The Hazelwood Coal Mine Fire: Lessons from Crisis Miscommunication and Misunderstanding

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Abstract

When a bushfire ignited the Hazelwood coal mine in the Latrobe Valley 150 kilometers (95 miles) east of Melbourne, Australia, in 2014 and burned for 45 days sending toxic smoke and ash over the adjoining town of Morwell, crisis communication was required by the mine company, health and environment authorities, and the local city council. What ensued exposed major failures in communication, which resulted in widespread community anger and a Board of Inquiry. This critical analysis examines public communication during the crisis and the subsequent clean-up, and it reports several key findings that inform crisis communication theory and practice.

Keywords: natural disaster; emergency; crisis communication; emergency communication; public relations

Introduction

In February 2014 in the heat of the Australian summer, savage bushfires swept through the Latrobe Valley in the southern Australian state of Victoria, causing substantial damage to houses, livestock, wildlife, and the environment. In addition to constituting a crisis by themselves, the bushfires sparked a much longer lasting and potentially disastrous crisis when they ignited the Hazelwood open cut coal mine. Brown coal in the mine caught alight and burned for 45 days before being extinguished. In the process, the coal mine fire spread thick smoke and ash containing

potentially dangerous chemicals and particles over the adjoining town of Morwell.

Burning brown coal emits carbon monoxide, methane, sulphur and nitrogen oxides, volatile organic compounds, particulate matter, and potentially toxic trace elements such as arsenic and mercury (Carey, 2014; Castleden, Shearman, Crisp, & Finch, 2011), making it potentially very hazardous to human health and the environment when emissions reach high levels or occur over an extended period of time, as occurred at Hazelwood.

Not surprisingly, the 14,000 residents of Morwell, many living within a few kilometers of the mine, became concerned and soon were reporting respiratory problems, sickness caused by alleged carbon monoxide poisoning, as well as substantial damage to their homes and rainwater tanks caused by the smoke and falling ash.

As the fire burned out of control, the Department of Health ordered the evacuation of the elderly and those with respiratory ailments. The local school was closed and students moved to a nearby town. By the second week, even the local courthouse closed and hearings were adjourned to another location. After several weeks, with the fire still burning, residents became angry and rallied in protest at community meetings organized by emergency agencies as well as the locally-established Voices of the Valley community action group. Subsequently, in March 2014 the State Government of Victoria appointed a Board of Inquiry into management of the crisis with terms of reference including independent review of the effectiveness of public communication.

Background

An important context for understanding and evaluating this crisis communication case study is that the population of Morwell is largely of low socio-economic status (SES), comprised of mine-workers and their families, along with people involved in support services and agriculture in the surrounding area. As well as having relatively low education levels and low incomes, Morwell's population has an above average proportion of elderly, and internet connectivity and use is much lower than Australia's high online national average of 87 per cent (Internet World Statistics,

2013). These factors were known to government authorities responsible for community health, support and welfare and are important in evaluating the public communication that followed the outbreak of the Hazelwood coal mine fire.

The Hazelwood Coal Mine Fire Inquiry took place in Morwell, Victoria, in May and June 2014 after the mine fire, which began on February 9, was finally extinguished on March 25. The author was commissioned to review public communication and serve as an expert witness on May 14, and he subsequently delivered a 60-page report to the Inquiry on May 26 (Macnamara, 2014) and appeared before the Inquiry as an independent expert witness on June 5. The Inquiry concluded its hearings on June 13 and handed down its report on August 29, 2014.[1]

The Board of Inquiry estimated that the total cost of the fire to the Victorian Government, the operator of the Hazelwood mine GDF Suez, and the local community exceeded AUD$100 million (US$85-90 million), and made 18 recommendations for improving response to such emergencies in the future, including recommendations in relation to public communication.

Research

This case study was examined through content analysis of more than 4,000 pages of public statements, media releases, government authority notices and warnings, transcripts and videos from public meetings and media conferences, and statements by witnesses to the Board of Inquiry. These included announcements, notices, and updates issued by the Country Fire Authority (CFA) of Victoria and its Incident Controller of the site; the Victorian Environment Protection Authority (EPA); the Department of Health in Victoria; the State's Chief Health Officer (CHO); the Department of Human Services (DHS); the Latrobe City Council; and the mine company, GDF Suez Australian Energy. Also, statements and

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[1] Ethics approval was not required for this research as it used content analysis of documents (not human research) and The Board of Inquiry was appointed pursuant to Section 88C of the *Constitution Act 1975* (Victoria) with its powers specifically set out in the Order in Council dated March 21, 2014, and in Part 1, Division 5 of the *Evidence (Miscellaneous Provisions) Act 1958* (Victoria) (Evidence Act), which does not restrict publication of documents associated with the public inquiry.

media releases issued by the Premier of Victoria, the Minister for Health and Ageing, and other government leaders were analyzed. In addition, media coverage of the fire was reviewed through access to media clippings, video recordings, and transcripts provided to the Hazelwood Coal Mine Fire Inquiry by a media monitoring company, and the content of the Twitter and Facebook accounts of all of the above government departments and authorities and the mine operator during the period of the crisis were analyzed.

Because of the extensive data analyzed (more than 4,000 pages of statements and transcripts and several hundred media articles) and the formal nature of the research required to meet the evidentiary requirements of the inquiry, this analysis is presented using a social science approach rather than a traditional case study reporting format. After briefly outlining the methodology, this article summarizes relevant theories and best practice principles that are relevant to such cases, and then reviews the case in the context of this framework and the research questions posed by the inquiry.

Content analysis of relevant statements and documents was conducted qualitatively (Neuman, 1997, p. 273; Shoemaker & Reese, 1996), although some refer to such methods as textual analysis (Neuendorf, 2002). An initial stage of open *in vivo* coding was undertaken to identify categories and major themes in statements and reporting (Glaser, 1978; Punch, 1998, pp. 210–221). This inductive coding stage identified discussion related to the *cause* of the fire (e.g., accidental ignition by a bushfire; mine fault; arson/sabotage); *preparedness* by the mine company and government bodies; *operational response* (i.e., firefighting); *public information* including timeliness, comprehensibility, and tone; *community engagement*; *public health and safety*; *environment*; *industry/energy supply*; and *local business* (including economic effects). Texts were then analyzed in further detail using qualitative content analysis informed by the related interpretative techniques of textual analysis, frame analysis (Entman, 1993; Hallahan, 1999) and rhetorical analysis (Frey, Botan, & Kreps, 2000, p. 229) to examine what the community was told, when, and in what form. Specifically, this sought to identify the key messages, information, and advice that were provided to the community on key issues such as safety, public health, and so on. Coding was done manually by two analysts

independently and then compared to ensure maximum trustworthiness in the data.

Research Questions

The research questions posed by the Board of Inquiry and explored in this analysis were:

1. What information and messages were distributed to those affected by the crisis?

2. How timely was information distributed to those affected by the crisis?

3. How appropriate was information and communication for those affected by the crisis (e.g., in terms of medium, format, language, and tone)?

4. How effective was public communication during the crisis?

While the researcher did not have access to interview authorities or community leaders involved, his appointment as an independent adviser and expert witness to review public communication and advise the Board of Inquiry, which had legal powers to access all relevant records and information, afforded unrestricted access to public information and communication, as well as submissions and witness statements to the Board of Inquiry given under oath. Therefore, this critical analysis is conducted from a position of in-depth knowledge supported by direct access to relevant public communication materials and extensive witness statements.

