

Health Risk Communication:
Reporting of Avian Influenza
in New Zealand Newspapers
2002-2008

by

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ABSTRACT

Those who are interested in the public mood, including politicians and economists, comment that the public are becoming ever more sceptical about many things, but health risk information should not be one of them. If health risk information is perceived by the public as ‘just another scary story’, or ‘more of the same we heard last month’, then the ability of risk messages to convey urgency and recommend action could be greatly diminished; the ‘cry wolf’ scenario becomes more real every time a threat appears in the media but fails to materialise.

This thesis explores how avian influenza, (H5N1), as a health risk category, has been reported and represented in the New Zealand media. By analysing avian influenza-related items in four New Zealand newspapers over a six-year period, 2002-2008, and by comparing results with those found in a U.S. study by Dudo, Dahlstrom & Brossard (2007), this thesis explores the dominant themes and discourses the media drew upon when reporting the health threat of avian influenza. In addition, data from four focus groups sessions was analysed for the purpose of exploring public perceptions of health risk messages and the influence of the media on those perceptions.

This thesis was situated within a constructionist epistemology, and employed a mixed-methods methodology with content, thematic and textual analyses. Risk communication theories and models, media conventions of agenda-setting and framing, and sociological concepts informed how the topic of health risk communication was operationalised.

The analysis of the focus group data explored how the participants discussed the threat of H5N1; how they constructed concepts of personal and community risk, what role, if any, they attributed to the media in their construction and how they positioned themselves in regards to illness and contagion. The focus group analysis revealed that three dominant themes - risk, media and ‘othering’ – represented how the focus group participants talked about the risk of avian influenza. These and several sub-dominant themes shared similarities to those found in the newspaper analysis. Whilst initial discussions seemed to indicate a nonchalant attitude towards the risk of avian influenza, the many topics and themes that characterised the way the participants discussed the risk between them, showed that they had thought about the personal consequences of a possible health risk, and had formed strong opinions about many facets of that risk.

Results from the newspaper analysis largely mirrored those of the above U.S. study, and showed that the New Zealand media favoured episodic over thematic framing; sensationalising the reporting of avian influenza, whilst providing little in the way of scientific and contextual information. Moreover, the analysis showed that, when reporting health risks, media templates are well established. The analysis of the focus group data revealed that the participants wanted media health risk messages to be clear, concrete and factual. However, this desire for messages that communicate certainty about risk, which is, by definition inherently *uncertain*, raises questions about the very nature of risk communication.

Findings of this thesis suggest that future risk communication research should focus, not on how the media are reporting health risks, but how the public conceptualise risk, construct it in times of crisis and evaluate their ability to control it.

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1. INTRODUCTION

Media communication about health scares is a responsibility with implications for public understanding of personal risk. Observers of media reporting have found that in reporting illness and disease there is a propensity to construct the issues by favouring some language over others. The media have used scare language and tactics that often afford the risk a 'threat-status' out of all proportion to the estimated actual threat. By repeating stories, suppositions can become 'facts', and members of the public can react to these 'facts' in a disproportionate way; for example, changing their behaviour, becoming anxious and worrying about a distant threat that, over time, does not eventuate. When this happens, the public's perception of the threat can change, creating a resistance to fearful news. As a result, the next time the media reports a health scare, there is more debate about the 'truthfulness' of this threat. Early warning of possible disasters can have positive outcomes such as timely preparedness in the form of purchasing flu masks or anti-viral medications; however, as Nerlich and Halliday point out: 'if warnings are issued too early, too frequently or in a context of heightened scientific and social uncertainty, they may also have the opposite effect, of demoralising individuals and society, neutralising urgency, producing cynicism and indifference and stifling sustained investment' (Brown cited in Nerlich and Halliday 2007:48).

This thesis explores and analyses the communication of health risk messages. It examines how the New Zealand media reported the global health threat of avian influenza during the period January 2002-January 2008, and compares research findings with the results from a U.S. research paper published in 2007, which also investigated media reporting of the same health threat (Dudo, Dahlstrom & Brossard, 2007). Using the avian influenza as a case study of health risk reporting, this thesis explores episodic and thematic framing of news stories (Iyengar 1991), variables of self-efficacy, risk-measurement, the use of sensationalism and emotive words and the incidence of non-contextual quantitative news stories. It also examines attitudes and perceptions about avian influenza held by members of the New Zealand 'public' and the relationship between these perceptions and media reporting.

