GRAPH A: Percentage of houses lost in the Black Saturday fires for regular and irregular Community Fireguard (CFG) members as well as nearby non-fireguard members. GRAPH B: Percentage of undefended houses lost for regular and irregular Community Fireguard members.

²⁸ K. Chen and J. McAnaney, “Quantifying Bushfire Penetration into Urban Areas in Australia,” *Geophysical Research Letters* 31, no. L12212 (2004): 1.

²⁹ R. P. Crompton, “Influence of Location, Population and Climate on Building Damage and Fatalities due to Australian Bushfire: 1925–2009,” *Weather Climate Society* 2, no. 4 (2010): 300–01.

³⁰ Clode, *Review*, 21–22.

Further qualitative study of these Fireguard groups also revealed that participation in these community models of preparation has a much broader social benefit than mitigating physical damage from the fire. Community Fireguard groups in the Black Saturday fires appear to have functioned as social capital—providing mutual benefit and building social networks and trust that facilitated cooperative and coordinated efforts.³¹ This social cohesion not only assisted members to prepare for and respond to the fires, but their bonds also fundamentally helped each other recover afterwards.

Psychological preparedness for bushfires not only improves people's ability to respond safely during the actual fire itself but also plays an integral role in preparation beforehand and recovery afterwards. Just as psychologically recognizing the risk of fire and its potential impact promotes physical preparation activities, physical preparation activities also increase psychological preparedness by promoting self-efficacy and confidence. The more prepared people are for a fire (both physically and psychologically), the better able they are to recover from the fire events. A continued sense of threat, or fear, impedes recovery.³² Much of the trauma associated with fire tends to involve the loss of control over our environment and lives. Being prepared, and knowing how to respond, even when it is unsuccessful, allows people to retain their sense of control and recover better from what are inevitably difficult and often traumatic events.³³

Even though we would like to have a rational, educated, and informed approach to wild-fire, ultimately our reactions are dictated by our emotions. Fire symbolizes home and hearth: it lights the darkness, warms us on cold nights, feeds us, and keeps away our fears. But it is still a force of nature that can break the bonds of our confinement. If we are caught unawares by wild-fire, our reaction is intense fear that instantly sweeps aside our ability to respond rationally and safely. Only by recognizing the role this powerful emotion plays—in our planning, preparation, response, and recovery—can we control our base reactions and ensure that we stay on a safe and rational path to survival. A

³¹ C. MacDougall et al., "Community-Based Preparedness Programmes and the 2009 Australian Bushfires: Policy Implications Derived from Applying Theory," *Disasters* 38, no. 2 (2014): 257.

³² R. Gordon, "Acute Responses to Emergencies," 19–20.

³³ S. D. Solomon, and E. M. Smith, "Social Support and Perceived Control as Moderators of Responses to Dioxin and Flood Exposure," in *Individual and Community Responses to Trauma and Disaster: The Structure of Human Chaos*, ed. R. Ursano, B. G. McCaughey, and C. S. Fullerton (Cambridge: Cambridge University Press, 1994), 196.