Crisis, Emergency and Risk Communication Theories and Principles

A substantial body of literature has been produced on crisis management and crisis communication, although Robertson (2012) recently challenged that "very few crisis communication principles have been tested" and many so-called best practices "have no research to back them" (p. 15). Nevertheless, a framework for analysis is understanding what constitutes a crisis, how crises occur, and what strategies and actions are recommended.

Fearn-Banks (2011) says that "by definition...a crisis interrupts the normal flow of a business" (p. 2). This is quite narrow in focusing on *business* interruption, as crises can occur for governments, government departments and agencies, non-government organizations (NGOs), and not-for-profits. To be fair, Fearn-Banks (2011) also gives a fuller definition of a crisis as "a major occurrence with a potentially negative outcome affecting the organization, company or industry as well as its publics, products, goods, services or good name" (p. 2). In this definition 'publics' are mentioned, but the main focus remains on the organization or industry and its products, goods, services, and good name. Coombs (2007a) defines a crisis as "a significant threat to operations that can have negative consequences if not handled properly" (para. 2) and elsewhere as "a sudden and unexpected event that threatens to disrupt an organization's operations and poses both a financial and reputational threat" (Coombs, 2007b, p. 164). In referring to the 'organization's operations' these definitions are also organization-centric and functionalist. A crisis can occur for a community, such as citizens affected by disasters and accidents, and many business and organizational crises also create a crisis for external stakeholders and local communities.

These definitions, like much of the crisis communication literature, are more accurately described as definitions of an 'organizational crisis.' Kent (2010) has noted this bias in public relations and crisis communication scholarship, saying "nearly every conference paper and article written on crisis implicitly or explicitly treats crisis from the standpoint of the organization rather than from the standpoint of the organization's stakeholders" (p. 706). Coombs (2007b) does says that "crisis managers must begin their efforts by using communication to address the physical and psychological concerns of the victims" (p. 165), but this is not clearly addressed in most crisis communication research. Accordingly, this analysis proposes and uses a more holistic definition of a crisis as *an event, incident, or circumstances that seriously disrupt and negatively impact the legitimate activities and wellbeing of an organization, its stakeholders, and/or the community*. The following analysis focuses particularly on the impact of a crisis on a community and the effectiveness of public communication in the various stages of the crisis. A warning by Hagan (2007) that crises can include the "bizarre, the unthinkable, the

unlikely, the unexpected and the unimaginable" (p. 413) is also salutary in the case of the crisis examined in this analysis.

Crisis communication is usually considered a sub-set of crisis management, recognizing that the latter includes major operational responsibilities as well as legal, political, financial, environmental, and often human safety and welfare considerations. However, crisis communication, which is the focus here, is widely advocated as a central requirement—even a necessity for organizational survival—in all crisis management (Benoit, 1995; Coombs, 2004, 2006, 2014; Farmer & Tvedt, 2005; Fearn-Banks, 2011; Hagan, 2007; Ulmer, Sellnow, & Seeger, 2006; Sturges, 1994). As will be shown in this analysis, effective communication is also a key requirement for stakeholders and communities.

The field of crisis communication is closely related to *emergency communication*, which is a key element in emergency and disaster management, as well as some aspects of *risk communication* (e.g., see Sheppard, Janoske, & Liu, 2012). Theories, principles, and documented best practice in these fields in relation to public communication also provide a framework for the following analysis. However, it is noted that much discussion of emergency and disaster communication and 'communications' is focused on telecommunications services such as radio transmission, telephone and satellite systems, internet connectivity, and so on. Only information pertinent to human communication between organizations and affected individuals and communities is included in this analysis.

Phases and stages of crises, emergencies and disasters. Crisis, emergency, and disaster communication involves a number of key phases in which public communication as well as a range of operational initiatives need to be undertaken. While Coombs (2007a) broadly outlines the phases as "pre-crisis," "crisis response," and "post-crisis," and Fearn-Banks (2011) discusses five 'stages' of a crisis, emergency management literature has widely applied four phases based on a model developed by the National Governor's Association (1979) in the US and subsequently adopted by the Federal Emergency Management Agency (FEMA) and

many other emergency and disaster management agencies worldwide.[2] This includes *mitigation* (i.e., actions to prevent a crisis occurring or at least minimize effects), which are usually beyond the scope of communication, so this phase is not discussed here. While Neal (1997) has cautioned that phases of a crisis/emergency overlap and cannot be managed discretely, most crisis, emergency and risk communication literature identifies and discusses the importance of at least three key phases as follows:

1. *Preparedness*, which equips an organization to deal with a crisis and reduces risk and impact when crises occur;

2. *Response*, including initial warnings, notifications, instructions, and follow up communication during the course of a crisis; and

3. *Recovery*, the process of clean-up and rebuilding, physically, psychologically, and socially (Coombs, 1999; FEMA, 1993; Neal, 1997; Sheppard, Janoske, & Liu, 2012).

Before examining public communication requirements and best practice principles to be applied in these key stages, it is necessary to recognize that the nature or type of a crisis also has a significant impact on approaches adopted in public communication.

Causation and categorization of crises. The Institute for Crisis Management (2008) identifies four categories of crisis as (1) acts of God; (2) mechanical/technical/technological failures; (3) human error; and (4) management decisions or indecision. However, this is seen as broad. Organizations such as the International Red Cross have developed multi-layered taxonomies of crises, emergencies and disasters (IFRC, 2013). Within communication literature, Lerbinger (1997) identifies seven types of crises as follows:

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[2] Some emergency management agencies now refer to five phases of emergencies and crises. However, such models mainly amplify the established four phases by adding words such as 'planning' with preparation or 'prevention' with mitigation (see Baird, 2010, p. 7).

1. *Natural* crises such as earthquakes, tornados, hurricanes, tsunamis, floods, and accidentally started fires that are often described as 'acts of God';

2. *Technological* failures such as the nuclear power plant disaster at Chernobyl, the US Challenger space craft explosion, and the BP Deepwater Horizon oil rig disaster, as well as other mechanical and technical failures such as power black-outs, telecommunications network crashes, and shipping collisions, groundings or sinkings;

3. *Confrontation* crises such as activist attacks, union strikes, or consumer black-bans;

4. Crises caused by *malevolence* such as terrorism or sabotage enacted against an organization or society;

5. Crises caused by *systemic issues* such as management values and ethics that lead to unsafe practices (e.g., 'cutting corners' to save costs);

6. Crises caused by *deception* such as cover-ups of risks or faults; and

7. Crises caused by *management misconduct* such as fraud, sexual harassment, insider trading, or failure to adhere to standards and regulations (pp. 10–15).

Cause is a significant factor in determining a crisis communication strategy, and public relations scholars have used typologies such as those of Lerbinger to develop *Situational Crisis Communication Theory* (Coombs, 2004; Coombs & Holladay, 2002). In the first four categories of crisis identified by Lerbringer, the central organization or organizations involved are not at fault. In such crises, there is often a degree of sympathy for the organization(s), or at least neutrality. The fifth, sixth and seventh types of crisis identified by Lerbinger are *caused* by the organization and, in these types of crisis, there is little or no public or political sympathy for the organization and often anger and outrage directed towards it, which requires additional and often sensitive response.

It is important to note that, depending on preparedness and response (discussed in the following sections), the nature and perceptions of a crisis can shift from one type to another. For instance, a crisis originally caused by a natural disaster (act of God) such as an earthquake, flood or bushfire can evolve and escalate into one involving human error, mismanagement, or even deception and cover-up if an organization does not respond appropriately. Similarly, a technological failure that is initially seen as inadvertent and unavoidable can transition into a crisis of human error or systemic failure if pre-existing or related problems are subsequently revealed (e.g., a lack of maintenance or safety procedures, or a lack of community awareness and knowledge).