Central questions that direct the research and methodologies for this thesis revolve around the extent of media's influence on public perceptions, in relation to the reporting of health risk events. Existing literature makes a number of claims about how to devise and identify effective risk communication, but much of it does so from one perspective only; for example privileging 'expert' voices that often consist of scientists, government health officials or medical authorities. Other literatures introduce the notion of 'the public' as stakeholders in the risk communication process, but do not underpin these theories with qualitative empirical research into what shapes risk perceptions. Assumptions about what constitutes 'good or effective risk communication' are challenged in this thesis through

examining the lay public's perceptions of, and opinions about the risk of avian influenza as reported by the New Zealand media. Did the media represent this health issue to the New Zealand public in an identifiable way, and if so, how much of a role (if any) did this representation play in influencing the public's perception of personal and community risk?

Risk communication is the link between risk analysis, risk management, and the public body. Important elements are the trust and credibility of the message source, the quality and clarity of the message design, the effectiveness and efficiency of the delivery channel, and the involvement and acceptance of the target audience; the lack of any of these components 'undermines the best efforts' (Covello, McCallum and Pavlova 1989:9). One strand of research reported in the literature suggests that in order for any health risk information to be received by the target audience and acted upon in a rational and measured way, it needs to be regarded as balanced and credible, informing *about* the risk and pointing to *how* any possible risks could be mitigated [italics added] (Covello et al. 1989). Trust can be further strained when trusted sources of health information - health organisations and government health bodies - are perceived to have a vested interest in which action is taken; drug companies promoting anti-viral medications to prevent the onset of flu symptoms is one example.

Since 1997, the avian influenza virus (H5N1) has been closely monitored by the World Health Organisation (WHO), when H5N1 was first reported to have infected humans in Hong Kong. In 2003, four Asian countries reported H5N1 outbreaks with 100 human cases, and by December 2005, five further Asian countries as well as Turkey and Romania reported 184 infections that resulted in 103 deaths. To June 2008, according to the World Health Organisation (WHO), there have been 385 cases and 243 deaths from avian influenza worldwide.¹ This represents a 63 percent case-fatality rate,² and when compared to the 2003 SARS outbreak which had a rate of 15 percent, or the flu or common cold which kills less than 5 percent of those who catch it every year, H5N1 has the potential to be the most lethal flu virus yet. However, although there is worldwide scientific consensus that H5N1 has the potential to mutate from its present form to one that easily transmits from human-to-human, the virus, in its current form, does not easily cross over to humans and as such, there is no guarantee that the present threat will result in the predicted lethal pandemic.

Despite the fact that avian influenza has been in the world public arena since 1997, the New Zealand press did not begin to report it widely until 2005. Media reports about avian influenza and its potential for disaster began with just one story in 2002, increasing to the highest incidence of reporting in 2005 with 189 articles.³ This pattern of reporting is similar (but not identical) to that found in a paper published in the journal *Science Communication* in 2007 by Anthony Dudo, Michael Dahlstrom and Dominique Brossard,

¹ Cumulative Number of Confirmed Human Cases of Avian Influenza A/(H5N1) as reported to World Health Organisation (WHO), http://www.who.int/csr/disease/avian_influenza/country/en/

² **Case-fatality rate** is the percentage of people who died after being infected.

³ From analysis of news stories between 2002-2008 reporting avian influenza. Sourced from: *The Auckland Herald, The Wellington Dominion, The Christchurch Press and The Otago Daily Times.*

which investigated the U.S. media reporting of avian influenza during the period January 2000 - January 2006. Dudo et al. analysed 360 articles printed in four major US newspapers, and using the concept of 'quality', assessed the coverage related to risks posed by the avian influenza. Measures of self-efficacy, risk magnitude, risk comparisons, sensationalism and episodic and thematic framing were examined, with findings revealing a predominance of the use of episodic framing with minimal self-efficacy information. In their conclusion, the authors suggest further research be carried out to build on their results and to examine 'how the identified content might be participating in the shaping of public perceptions of the risk related to avian flu' (Dudo et al. 2007:451). Public perception of risk depends on several factors: the level of consensus about the risk, the amount of anxiety created by the spectre of the risk, the level of personal control over the risk and the costs that may be incurred when preparing for the risk. Therefore, as different types of risk may create different stressors, more than one communication technique may be needed (Dudo et al. 2007).

This thesis endeavours to understand people's concept of risk associated with avian influenza from their point of view, with an assumption that each is constantly interpreting his or her environment. This approach is particularly useful because constructionist theory would suggest that the avian influenza pandemic is not just being understood as a medical and social fact, but it also has particular meanings attributed to it. For example, blame may be attached to those who catch the disease or to those countries that seemingly fail to contain the spread of contagion, and through political or economical motivations, unwittingly spread the disease. Therefore, the media representation of avian influenza in New Zealand newspapers is an important component of its social construction.

With regard to research for this thesis, knowledge gained is regarded as situated and indeterminate. The categories that people employ in helping them to understand the natural and social world are considered to be social products, that is, their meaning is constructed in and through interaction, but rather than assuming that knowledge in the social domain is determinate, this thesis endeavours to look at trends within wider contingent processes. Discourses are a way of articulating knowledge, but are more than just ways of thinking and producing meaning. They constitute the 'nature of the body, unconscious and conscious mind and emotional life of the subjects they seek to govern' (Weedon 1987:108) and can both constrain the production of knowledge and enable new knowledges and differences. As Michel Foucault (1973) argued, discourse constructs the topic; it defines and produces the objects of our knowledge and governs the way that a topic can be meaningfully talked or reasoned about. In terms of medical discourses, of which health and the body is but one, Foucault also argued that since the 18th century the body has been the focal point of disciplinary power, where bodies have been labelled as deviant or normal, hygienic or unhygienic, as controlled or 'in need of control' (Lupton, 2006:24). Through an analysis of risk-related discourses in relation to avian influenza, this thesis seeks to understand how the New Zealand media, through the way that they

represented and reported the health threat of avian influenza, have contributed to discourses about health and disease, and have, in turn, influenced how the threat from avian influenza has been constructed.

How 'the public' understands scientific information presented by the media represents the focus of a large body of human science literature and research and there are different ways to approach this understanding: from psychologically cognitive approaches to sociological theories of interactionism, constructionism and models of mass communication and effects. Because of the focus on media representations rather than audience reception, this thesis will not use cognitive interpretations of behaviour such as causal attributions, third-person effect and accessibility bias to conceptualize the public understanding of risk (Jones and Nisbett 1972; Nisbett and Wilson 1977). Rather, this thesis is interested in how the media report and represents risk, the way it conceptualises individuals within these representations, and the way the public interpret and respond to media risk messages.

Nelkin (1987) positions the media as an integral part of this understanding and states:

The press should provide the information and the understanding that is necessary if people are to think critically about decisions affecting their lives. For most people the reality of science is what they read in the press [and] they understand science less through direct experience or post education than through the filter of journalistic language and imagery (p.2).

Critical to the public's understanding of health crises and to their uptake of risk messages is that the messages are easily understood, they are relevant to the audience, are deemed to be credible and that they grab their attention. Moreover, it is in the use of concrete images, examples and anecdotes about specific actions that people can take, that risk messages and information become relevant (Covello et al. 1989:11). Further discussion in chapter 3 will clarify the notion of 'the public', how it is mobilised in these contexts and why it is important to this thesis.

Risk and fear discourses greatly influence the everyday worldview people have about what constitutes danger and hazards. Commonplace events are underestimated in terms of risk but exceptional and abnormal incidents can rouse feelings of panic and anxiety. Mary Wilson, a public-health researcher at Harvard University said:

We spend enormous amounts of money on problems that pose a trivial risk, [for example] Europe forked out \$2.4 billion to defend itself against mad-cow disease which infected 10 humans. These fears drive public policy, and picking the 'wrong' ones can distract us from bigger killers (cited in Altheide 2002:87).

One way to operationalise the meaning-making processes in the news media is through the concept of framing which sociological theory posits is influenced by cultural narratives, symbols and stereotypes (London 1993). Information and news needs to be embedded within a meaningful context in order to be clearly understood and a media

frame organises relevant ideas, whilst also suggesting what is salient and topical. Framing, regarded as a 'second-level' agenda-setting media construct, is the term that describes how news stories are constructed in the media; it can draw attention to particular issues, and can refer to what is included as well as what is excluded. It also encompasses a broad range of cognitive processes such as moral evaluations, causal reasoning, appeals to principles and recommendations for treatment of problems (Weaver 2007). Scholars have described framing in several ways ranging from 'a subtle change in the description of a situation' to a 'stated or implied argument' (Callaghan and Schnell 2001; Scheufele 2000) and have shown that a change to the wording or presentation of an issue can powerfully influence decision outcomes for those who engage in an issue through the media. A further consequence of a media framing effect can be that blame (for an issue or risk event) is accorded to an organisation or individuals, a phenomenon that Shanto Iyengar (1991) has coined as 'attributions of responsibility'.

Those interested in the 'public mood', including politicians and economists, comment that the public are becoming ever more sceptical about many things but this thesis argues that health risk information should not be one of them. The notion that health risk information is up for debate has ramifications for bio-security and health and the 'cry wolf' scenario becomes more real every time a threat appears in the media but fails to materialise. A key assumption of this thesis is that if health risk information is perceived by the public as 'just another scary story', or 'more of the same we heard last month', then the ability of risk-messages to convey urgency and recommend action could be greatly diminished, or even negated.