Preparation—responsibility before a crisis occurs. All crisis communication literature advocates that crisis communication should begin long before a crisis occurs (e.g., Mitroff & Anagnos, 2001). Researchers and experienced crisis communication practitioners identify a number of steps required for effective crisis communication that incorporate preliminary activities including the following:

1. *Scenario development* and *risk assessment* to identify potential risks and their respective probability and potential damage, based on past experiences and hypothesizing events and situations in 'what if' planning sessions (Coombs & Holladay, 2002; Macnamara, 2012, p. 303; Seeger, 2006);

2. Development of a *crisis communication plan* or strategy outlining all key actions to be taken in the event of a crisis occurring. These typically include establishing a *crisis team* comprised of the key people required in a crisis; establishing a *crisis center* when crisis or emergencies occur in a particular location; identifying whether a *Public Information Center* (PIC) is required (Hayes, Hendrix, & Kumar, 2013, p. 348); identifying whether a *Media Information Center* (MIC) is required (Hayes, Hendrix, & Kumar, 2013, p. 349); preparing *information materials* such as fact sheets; identifying *spokespersons*; and providing *media training* for spokespersons if required;

3. *Monitoring* to enable quick response in a crisis, including social media, as incidents and public concerns are increasingly first reported in social media (Ruggiero & Vos, 2014);

4. *Networking/bridge-building* to establish relationships with relevant groups such as regulators, unions, and community groups which are essential during a crisis (Macnamara, 2012, p. 304).

Crisis communication also includes at least four further steps, described in some literature as (5) *focusing* on key imperatives, as there are many competing demands in a crisis and communication can break down unless it is identified as a priority; (6) *implementing* the crisis communication plan; (7) *evaluation*; and (8) *recovery and reputation rebuilding*, or what Coombs and Schmidt (2000) call "image rebuilding."

Significantly, the first four of these stages of crisis communication are designed to occur pre-crisis. If the first four stages above are not implemented, an organization is considered to be ill-prepared for a crisis. One study found that 27% of organizations are not able to recover from a crisis, and often this is often caused by lack of preparation (Farmer & Tvedt, 2005).

Beyond the organization, contemporary approaches to emergency and disaster management focus on building individual and community resilience before such events occur. Key elements of creating resilience are understanding stakeholders and publics involved and early communication to create community awareness and knowledge (e.g., of risks and what to do in an emergency). Relevant to the crisis examined here is that the Australian federal government's *National Strategy for Disaster Resilience* states:

> Information on disaster risk should be communicated in a manner appropriate to its audiences, and should consider the different needs, interests and technologies used within communities. Knowledge, innovation and education can enhance a culture of resilience at all levels of the community. (Council for Australian Governments, 2011, p. 8)

Response to crises. Coombs (2006), who, with Holladay, developed *Situational Crisis Communication Theory* (SCCT), summarizes a simple 'golden rule' for all communication once a crisis occurs, saying "be quick, be consistent, and be open" (p. 149). Drawing on a number of crisis communication research studies, Coombs (2006) explains: "when a crisis

hits, an information vacuum forms. Stakeholders, led by the mass media, do not know what happened but want to know what happened" (pp. 149-150). He says the objective of crisis communication is to "fill the information vacuum with accurate information" (Coombs, 2006, p. 150).

Similarly, Fearn-Banks says that crises create a demand for information among the media and the public, particularly within affected communities. This demand for information extends well beyond the first hour or few hours of a crisis. Crisis communication best practice identifies the need for consistent ongoing program of communication, as well as operational activities (Fearn-Banks, 2011; Fink, 2013; Seeger, 2006).

An open communicative approach is sometimes opposed by legal advisers who seek to minimize the risk of regulator or civil legal action by avoiding any statements implying fault or even admitting to the severity of a crisis. However, it is useful to note what does *not* work effectively in a crisis according to communication research. As summarized in Table 1, silence is the most damaging approach in terms of public perception and reputation. Other approaches such as denial, excuses, and justification are effective *if* supported by credible evidence, but also result in negative public perceptions and reputational damage if not justified.

Five strategies for responding to a crisis have been proposed by Coombs and Fearn-Banks based on the literature, as follows:

1. *Apologia*—this approach, derived from the classical Greek term and practice and applied in contemporary crisis communication as *corporate apologia* (Hearit, 2001), is not simply apology and it does not imply admitting guilt or liability. In the legal system of classical Greece *kategoria* involved the prosecution delivering details of charges or complaints, which was then followed by the *apologia* in which a defendant offered a defense through explanation or rebuttal (Ryan, 1982). Three main approaches of *apologia* are (a) *redefinition* (redefining the crisis by explaining and re-contextualizing it); (b) *disassociation* (e.g., showing that it was caused by others or factors beyond the defendant's control, which must be supported with evidence and be convincing); or (c) *conciliation* which can involve an apology, but in the very least requires concern for those affected and

Table 1. Approaches in a crisis and public reactions (McDonald & Hartel, 2001).

Approach to Crisis	Public Attitude at the Time	Future Public Intention
Silence	Very negative	Very unlikely to trust or do business/deal with again
Denial	Not impressed and usually not believed	Unlikely to trust or do business/deal with again
Excuses	Deflects blame, but effective only if justified	Low likelihood to trust or do business/deal with again
Justification	Effective if credible	Neutral if credible
Confession/apology and Rectification	Impressed, particularly if includes rectification	Likely to trust and do business/deal with again

action to make reparation (Coombs, 2014). If an organization is at fault, it is highly recommended that it does not attempt redefinition or disassociation. Former TV reporter turned crisis communication consultant Jeff Crilley (2003) says: "Honesty really is the best policy. If you mess up, fess up" (p. 80).

2. *Decision theory*—this not only advocates that quick decision-making and decisiveness are important aspects of communication when and after a crisis occurs, but this body of knowledge proposes working through each possible action in advance to identify those that will have most benefit and least risk to all affected parties. This should be undertaken as part of scenario development, which is a stage of crisis preparation as well as during crises and, ideally, involves consultation with key stakeholders;

3. *Diffusion theory*—this draws on Everett Rogers' (1962/1995) *diffusion of innovations* theory that identifies how change filters down in society from influencers and early 'knowers' to others;

4. *Excellence Theory of Public Relations*—this 'dominant paradigm' of PR theory (L. Grunig, J. Grunig, & Dozier, 2002; J. Grunig, L. Grunig, & Dozier, 2006) calls for *two-way* engagement of publics through *dialogue* and discussion rather than one-way top-down dissemination of information;

5. *Image restoration*—even when effective crisis management has been implemented, organizations involved in a crisis need to take action to rebuild their reputation and key relationships (Coombs, 2006, pp. 156–160).

Recovery and rebuilding. The final phase of managing crises and disasters is recovery and rebuilding. There are important communication imperatives in this stage as well as operational requirements. Recovery and rebuilding pertain to more than physical property and infrastructure. Benoit (1995), who developed *image restoration theory*, outlined a range of strategies for dealing with crises, noting some that are effective and some that are not. He discussed five approaches with similarities to the research findings summarized in Table 1, as follows:

- *Denial*, including outright denial and shifting the blame (only effective if demonstrably true, but even then stakeholders expect the organization to help implement corrective action);

- *Evading responsibility* (rarely effective, even if the organization is blameless);

- *Reducing offensiveness* by trying to make the crisis look better or not as bad as some suggest (can backfire even if justified and causes outrage if unjustified);

- *Corrective action* (the most assuring response for all stakeholders concerned);

- *Mortification*, including expressing concern, apologizing, and admitting guilt if applicable. While admitting guilt is a major step with legal implications, some level of mortification (e.g., at least expression of concern) is considered essential (as cited in Coombs, 2014, p. 10).