To date, there has been not been any academic research about how health risk messages are presented, reported, and then received and processed by the New Zealand public. Just as importantly, as a result of the threat of avian influenza not eventuating in the timeframe implied by media reports, there is a need to question whether the public's reaction to potential risk from the avian influenza virus has resulted in 'warning fatigue'.⁴ This thesis used the U.S. paper as a basis for comparison with the New Zealand media reporting of the avian influenza, to build upon the U.S. results and to add to knowledge of media reporting of health risks in New Zealand. In addition to a comparative study, this thesis also analysed public perceptions, understanding and opinions about the avian influenza. Qualitative data were collected during the recording of semi-structured interviews, within both a focus group setting and one-on-one discussions. These research methods enabled data to be used for the purpose of exploring general perceptions, feelings and opinions relating to personal risk, health reporting and influence of the media. Of interest is how the group operationalised the concept of illness, risk and contagion as they discussed the issue between them.

⁴ People notice when warnings don't come true, and if warnings don't come true repeatedly, people sometimes stop taking the warnings seriously. It is referred to in the research literature as 'warning fatigue' Sandman (2008a).

THESIS OVERVIEW

Chapter 2 outlines the history of contagious diseases and epidemics, with particular emphasis on those that have originated from animals. It situates the health risk of avian influenza within the discourse of plagues and pandemics, and explains, in historical terms, the history and influence of the disease that is influenza. The last section of this chapter describes the epidemiology of avian influenza, and explains how the types and strains are determined.

Chapter 3 provides a substantive review of the literature, which encompasses risk communication and perception, media effects, the public understanding of science and public health. Concepts, theories and models that inform this thesis are briefly outlined and include the Social Amplification of Risk Framework, Sandman's (1993) 'Hazard vs Outrage' theory of risk communication, media effects models and concepts of governmentality, deviance and 'othering'.

Methodology and methods are detailed in **Chapter 4** and include the rationale for the thesis' analytical approach and why the particular analyses and methodologies were chosen. It outlines in depth the analytic approaches for both the newspaper and focus group analysis. Included in the description of the newspaper methodology are the preliminary pilot study, article coding schemas and inter-rater reliability results. The focus group methods explain both the preparation and composition, and how the data was conceptualised and analysed.

Chapters 5 and 6 are analytic chapters. The newspaper analysis presented in **Chapter 5** comprises two sections: content analysis of the newspaper articles and a comparison with the US case study, and a thematic analysis of dominant themes used by the media to report avian influenza. The focus group analysis **Chapter 6** engages a discourse and thematic approach to understand the themes and sub-themes which frame how the participants talked about avian influenza. **Chapter 7** discusses the intersections between the newspaper and focus group analysis, and interprets these in terms of the literature, discussing the implications for the similarities, differences, juxtapositions and contradictions.

2. INFLUENZA AND H5N1 (Avian Influenza)

INTRODUCTION

The way that people react to the threat of disease or illness largely depends on their personal experience or knowledge about it. Therefore, in the absence of a first-hand exposure to sickness of any kind, knowledges acquired through folklore, hearsay or reading about an issue are called upon when information is needed to be evaluated. This is why understanding about what is already known (an issue or event) is important when seeking to understand why people have reacted in a certain way to that issue or event.

Information about the H5N1 influenza virus has been in the 'public arena' in New Zealand since 1997, and is considered by health experts such as virologists and bio-security authorities as a grave and probable risk to both humans and animals. Presented to the New Zealand public by public health organisations and governmental agencies as a potential pandemic, risk mitigation measures for the avian influenza have included various recommendations from the purchase of anti-viral medication (Tamiflu)⁵ to individual household plans for preparation and containment (see Appendix IX & X).

The following exposition of historical diseases and epidemics situates the health risk of avian influenza within the discourse of plagues and pandemics, and specifically, explains the distinction between diseases that are infectious but are predictable and treatable (however dire they may be), and diseases and viruses that result from adaptations or mutations. Additionally, frequently used medical terminologies and recent research are explained and expanded upon. In order to contextualise the potential threat of avian influenza, detailed accounts of past epidemics will be given, with particular detail of how the diseases were transmitted.

Plagues, Pandemics and Epidemics

The word 'plague' comes from the Latin *plaga* meaning a strike or blow that wounds, and had strong religious overtones. The early Church 'profited from infections' which encouraged its followers to ascribe plague and death as punishments coming from God as a result of their sin, and to turn to the Church to save them (McNeill 1976). Although the Church could not stop people dying, it claimed they could guarantee redemption in the after-life. More recently, the word plague, whilst retaining its pseudo-religious meaning, refers to any contagious or epidemic disease that causes a high mortality. The usage of the

⁵ Tamiflu is the generic name for 'Oseltamivir' which is an antiviral drug that is used in the treatment and prophylaxis of both Influenza virus A and Influenza virus B. It is an orally active neuraminidase inhibitor that blocks the influenza virus from spreading between cells in the body and is commercially developed by US-based Gilead Science and marketed by Hoffmann-La Roche (Roche).

word pandemic is relatively recent⁶ and refers to a calamitous outbreak of disease that covers a wide geographical area.

There is a consensus amongst medical historians that human progress spreads disease; whenever changes are made to improve lifestyle and environment with the resultant social and technological advances, plagues and pestilence will follow. This is not to imply that humans are responsible for disease as 'it is a biological process as old as life itself' (Kiple 1999:6), but rather to emphasize that as humans gather together for any reason, to fight wars, travel to new lands, settle in towns and cities, or stay anywhere long enough to cultivate crops, new opportunities are created for previously unheard of diseases to evolve, adapt and emerge.

Of particular relevance to research for this thesis are those plagues and pandemics that have derived from animal hosts. Species known to host and to easily exchange pathogens⁷ are birds and pigs, but many diseases have been attributed to other animals. Evgeny Pavlosky (1884-1965) a Russian parasitologist, has estimated that humans share about 300 diseases with domesticated species, wild animals and birds, providing a further 100 diseases (cited in Karlen 1995:35). Below is a description of the animal origin of some well-known (and lesser known) zoonoses:⁸

<u>ANIMAL</u>	<u>DISEASE</u>
Rats (fleas)	Typhus, Bubonic plague, Lassa fever
Birds	Influenza, Salmonellosis
Horses	The common cold, Glanders ⁹
Pigs	Influenza
Dogs	Measles, Rabies
Mosquitoes	Malaria, Yellow Fever, Dengue Fever
Cows	Tuberculosis (through unpasteurised milk), scrofula, Creutzfeldt Jakob Disease (vCJD)
Cats	Toxoplasmosis
Bats	SARS
Monkeys	Haemorrhagic fever, Herpesvirus simiae, AIDS ¹⁰

The most devastating pandemics have originated from microbes¹¹ and pathogens that have been transmitted to humans from animals, as it is in the passing of these microbes back and

⁶ The noun was first recorded in 1853 and is derived from the Greek '*pandemos*' meaning 'pertaining to all people'

⁷ **Pathogen:** any disease-producing agent, esp. a virus, bacterium, or other microorganism

⁸ **Zoonosis:** any disease of animals communicable to humans

⁹ The human infection 'glanders' occurs rarely and mostly amongst those in direct and prolonged contact with infected, domestic animals.

¹⁰ Diseases from Wildlife, Centres for Disease Control and Prevention, <http://www.cdc.gov/healthypets/animals/wildlife.htm>

¹¹ **Microbe:** a microorganism, esp. a pathogenic bacterium

forwards between different animal species and humans that the most deadly pathogens are born.

Diseases that emerge from conditions resulting from disasters and poverty are, pathologically speaking, consistent, predictable and recognisable; cholera and typhoid are good examples. Both these diseases depend on stagnant water and poor sanitation to proliferate and are both exclusively human diseases (in that they are not derived from animal hosts). When water supplies are infected through faecal contamination, the typhoid bacillus is contracted through unwashed hands, food and insects such as flies. Not everybody who contracts typhoid becomes sick, as up to three percent become carriers. 'Typhoid Mary' is one famous historical example; an Irish immigrant working as a cook in New York at the turn of the 20th century, Mary Mallon spread typhoid fever to many households in which she worked. She vehemently denied that she was the source, as she was never sick herself and was wholly uncooperative with medical authorities.

Cholera is especially virulent and death comes within hours of the onset of the illness, with healthy adults given only a 50 percent chance of survival. Cholera was first reported in British India, and during the 19th century, more than 38 million people died from 'Asiatic' cholera (Kiple 1999:142). Up until the mid 20th century, there were seven cholera pandemics which were spread via land and shipping routes. Survivors developed immunity, and since the 1960s, when cholera has appeared it has been in a much milder form.

Many diseases arose from nutritional deficiencies which devastated industrialised populations, in fact it was often the very progress industrialisation brought that was the cause. Rickets,¹² pellagra¹³ and beriberi¹⁴ ravaged thousands, mostly children, during the 19th and 20th centuries, but education and better living conditions have now all but eradicated these diseases. Similarly, scurvy, a medical mystery for a long time, is now known to be a deficiency of Vitamin C, and although it is associated with malnutrition, cases of scurvy today are rare.