While managing image, sometimes referred to *impression management* (Allen & Caillouet, 1994), and relationships during a crisis are critical to recovery and are the focus of much literature (e.g., Benoit, 1995; Coombs, 1999; Hearit, 1995), Ulmer, Seeger and Sellnow (2007) argue that a "discourse of renewal" should also be a key part of post-crisis communication during the recovery stage (p. 130). Furthermore, emergency management literature, which often describes crisis communication as *information management*, identifies that recovery of the organization is not the only or even the prime concern. This broader approach recognizes that affected communities often suffer considerable psychological and social as well as physical damage during a crisis and draws attention to the importance of bonding between individuals, groups and communities, and facilitating social recovery (e.g., see Nicholls & Glenny, 2005).

The following critical analysis of public communication during the 2014 Hazelwood coal mine fire is informed by these theories, principles, and recommended best practices in relation to crisis and emergency communication, as well as human communication theory broadly including rhetorical, phenomenological, and socio-cultural traditions (Craig & Muller, 2007; Littlejohn & Foss, 2008), and Excellence Theory of Public Relations (L. Grunig et al., 2002; J. Grunig et al., 2006).

Evaluation and Findings—Six Ways to Fail in a Crisis

Analysis of public communication during the 2014 Hazelwood mine fire yielded a number of positive observations. In statements to the Board of Inquiry and in media the community commended the job done by firefighters who were organized through the CFA. Their commitment to controlling and finally extinguishing the mine fire was widely recognized. The 'fireys' had the hometown advantage of including many local volunteers and also had high visibility. They were on site at the mine heroically fighting the fire and on the roads in their bright yellow 'high vis' suits and helmets staffing road blocks to divert traffic. They also attended

public meetings to brief residents—usually in full uniform and often blackened with soot. Their contribution to the community was obvious and appreciated.

However, the appointment of a Board of Inquiry was a response to widespread community anger over what it claimed was a lack of communication and consultation by a number of key government bodies and the mine company, and evidence presented to the inquiry confirmed a number of substantial failures in public communication when analyzed in the context of crisis communication and emergency communication theories and principles. Six key failures are identifiable from analysis of the thousands of pages of public statements issued during the crisis and evidence presented to the public inquiry.

1. Lack of Preparation

A number of pointers to inadequacy in preparation were revealed in the analysis of public communication and in the inquiry. Despite near universal emphasis on preparation in crisis and emergency communication theory and best practice manuals, a public communication strategy for dealing with a fire at the Hazelwood mine was not in existence prior to the 2014 outbreak. This was despite (1) the capacity of brown coal to catch fire at much lower temperatures than black coal; (2) a number of coal mines around the world having caught fire, most notably the Centralia, Pennsylvania, coal mine in the US which has been burning unchecked since 1962 and Burning Mountain in Australia,[3] as well as a number in China (O'Carroll, 2010); (3) previous fires having occurred at the Hazelwood coal mine; and (4) the mine being located in a bushfire prone area of rural Victoria. As such, it can be assessed that the lack of a crisis communication strategy was a gross oversight, and even potentially irresponsible.

The Fire Services Commissioner of Victoria, Craig Lapsley, reported that "in order to support the development of [a] strategic approach to communications, a Media Officer tasked with providing support and writing a communications strategy for the mine fire was deployed from

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[3] Burning Mountain near the town of Wingen around 220 kilometers (140 miles) north of Sydney is the oldest known underground coal mine fire, estimated to have been burning for 6,000 years.

the SCC [State Control Centre] to the Hazelwood ICC [Incident Control Centre]" on February 12—three days after the coal mine fire started. The "senior Media Officer" was relocated to the nearby town of Traralgon on February 13 to be part of "three separate groups of Public Information Units working on mine communications and creating a regional/state level communications strategy" (Lapsley, 2014, p. 26). Apart from the symbolic message conveyed by moving the communication staff out of Morwell to Traralgon 18 kilometers (10 miles) away, the most alarming aspect of communication revealed here is that a *draft* 'Communications and Stakeholder Engagement Strategy' was provided to the Fire Services Commissioner, the ICC, and the Regional Control Centre on February 16—a week after the coal mine fire started. Furthermore, it was not "incorporated into the State Strategy Support Team briefs" and implemented until after February 20—a full 11 days after the crisis began (Lapsley, 2014, p. 28).

In defending their approach and actions, the mine company and authorities such as the EPA argued that the coal mine fire was "unprecedented" (e.g., EPA Victoria, 2014; GDF Suez Australian Energy, 2014). However, as noted previously, brown coal combusts at relatively low temperatures, the surrounding area is bushfire-prone, and even though the causes of previous fires at the mine were internal, such as sparks from equipment, the Hazelwood mine had already caught fire previously in 2005, 2006, 2008, and 2012 ("Coal Mine Fires Commonplace," 2014, para. 2). These factors indicate that the 2014 fire was hardly unprecedented. It was predictable as part of any rational risk assessment. Legal Counsel Assisting the Inquiry told the Board:

> The fire was unprecedented in terms of its size and its impact on the community of Morwell and the broader Latrobe Valley; in every other respect the fire was not unprecedented….It was an entirely foreseeable event and it was one that should have been planned for. (Victorian Government Solicitor's Office, 2014, p. 2)

Evidence presented to the mine fire inquiry revealed that authorities had both underestimated and misread the nature of the crisis. The Emergency Management Joint Public Information Committee (EMJPIC) is a committee comprised of media and communications representatives from each of the emergency and related agencies in the state established "to ensure the most appropriate information is released during an emergency through

media and communication channels" (Tebain, 2014, p. 2). The chair of the EMJPIC, the Director of Media and Corporate Communications of the Victoria Police, Merita Tebain, told the inquiry that "as the chair of the Emergency Management Joint Public Information Committee and a member of the Victorian Emergency Communications Committee, I am able to provide evidence regarding whole of Victorian government communications relating to the Hazelwood Coal Mine Fire" (Tebain, 2014, p. 3). In giving evidence about events during the week following the outbreak of the fire, Tebain (2014) said "as the week progressed, the significance of the Hazelwood Coal Mine Fire became more apparent as the risk to energy supply diminished and the community effects came to light" (p. 3).

Tebain's statement, representing all of the Victorian emergency management bodies involved in the crisis, clearly illustrates that these organizations had interpreted the mine fire during much or most of the first week it burned as a risk to energy supplies. They did not identify a risk to human health and community welfare until this "came to light" in the form of complaints and angry protests by residents and the newly-formed Voices of the Valley community group. Given the information available about brown coal, the mine, and the area, this can only be interpreted as a very poor risk assessment and a gross miscalculation. It should have been clear from the information available that any fire in the mine would present a risk to human health and welfare as well as be a cause of concern and anxiety for people living in close proximity. Also, it reveals a framing of the event as an industrial issue and a concern for state energy supplies more than the welfare of the local community.

2. Confusing Information with Communication

The *Emergency Management Manual Victoria*, which was used and referred to by several government departments and authorities during the crisis and in the public hearings of the inquiry, identifies a number of aspects of what it refers to as "emergency management communications" including:

a. The issuing of public emergency warnings and emergency information during response (Part 3.7);

    b. Community engagement and communications during relief and recovery (Part 4.6). (as cited in Tebain, 2014, p. 43)

However the manual defines 'communications' as follows: "Communications means the practice of sending, gathering, managing and evaluating information. This can occur before, during and after (both long and short term) emergencies" (Emergency Management Victoria, 2014, p. 57). This definition in the state's key reference for emergency and crisis communication reveals a focus on *information* rather than communication and a *transmissional* view of communication rather than a transactional, interactive approach. As James Carey (1989/2009) observed, with some concern, in his classic text *Communication as Culture*: "the transmission view of communication is the commonest in our culture" (p. 12). More recently, Craig and Muller (2007) note that even today "contemporary communication theorists criticize the dominance of the transmission model in everyday thinking" (p. 1). The Victorian Government's emergency management manual and the communication attempts of authorities during the crisis reveal a lack of attention to reception and interpretation of information. The focus was on *messages*, not *meaning*. Failures in relation to interpretation and meaning making—i.e., what the Morwell community interpreted and understood—as well as a lack of community interaction and engagement are further discussed under key finding 4.

This failure to understand the key difference between information and communication permeated responses to public concern and debate in the inquiry. For instance, during the public inquiry hearings, legal counsel appearing on behalf of the Victorian government and the mine company repeatedly retaliated against claims of lack of public communication by pointing out that more than 150 "communications" were issued by government organizations during the period of the crisis. Counsel were referring to the number of documents distributed by various government authorities in relation to the fire during the period that it burned out of control—many of which were posted online, as will be discussed in a following section. When it was pointed out that this was information and not necessarily communication, the legal counsel and even some government communication staff looked nonplussed and confused. Similarly, the Fire Services Commissioner of Victoria, Craig Lapsley, told the inquiry that:

A comprehensive range of general communications was delivered to Victorians before, during and after the weekend of 8 and 9 February 2014 through such means as press conference, media releases, emergency warning broadcasts, paid advertisements, videos on YouTube.com and social media (including Facebook and Twitter). (Lapsley, 2014, p. 25)

While communication theorists Littlejohn and Foss (2008) point out that "a single definition [of communication] has proved impossible" (p. 3), the vast body of literature in the communication field today critiques transmissional views and informs us that communication involves transactional processes and rituals in which meaning is negotiated through social interaction and exchange of verbal and non-verbal messages (Adler & Rodman, 2012, p. 5; Alberts, Nakayama & Martin (2007, p. 21; Holmes, 2005, p. 6). This analysis found a fundamental misunderstanding of the nature of communication among management responsible for emergency and crisis communication and a propensity for a systems approach focused on distributing information (Millett, 1998).

3. Delays in Providing Information and Communicating

Notwithstanding claims of extensive information being issued by the relevant government departments and authorities, analysis showed that the Morwell community was not provided with timely information following the outbreak of fire in the Hazelwood coal mine. While the EPA issued 76 smoke alerts during the period of the fire starting February 11 (two days after the mine fire broke out) and its CEO, John Merritt, participated in media conferences in Morwell on February 9, 27, 28 and March 17, the first 'News and Update' in relation to testing air quality at Morwell was not issued until February 17—eight days after the coal mine fire started. The first media release from the EPA was issued on February 20—11 days after the fire broke out.

The Chief Health Officer for Victoria issued a number of 'Advisories' for residents in relation to health risks and evacuation during the crisis, but the first of these did not appear until February 17, the same day as the first EPA 'News and Update'—eight days after the crisis began. Also, significantly, neither the Chief Health Officer nor any representative of the

Department of Health attended the first public meeting in Morwell to discuss the fire and its impact on the community.

The Victorian Department of Human Services provides considerable information on its Web site in relation to 'Preparing for emergencies.' This includes information on essential services disruption and 'Managing stress during emergencies,' with links to the Victorian Bushfire Information Line (VBIL), St John's Ambulance, Lifeline, and other support groups. However, DHS was accused of doing little for the community and the Community and Public Sector Union (CPSU) claimed that the department even neglected the health and welfare of its own employees at the Morwell Centrelink office, a government unemployment agency (Nelson, 2014, p. 7).

Even the CFA, which was the most active of government agencies in terms of public communication, did not publish the first issue of its *Mine Fire Newsletter* until five days after the fire started and its first 'Mine Fire Update' was posted online on February 17—eight days after the outbreak.

Perhaps most significantly, noting the criticism outlined in the previous section in relation to focus on information rather than communication, the first public meeting in Morwell was not convened until February 14—five days after the fire broke out. This was the first opportunity that the community had to ask questions and express their concerns—i.e., the first opportunity for two-way, interactive communication and consultation.

4. Inappropriate Media and Messaging

In addition to a lack of information, Morwell and the surrounding community grappled with inappropriate forms of communication both in terms of channels and content. Research and critical analysis undertaken as part of review of public communication presented to the Board of Inquiry in a 60-page report found that the key government departments and authorities provided information mainly via their official Web sites (Macnamara, 2014). Fact sheets, updates, and notices had to be read online or downloaded in many cases. The government departments and agencies involved also used social media extensively. For example, CFA Victoria is a prolific user of Twitter, with a total of more than 37,700 tweets as at June 2014 when content analysis was conducted. The EPA

also tweeted extensively during the crisis in relation to smoke alerts and warnings (Macnamara, 2014, pp. 35–36). However, while social media may be an appropriate channel during a crisis in a major city, such as the 2013 Boston Marathon bombing as reported by Swan (2013), they are much less used in communities such as Morwell with its high proportion of elderly people and lower than average internet connectivity.

Furthermore, despite data showing Morwell as a largely low-SES community, much of the information provided by authorities was technical or semi-technical in nature, such as reporting "particulate monitoring" of PM10 and PM2.5 and presenting tables of data on chemicals such as Chloromethane, Carbon Disulphide, Butadiene, Ethylbenzene, and Dichlorodifluoromethane (see Figure 1). The Latrobe City Council did conduct a letterbox drop of simple information leaflets, which was welcomed by the community (Drummond, Hardeman, & Gall, 2014, p. 7), but this was not done until February 20—11 days after the fire started.

Further evidence that public communication by the mine company and government agencies involved was inadequate and even misleading came on May 26, 2015, when the Government of Victoria announced reopening of the Hazelwood Mine Fire Inquiry with terms of reference that included

Chemical	Unit	Morwell East		Morwell Bowling Club		Maryvale Crescent Early Learning Centre		Air Quality Guideline Value[1]
		26 Feb	27 Feb	26 Feb	27 Feb	26 Feb	27 Feb	24 hr ppb
Propene (Propylene)	ppb	4.7	5.7	42	28	24	16	232.4
Dichlorodifluoromethane(Freon12)	ppb	0.89	0.89	0.81	0.84	0.83	0.86	101000
Chloromethane (methyl chloride)	ppb		1.5	1.9	2.0	2.5	1.9	155
1,3-Butadiene	ppb			2.5	1.6	1.6	0.70	145
Acetone	ppb	1.9	2.2	8.0	7.0	5.8	6.2	497
Ethanol	ppb	2.9	94.9	7.2	8.4	5.3	5.4	10084
Carbon disulfide	ppb						0.81	106
2-Butanone (MEK)	ppb			1.1	0.93	0.75	0.82	339
Hexane	ppb			1.2	0.89	0.77		284
Benzene	ppb	1.7	2.1	14	9.7	9.2	6.0	9
Heptane	ppb			0.91	0.70	0.61		2684
Toluene	ppb	0.70	0.92	4.7	3.4	3.0	2.1	531
Ethylbenzene	ppb				0.57			230
Naphthalene	ppb			0.97	1.6			4.29

Figure 1. Sample information provided in fact sheets published by the Victorian Department of Health (2014).

examination of "health impacts on the Latrobe Valley community resulting from the 2014 Hazelwood coal mine fire" (Hazelwood Mine Fire Inquiry, 2015). The Premier of Victoria, Daniel Andrews, said in a statement that the reopening was to "get to the bottom of community health concerns" that remained a year after the inquiry, despite assurances given throughout the crisis (Andrews, 2015, para. 1). In the lead up to the announcement, Melbourne's *Age* newspaper reported that residents of the area were concerned that "deaths increased in the community because of the fire" (Gray, 2015, para. 1).