Seemingly contagious and often arriving in poor rural populations after a particularly cold winter, was a disease first named 'St Anthony's Fire'. In one form, blisters and reddening of the skin were exterior symptoms of an affected cardiovascular system that constricted arteries and veins; a second form involved the nervous system, resulting in degeneration of the spinal cord, which caused victims to feel as if they were being bitten or pricked, often causing hallucinations and fits. Many of these epidemics broke out in France; one such epidemic killed over 40,000 people in 922, and then a further 14,000 between 1128-1129 (Carmichael 1993). It was not until the late 18th century that ingestion of the ergo fungus, found on cereal grains such as wheat and rye, was determined to cause

¹² The predominant cause of rickets is a vitamin D deficiency, but lack of adequate calcium in the diet can also lead to rickets.

¹³ **Pellagra** is a vitamin deficiency disease caused by dietary lack of niacin (B3) and protein, and is an endemic disease in Africa, Mexico, Indonesia and China.

¹⁴ **Beriberi** is a nervous system ailment caused by thiamine (vitamin B1) deficiency

fungal poisoning. Incidentally, it has been suggested as the reason for the vivid fantasies of the young women who sparked the Salem witch-hunts in Massachusetts, in 1692.

A plague that originated in close, cramped and squalid conditions was typhus, a pathogen facilitated by rats and lice, which then spread from person to person by the human body louse. The lice thrived and depended upon warmth, blood and being able to lay their eggs in clothing; conditions that were commonly found in jails, on ships and especially wherever military campaigns were taking place. Many historians credit typhus with changing the course of wars; in 1812 the Russians (and typhus) defeated the French, with only 6,000 men returning to France from an original army of 80,000 (Ornelas and Kiple 1977). In 1917, 25 million Russians were infected with typhus, resulting in three million deaths. In the 20th century, DDT¹⁵ a synthetic pesticide was used widely to try to eradicate the lice, which eventually became resistant. Antibiotics were then found to be the most effective treatment.

Before the discovery of vaccinations and antibiotics, infectious diseases noteworthy for their rashes and boils were responsible for overwhelming and devastating pandemics. In 430BC, according to Thucydides, a Greek historian and author of the History of the Peloponnesian War, a great scourge, unlike anything that he had ever seen, ravaged Athens and its port Piraeus. It lasted for almost five years and killed one third of the total population of Athens (Longrigg 1992). A plague similar to smallpox or measles struck the Roman Empire in the 2nd and 3rd centuries killing between 25 and 50 percent of the population, and by the 16th century, measles and smallpox were the most common infection resulting in death, especially amongst children. Close attention was increasingly paid to how the disease of smallpox was caught. Variolation, a primitive inoculation that purposely scratched pus or scabs from an active pox into the skin, led to the discovery by an English physician Edward Jenner, that a very small amount of the bovine equivalent of smallpox (cowpox) given to his human patients, resulted in immunity to smallpox¹⁶ (Crosby 1997:77). Although measles still kills about a million people a year, mostly children in Third World countries where vaccination rates are low, vaccination has eradicated smallpox, and mitigated the worst symptoms of measles.

Vaccination has also done much to reduce the incidence of tuberculosis or TB, which can be traced back to the ancient Egyptians, and is derived from 'Mycobacterium tuberculosis', a relative of an aerobic bacterium 'Tuberculosis bacillus', which is found in the soil. It was a major plague in Europe during the 18th and 19th centuries and like smallpox and measles (in the pneumonic form), was primarily an airborne pathogen and so was easily spread by coughing or sneezing. It is facilitated by a weak immune system and not everybody who contracts the infection will develop the disease; however, it is just as dangerous as it can be spread by those who are not aware that they are carrying the infection. The remedy for TB today is a long treatment of antibiotics, but before this was

¹⁵ DDT: Dichloro-Diphenyl-Trichloroethane.

¹⁶ Jenner named this process 'vaccination' from the Latin 'vacca', meaning 'cow'

discovered, extended periods of rest, good diet and fresh air were the only known 'cure'. Despite these medical advances, Tuberculosis has not been eradicated, and annually, one and a half million people still die from the disease.¹⁷

Dengue Fever, Yellow Fever and Malaria are diseases that depend on the mosquito to spread their viruses. Each has a different pathology and relies on a different species of mosquito, but are wretched diseases whose devastation is not just in high mortality numbers but also in the economic cost to societies in terms of treatment and prevention. For example, in the past thirty years, dengue fever has led to the hospitalisation of more than 700,000 children in Southeast Asia. In order to halt a dengue epidemic in Puerto Rico during 1977, more than \$10 million was spent on hospital costs and preventative control measures (Kiple 1999). Margaret Humphreys (2001), physician and medical historian, claims that malaria is one of the greatest plagues of mankind, because even though it does not always kill, it robs people 'of their energy, their capacity to enjoy life and their ability to make a living' (p.7).

In terms of virulence, morbidity and mortality, two of the most devastating plagues are the 14th century bubonic plague and the 1918 Spanish Influenza (H5N1); both were caused by bacterium that originated in animals but had managed, through either mutation or adaption, to cross the animal-human barrier. Although the microorganism *Yersinia pestis* usually infects rats, which are killed by the disease, the rodents' fleas then transfer to any nearby host, human or otherwise. The disease was characterised by hallucinations, extreme swelling ('buboes') of the lymph nodes and extensive dark bruising; demise was quick as it took just 10 days from flea-bite to death. A deadly variant of the disease was pneumonic, which infected the lungs and changed the disease transmission to airborne; this killed 95 percent of all who contracted it as opposed to a 60 percent mortality rate of the bubonic form. People died quickly and in such great numbers that societies were simply overwhelmed; in 1349 Marchione di Coppo Stefani of Florence wrote: 'bodies were thrown into newly dug trenches in hastily consecrated ground, and dirt sprinkled between the layers of limbs and torsos like cheese between layers of lasagne' (Carmichael 1997:62). In possibly the first recorded use of biological warfare, Tartar soldiers catapulted diseased corpses over city walls during a battle in Kaffa in 1350. First called 'The Great Dying' but later labelled 'The Black Death', it was 'the gold standard of killer epidemics' (Kiple 1999:78). Estimates vary greatly but it is thought that between the 13th and 20th centuries the bubonic plagues claimed more than 100 million lives; possibly up to half of the populations of Europe, North Africa and parts of Asia, before eventually disappearing in the late 19th century.

¹⁷ World Health Organization (WHO). Tuberculosis Fact sheet N°104 - Global and regional incidence. March 2006, <http://www.who.int/mediacentre/factsheets/fs104/en/index.html>

Influenza

I had a little bird, its name was Enza,
I opened the window, and in-flu-enza
(American Skipping Rhyme circa 1918)

For centuries, epidemics amongst domesticated animals appeared to coincide with outbreaks of human influenza (Karlen 1995:143), and this link between animals and humans has since been scientifically proven. Although usually lasting up to a week, with uncomfortable but relatively mild symptoms, influenza can sometimes develop into a deadly pneumonia, as the initial infection allows a bacterial super-infection to occur. Whereas being infected with a disease usually results in immunity, through minor genetic drifts¹⁸ in its surface proteins, the influenza virus constantly changes and people can be afflicted by the influenza virus year after year.

When there are major genetic mutations, the influenza virus may become especially virulent. In the Northern Hemisphere spring of 1918, the usual mild form first broke out in the United States; however in the autumn the virus seemed to change, 'turning into the deadliest of its kind of all time' (Crosby 1997:148). Unusually for influenza, the very young and very old were only mildly affected, but the fit and healthy aged between twenty and forty years of age suffered the greatest mortality. Ninety percent of excess deaths¹⁹ occurred in this age group, and scientific research has determined that it was due to the strong immune systems of the younger and healthier overreacting to the virus, causing a cytokine²⁰ storm.²¹

Although exact statistics are not available, it is estimated that the morbidity²² or infection rate was at least 50 percent, and could have been as high as 80 percent; even though the vast majority of people who caught the flu survived, up to 5 percent of the world's population died. This equated to more than 40 million deaths in less than one year, seven times the number of deaths from World War I; for example, nearly 80 percent of all US army war casualties were the result of dying from influenza (Oldstone 1998:173). Outbreaks swept through Asia, India, Africa, North America, Europe, Brazil and the South Pacific where it was especially lethal.²³ The 1918 pandemic is often referred to as the Spanish flu, not because it originated in Spain, but because, during World War I, Spain was

¹⁸ **Genetic drifts** is usually used to describe minor changes, whereas 'shift' describes an assortment event that leads to a novel virus.

¹⁹ **Excess mortality rates** - the number of deaths beyond what is normally expected [for the given death risk], expressed as a figure

²⁰ **Cytokines:** Signalling proteins and glycoproteins that are often secreted by immune cells when a pathogen is encountered, thereby activating and recruiting further immune cells in order to increase the system's response to the pathogen

²¹ **Cytokine storm:** A potentially fatal immune reaction consisting of a positive feedback loop between cytokines and immune cells, http://en.wikipedia.org/wiki/Cytokine_storm

²² **Morbidity:** the percentage of the population who became infected

²³ In the space of two weeks Fiji lost 14 percent of its population whilst in Western Samoa, 22 percent died within 3 months.

a neutral country whose media reporting, including that of the influenza epidemic, was uncensored; therefore, the Spanish media were the first to report the pandemic.