5. Silence and Evasion by the Mine Company

Somewhat inexplicably, the mine company, GDF Suez Australian Energy, decided that it should not make any statement in the early days and weeks of the crisis and not attend any of the public meetings held to brief the local community. This is regarded as inexplicable because the company retained a professional public relations consultant who could be expected to know that crisis communication theory and best practice manuals strongly recommend the organization at the center of a crisis "be quick, be consistent, and be open" (Coombs, 2006, p. 149). Coombs (2006) explicates: "the organization should tell stakeholders everything they know about the crisis as soon as the organization receives the information" (p. 150).

When questioned over this decision to 'lay low,' the company's senior management spokesperson said they believed that government authorities such as the CFA, the Department of Health, and the EPA were the most appropriate organizations to comment and engage with the public. While this appeared to be a genuine belief by the company's management, it was short-sighted, contrary to crisis communication theory, and it provoked a strongly negative reaction from the community, which interpreted the invisibility and silence of mine management as a lack of concern and failure to take responsibility.

When the mine company did become involved in public communication, it was a case of 'too little too late.' The company issued its first public statement on March 11—28 days after the fire started and two weeks after the Board of Inquiry was announced. No further statement or media

release was issued until May when three media statements were issued on May 2, 14 and 15, respectively.

Furthermore, the company subsequently embarked on what some observers considered to be a questionable scheme to distribute a AUD$100 gift voucher to each of 6,700 homes in the town of Morwell for residents to redeem through purchases at a local business. The scheme, launched under the theme 'Revive Morwell,' was hailed by the mine company as a major injection of funds (AUD$670,000 or US$585,000 in total) to help local businesses and the community. However, it was criticized by residents and witnesses appearing at the inquiry for several reasons including:

1. $100 per resident is a relatively small amount of money and did not compensate people to any significant extent for the inconvenience and stress caused by the crisis, not to mention damage caused to dwellings and water supplies by falling ash;

2. People living in surrounding areas outside the town who were also affected did not receive the vouchers, creating inequity and divisions in the community; and

3. Most significantly, the offer of a financial gift was seen as an attempt to 'pay off' and bribe the community to stop criticism.

6. Lack of Psychological, Social, and Cultural Sensitivity

As well as being late and lacking in many cases, what public communication there was by the mine company and government departments and authorities failed to recognize and address the psychological, social, and cultural dimensions of the crisis. Analysis found that "none of the media releases or other statement issued by the company conveyed any expression of regret, concern, empathy, or compassion for those affected" (Macnamara, 2014, p. 42). Another independent report by Drummond et al. (2014) also reported that "the community felt that communications lacked empathy and understanding" (p. 15).

Discussion and Conclusions

While there was much to admire in the stalwart and sometimes heroic efforts of the firefighters, volunteer organizations, and many individuals who rallied to provide support to concerned citizens, management of public communication during the Hazelwood coal mine fire failed to follow crisis communication and emergency communication theory and principles. It also failed to apply foundational theories of human communication and did not demonstrate Excellence Theory of Public Relations. This case study presents hard lessons for the management and communication professionals of the company and government departments and authorities concerned, as the Board of Inquiry's report confirmed serious failures as discussed in this analysis. Specifically:

1. Key government departments and agencies failed to prepare for what was a predictable crisis;

2. Failure to adequately research and consult with those affected resulted in the use of inappropriate media and channels of communication as well as inappropriate technical language in many instances that caused misunderstanding and confusion;

3. The company involved failed to show concern, care, or responsibility to the affected community. Accordingly, the reputation of the company was significantly damaged in the local community and more broadly through negative media coverage;

4. A preoccupation with operational, technical, and scientific matters and focus on the coal mine fire as a crisis for the mining company and the energy industry (a narrow framing) resulted in neglect of stakeholders and the local community and a failure to address 'the human crisis' that unfolded. With many of the Morwell population being employees of the mine, the company suffered a 'double whammy' of damage to employee relations as well as community relations.

The Fire Services Commissioner of Victoria acknowledged in his statement to the Hazelwood Mine Fire Inquiry that there were "things that could have been done better," including "messaging that better integrates fire, health and environmental information," "messaging must be distributed to

match the profile and technology use of a community," and "community connection" (Lapsley, 2014, p. 29).

The CEO of the EPA, John Merritt, also acknowledged in his witness statement to the Hazelwood Mine Fire Inquiry that:

> As the incident unfolded, it became clear that more information was required by the community. The challenge was that...the information, such as individual test results, started to introduce more complex scientific ideas, principles and concepts and as such required substantially more explanation and translation into easily understood terms. (Merritt, 2014 p. 8)

The report of the Hazelwood Mine Fire Inquiry (2014) released in August 2014 presented a number of damning findings, including that the mine company was "inadequately prepared to manage the fire" (p. 16). In relation to the Environment Protection Authority—a key government agency in the crisis—the inquiry reported that "the State Control Centre's initial request for the EPA's support and advice in responding to the Hazelwood mine fire came too late and the EPA was ill-equipped to respond rapidly" (Hazelwood Mine Fire Inquiry, 2014, p. 23).

The Board of Inquiry report also endorsed key findings of this analysis in relation to public communication, commenting that there were "significant shortcomings by government authorities, as well as GDF Suez, in communicating throughout the emergency." The report stated that "communication did not reach many people in a timely way and in some cases, not at all" (Hazelwood Mine Fire Inquiry, 2014, p. 28). For example, of the response of the State Department of Health, the inquiry concluded that "temporary relocation advice was provided too late. Further, the basis for limiting the advice to those in vulnerable groups...was poorly explained and was perceived by the community as arbitrary and divisive" (Hazelwood Mine Fire Inquiry, 2014, p. 25). The report added:

> Members of affected communities felt they were not listened to and were not given appropriate and timely information and advice that reflected the crisis at hand and addressed their needs...communication was largely one-way with information being transmitted, but not received or understood by the intended recipients...government departments and agencies did not engage to any significant extent in listening to, or partnering

with local residents and community groups. (Hazelwood Mine
Fire Inquiry, 2014, p. 28)

The inquiry also supported the literature on the evolving nature of crises
and emergencies, observing that there had been "mischaracterization of
the mine fire as simply a fire emergency, when in fact it evolved into a
chronic technological disaster. It then became a significant and lengthy
environmental and health crisis" (Hazelwood Mine Fire Inquiry, 2014, p.
28).

Looking Ahead

Beyond the coal mining industry, there are important lessons in this case
study for all companies and government departments and agencies. Most
particularly, the findings of this study underline the key principles of crisis
communication including:

- Preparation based on scenario development and 'worst case'
  forecasting;

- Having a strategic communication plan in place;

- Understanding stakeholders and communities affected so that they can
  be addressed through appropriate methods and media in appropriate
  language;

- Consulting with and listening to those affected to supplement desk
  research with direct communication and engagement;

- Demonstrating empathy and considering the human dimensions of a
  crisis—not only the operational, technical, scientific, and legal aspects.

In addition, this analysis indicates a need for educating and training
management in the fundamentals of communication, as distinct from
information distribution. This analysis also supports Kent's (2010) call for
crisis communication research, particularly within the field of public
relations, to take a broader approach that looks beyond the organization's
reputation, image, and recovery, and include more focus on stakeholder
and community welfare, recovery, and renewal.

Discussion Questions

1. If you were the communication adviser for the Hazelwood coal mine, what would your advice to the company's management have been in the hours and days following outbreak of the fire?

2. What preparation should the mine company and key government agencies such as the State Environment Protection Agency have done in relation to the Hazelwood coal mine?

3. If you worked for the Health Department, what would you have done in relation to:

    a. Understanding the community's concerns?

    b. Engaging local media in distributing useful information?

    c. Explaining complex scientific and technical information to residents?

    d. Coordinating communication with other government departments and agencies and the fire authority?

4. What theories and best practice principles outlined are most useful to you?

References

Adler, R., & Rodman, G. (2012). *Understanding human communication*. Oxford, UK and New York: NY: Oxford University Press.

Alberts, J., Nakayama, T., & Martin, J. (2007). *Human communication in society*. Upper Saddle River, NJ: Pearson-Prentice Hall.

Allen, M., & Caillouet, R. (1994). Legitimation endeavors: Impression management strategies used by an organization in crisis. *Communication Monographs, 61*, 44–62.

Andrews, D. (2015, May 26). Hazelwood mine fire inquiry reopened. *Premier of Victoria*. Retrieved December 31, 2015, from http://www.premier.vic.gov.au/hazelwood-mine-fire-inquiry-reopened

Baird, E. (2010, January). *The 'phases' of emergency management* [Background paper]. Intermodal Freight Transportation Institute, University of Memphis, TN. Retrieved December 31, 2015, from http://www.vanderbilt.edu/vector/research/emmgtphases.pdf

Benoit, W. (1995). *Accounts, excuses, and apologies: A theory of image restoration strategies.* New York: State University of New York Press.

Carey, J. (2009). *Communication as culture.* New York: Routledge. (Original work published 1989)

Carey, M. (2014, February 27). Coal mine fires remind us of coal's threat to our environment, climate and health. *Doctors for the Environment Australia*. Retrieved December 31, 2015, from http://dea.org.au/news/article/coal-mine-fires-remind-us-of-coals-threat-to-our-environment-climate-and-he

Castleden, W., Shearman, D., Crisp, G., & Finch, P. (2011). The mining and burning of coal: effects on health and the environment. *Australasian Medical Journal, 195*(6), 333–335. Retrieved December 31, 2015, from http://www.fof.org.au/uploads/media/MJA_Coal.pdf

Coal mine fires commonplace, hears inquiry into Hazelwood blaze. (2014, May 26). *The Australian*. Retrieved December 31, 2015, from http://www.theaustralian.com.au/news/nation/coal-mine-fires-commonplace-hears-inquiry-into-hazelwood-blaze/story-e6frg6nf-1226931612282

Coombs, T. (1999). *Ongoing crisis communication: Planning, managing, and responding.* Thousand Oaks, CA: Sage.

Coombs, T. (2004). Impact of past crises on current crisis communications: Insights from: Situational crisis communication theory. *Journal of Business Communication*, *41*, 265–289.

Coombs, T. (2006). Crisis management: A communicative approach. In C. Botan & V. Hazelton (Eds.), *Public relations theory II* (pp. 149–174). Mahwah, NJ: Lawrence Erlbaum.

Coombs, T. (2007a). Crisis management and communications. *Institute for Public Relations*. Retrieved December 31, 2015, from http://www.instituteforpr.org/crisis-management-and-communications

Coombs, T. (2007b). Protecting organization reputations during a crisis: The development and application of situational crisis communication theory. *Corporate Reputation Review, 10*(3), 163–176.

Coombs, T. (2014). *Applied crisis communication and crisis management: Cases and exercises.* Thousand Oaks, CA: Sage.

Coombs, T., & Holladay, S. (2002). Helping crisis managers protect reputational assets: Initial tests of the Situational Crisis Communication Theory. *Management Communication Quarterly, 16*(2), 165–186.

Coombs, T., & Schmidt, L. (2000). An empirical analysis of image restoration: Texaco's racism crisis. *Journal of Public Relations Research, 12*(2), 163–178.

Council of Australian Governments. (2011). *National strategy for disaster resilience*. Canberra, Australia: Commonwealth Government. Retrieved December 31, 2015, from https://www.coag.gov.au/node/81

Craig, R., & Muller, H. (Eds.). (2007). *Theorizing communication: Readings across traditions.* Thousand Oaks, CA: Sage.

Crilley, J. (2003). *Free publicity: A TV reporter shares the secrets of getting covered on the news.* Dallas, TX: Great Impressions.

Drummond, L., Hardeman, A., & Gall, J. (2014, May 23). *Evaluation of the communications to affected communities during the Hazelwood coal mine fire* [Report]. Morwell, Australia: Hazelwood Coal Mine Fire Inquiry. Retrieved December 31, 2015, from http://hazelwoodinquiry.vic.gov.au/report-of-lachlan-drummond

Emergency Management Victoria. (2014). *Emergency Management Manual Victoria*, Part 4. Retrieved December 31, 2015, from http://www.emv.vic.gov.au/policies/emmv/

Entman, R. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, *43*(4), 51–58.

EPA Victoria [Environment Protection Authority of Victoria]. (2014, May 21). Q&A on the Latrobe valley mine fire. *Hazelwood recovery effort*. Retrieved December 31, 2015, from http://www.epa.vic.gov.au/latrobe-valley-mine-fire/latrobe-valley-mine-fire-q-and-a

Farmer, B., & Tvedt, L. (2005). Top management communication during crises: Guidelines and a 'perfect example' of a crisis leader. *Public Relations Quarterly*, *50*(2), 27–31.

Fearn-Banks, K. (2011). *Crisis communications: A casebook approach* (4th ed.). New York: Routledge.

FEMA [Federal Emergency Management Agency]. (1993). *The emergency program manager, IS-1*. Washington, DC: Government Printing Office.

Fink, S. (2013). *Crisis communication: The definitive guide to managing the message*. New York: McGraw-Hill.

Frey, L., Botan, C., & Kreps, G. (2000). *Investigating communication: An introduction to research methods* (2nd ed.). Boston, MA: Allyn & Bacon.

GDF Suez Australian Energy. (2014, June 18). *Written submission of GDF Suez Australian Energy*. Morwell, Australia: Hazelwood Mine Fire Inquiry. Retrieved December 31, 2015, from http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2014/06/GDF-Suez.pdf

Glaser, B. (1978). *Theoretical sensitivity*. Mill Valley, CA: Sociology Press.

Gray, D. (2015, April 24). Hazelwood coalmine fire inquiry to reopen. *The Age*. Retrieved December 31, 2015, from http://www.theage.com.au/victoria/hazelwood-coalmine-fire-inquiry-to-reopen-20150424-1mseyc.html

Grunig, J., Grunig, L., & Dozier, D. (2006). The excellence theory. In C. Botan & V. Hazelton (Eds.), *Public relations theory II* (pp. 21–62). Mahwah, NJ: Lawrence Erlbaum.

Grunig, L., Grunig J., & Dozier D. (2002). *Excellent public relations and effective organizations: A study of communication management in three countries*. Mahwah, NJ: Lawrence Erlbaum.

Hagan, L. (2007). For reputation's sake: Managing crisis communication. In E. Toth (Ed.), *The future of excellence in public relations and communication management: Challenges for the next generation* (pp. 413–440). Mahwah, NJ: Lawrence Erlbaum.

Hallahan, K. (1999). Seven models of framing: Implication for public relations. *Journal of Public Relations Research*, *11*(3), 205–242.

Hayes, D., Hendrix, J., & Kumar, P. (2013). *Public relations cases* (9th ed.). Boston, MA: Wadsworth.

Hazelwood Mine Fire Inquiry. (2014). *Hazelwood mine fire inquiry report*. Melbourne, Australia: Government of Victoria. Retrieved December 31, 2015, from http://report.hazelwoodinquiry.vic.gov.au/print-friendly-version-pdf

Hazelwood Mine Fire Inquiry. (2015, May). *Reopening of Hazelwood Mine Fire Inquiry*. Retrieved December 31, 2015, from http://hazelwoodinquiry.vic.gov.au

Hearit, K. (1995). Mistakes were made: Organizations, apologia and crises of social legitimacy. *Communication Studies*, *46*, 1–17.

Hearit, K. (2001). Corporate apologia: When an organization speaks in defense of itself. In R. Heath (Ed.), *Handbook of public relations* (pp. 489–500). Thousand Oaks, CA: Sage.

Holmes, D. (2005). *Communication theory: Media, technology and society*. Thousand Oaks, CA: Sage.

IFRC [International Federation of Red Cross and Red Crescent Societies]. (2013). *World disasters report: Focus on technology and the future of humanitarian action*. Geneva, Switzerland: IFRC. Retrieved December 31, 2015, from http://www.ifrc.org/PageFiles/134658/WDR%202013%20complete.pdf

Institute for Crisis Management. (2008). Crisis definitions. *Institute for Crisis Management*. Retrieved December 31, 2015, from http://www.crisisbusinessmanagement.com/crisisdef_main.htm

Internet World Statistics. (2013). World internet users and population statistics. *Internet World Stats*. Retrieved December 31, 2015, from http://www.internetworldstats.com/stats6.htm

Kent, M. (2010). What is a public relations crisis? Refocusing crisis research. In T. Coombs & S. Holladay (Eds.), *The handbook of crisis communication* (pp. 705–712). Oxford, UK: Wiley-Blackwell.

Lapsley, C. (2014, May 20). *Statement of Craig William Lapsley to the Hazelwood Coal Mine Fire Inquiry, Morwell, Victoria*. Retrieved December 31, 2015, from http://hazelwoodinquiry.vic.gov.au/public-hearings

Lerbringer, O. (1997). *The crisis manager: Facing risk and responsibility*. Mahwah, NJ: Lawrence Erlbaum.

Littlejohn, S., & Foss, K. (2008). *Theories of human communication* (9th ed.). Belmont, CA: Thomson-Wadsworth.

Macnamara J. (2012). *Public relations theories, practices, critiques*. Sydney: Pearson.

Macnamara, J. (2014, June). *A review of public communication by the mine owner (GDF SUEZ Australian Energy) and government departments and agencies during the 2014 Hazelwood coal mine fire* [Report]. Morwell, Australia: Hazelwood Coal Mine Fire Board of Inquiry. Retrieved December 31, 2015, from http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2014/08/Report-of-Prof-MacNamara.pdf

McDonald, L., & Hartel, C. (2001). Consumer-preferred company responses following a crisis: The importance of taking responsibility. *Asia Pacific Public Relations Journal, 3*(1), 1–20.

Merritt, J. (2014, May 14). *Statement of John Damian Merritt to the Hazelwood Coal Mine Fire Inquiry, Morwell, Victoria*. Retrieved December 31, 2015, from http://hazelwoodinquiry.vic.gov.au/statement-of-john-merritt

Millett, B. (1998). Understanding organizations: The dominance of systems theory. *International Journal of Organizational Behavior, 1*(1), 1-12.

Mitroff, I., & Anagnos, G. (2001). *Managing crises before they happen: What every executive needs to know about crisis management*. New York: American Management Association.

National Governor's Association. (1979). *Emergency preparedness project fnal report*. Washington, DC: Government Printing Office.

Neal, D. (1997). Reconsidering the phases of disaster. *International Journal of Mass Emergencies and Disasters, 15*(2), 239–264.

Neuendorf, K. (2002). *The content analysis guidebook*. Thousand Oaks, CA: Sage.

Neuman, W. (1997). *Social research methods: Qualitative and quantitative approaches*. Needham Heights, MA: Allyn & Bacon.

Nicholls, S., & Glenny, L. (2005). Communicating for recovery: A case study in communication between the Australian Capital Territory Government and the ACT community after the ACT bushfires, January 2003. In C. Galloway & K. Kwansah-Aidoo (Eds.), *Public relations issues and crisis management* (pp. 41–58). Southbank, Australia: Thomson Social Science Press.

Nelson, L. (2014, March 3). Overwhelmed by smoke. *Latrobe Valley Express*. Retrieved December 31, 2015, from http://www.latrobevalleyexpress.com.au/story/2123570/overwhelmed-by-smoke

O'Carroll, E. (2010, February 5). Centralia, PA: How an underground coal fire erased a town. *The Christian Science Monitor*. Retrieved December 31, 2015, from http://www.csmonitor.com/Environment/Bright-Green/2010/0205/Centralia-Pa.-How-an-underground-coal-fire-erased-a-town

Punch, K. (1998). *Introduction to social research: Quantitative and qualitative approaches*. London: Sage.

Robertson, J. (2012). Tell it all? Challenging crisis communications' rules. *Public Relations Journal*, *6*(1), 1–19. Retrieved December 31, 2015, from http://www.prsa.org/Intelligence/PRJournal/Documents/2012Robertson.pdf

Rogers, E. (1995). *Diffusion of innovations* (4th ed.). New York: Free Press. (Original work published 1962)

Ruggiero, A., & Vos, M. (2014), Social media monitoring for crisis communication: Process, methods and trends in the scientific literature. *Online Journal of Communication and Media Technologies, 4*(1), 103–130.

Ryan, H. (1982). Kategoria and apologia: On their rhetorical criticism as a speech set. *Quarterly Journal of Speech, 68*, 254 –261.

Seeger, M. (2006). Best practices in crisis communication: An expert panel process. *Journal of Applied Communication Research, 34*(3), 232–244.

Shoemaker, P., & Reese, S. (1996). *Mediating the message: Theories of influences on mass media content*. White Plains, NY: Longman.

Sheppard, B., Janoske, M., & Liu, B. (2012, May). *Understanding risk communication theory: A guide for emergency managers and communicators*. Report to the Human Factors/Behavioural Sciences Division, Science and Technology Directorate, Department of Homeland Security. College Park, MA.

Sturges, D. (1994). Communicating through crisis: A strategy for organizational survival. *Management Communication Quarterly, 7*(3), 297–316.

Swan, P. (2013, June). How the Boston Police used Twitter during a time of terror. *Public Relations Tactics*. Retrieved December 31, 2015, from http://www.prsa.org/Intelligence/Tactics/Articles/view/10197/1078/How_the_Boston_Police_used_Twitter_during_a_time_o

Ulmer, R., Seeger, M., & Sellnow, T. (2007). Post-crisis communication and renewal: Expanding the parameters of post-crisis discourse. *Public Relations Review, 33*(2), 130–134.

Ulmer, R., Sellnow, T., & Seeger, M. (2006). *Effective crisis communication: Moving from crisis to opportunity*. Thousand Oaks, CA: Sage.

Victorian Department of Health. (2014, March 13). *Air quality testing in Morwell: Volatile organic compounds. Hazelwood coal mine fire fact sheet*. Retrieved December 31, 2015, from http://docs2.health.vic.gov.au/docs/doc/D41405537B09AF25CA257CC30015842C/$FILE/Air-quality%20testing-%20Nov2-22%20April2014.pdf

Victorian Government Solicitor's Office. (2014, June 23). Hazelwood mine fire inquiry: Additional observations by the State. *Hazelwood Mine Fire Inquiry*. Retrieved December 31, 2015, from http://hazelwoodinquiry.vic.gov.au/wp-content/uploads/2014/06/Victorian-Government-3.pdf

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