Medical research since 1918 has revealed that the influenza virus can be classified as having three types - A, B and C - with the 'A' strain responsible for influenza outbreaks not only in humans but also in wild birds and pigs. Wild aquatic avian species are largely acknowledged as being the natural reservoir for all influenza A viruses. They have crossed the species barrier and become established in horses, pigs, humans and even whales. It is when two or more viruses combine in such a reservoir that a new virus evolves; a process called an antigenic shift, as opposed to antigenic drift, which is natural mutation over time. This new virus can be extremely dangerous as the human immune system may not recognise it, and will have no immunity or defence to it. Type A influenza viruses are classified based on the composition of the hemagglutinin (H) and neuraminidase (N) antigens²⁴ on their surfaces and are named for the geographic location where they were first identified.

YEAR	NAME & LOCATION	TYPE	DEATHS - (worldwide)
1918	Spanish Flu(worldwide)	H1N1	Up to 50 million - (estimate)
1957	Asian Flu	H2N2	Up to 2 million
1968	Hong Kong Flu	H3N2	700,000
1976	Swine Flu ²⁵ (U.S.)	H1N1	25
1977	Russian Flu	H1N1	8,300 (US) No excess mortality (worldwide)
1997	Bird Flu (HongKong)	H5N1	6 deaths from 18 cases
1999	Bird Flu (U.K.)	H9N2	2 cases
2003	Bird Flu (Netherlands)	H7N7	1 death from 89 cases
2004	Bird Flu (Egypt)	H10N7	2 cases
2003-2008	Bird Flu - 14 countries ²⁶	H5N1	231 deaths from 365 cases
May 2009	Swine Flu - 69 countries ²⁷	H1N1	125 deaths from 21,940 cases ²⁸

Figure 1: Influenza subtypes of influenzas 1918-2009

The Spanish flu was an H1N1 strain and appears to have been completely avian in origin, however two subsequent influenza outbreaks (in 1957 and 1968), were a combination of genes from both an avian and human influenza virus. Additionally, the global 'swine flu'

²⁴ **An antigen** is a substance in the cell that prompts the generation of antibodies and can cause an immune response.

²⁵ In the US, 24 percent of the population were vaccinated against the swine flu, but after deaths from swine flu that were linked to the vaccination, the program was suspended.

²⁶ Azerbaijan, Cambodia, China, Djibouti, Egypt, Indonesia, Iraq, Lao People's Democratic Republic, Myanmar, Nigeria, Pakistan, Thailand, Turkey, Vietnam. WHO Cumulative Number of Confirmed Human Cases of Avian Influenza (H5N1) reported to WHO. www.who.int/csr/disease/avian_influenza/country/cases_table_2008_02_21

²⁷ <http://www.moh.govt.nz/moh.nsf/indexmh/influenza-a-h1n1-update-sixtythree-070609>

²⁸ As of 08 June 2009, http://www.who.int/csr/don/2009_05_10/en/index.html

pandemic of May 2009 was an influenza (A) H1N1 strain, and appears to be a combination of human, avian and pig viruses.

H5N1 - Avian Influenza

The highly pathogenic H5N1 avian influenza virus was first recognised in 1996, when it was found in a flock of geese in the Guangdong Province of China. From 2003, outbreaks have been reported in poultry farms and bird markets in Hong Kong, and although it is suspected that many went unreported, outbreaks occurred throughout Asia (Korea, Vietnam, Thailand, Indonesia and Cambodia). In 2004, it seemed that the virus had mutated and had become more lethal, killing a wider variety of wild birds. In China in August 2004, the H5N1 infection was found in pigs, and although previously thought to be resistant to any influenza-type virus, domestic cats (in a laboratory setting) were infected with H5N1, confirming that the virus was mutating. Later that year, 441 tigers at a Thai zoo were unknowingly fed diseased chickens, resulting in 147 deaths, a 30 percent mortality rate.²⁹ The virus continued to spread throughout the world via migratory birds; Russia, Europe and Scandinavia all had incidences of H5N1 infection in bird and wildlife, and in 2006, the disease was found in Israel, Afghanistan and the Ivory Coast. Human infection from the avian influenza first occurred in Hong Kong in 1997, resulting in six deaths, with 43 subsequent fatalities (to 2006) occurring within the Asian region.³⁰ Since 2006, 73 cases have been reported outside this area³¹ culminating in 231 deaths,³² with 365 deaths worldwide.

Wild aquatic birds are believed to be the primary reservoir for bird and mammals for the influenza type A virus and, until recently, could carry the disease without succumbing to it.³³ However, when the virus is transmitted to domesticated fowl it causes two different reactions; one mild and the other lethal. The H5N1 virus has been shown to spread, not only via wild birds, but also from farm to farm through movements of people and transportation of cages. In faecal matter it can survive for several days in both low and high temperatures, but this transmission still requires direct contact with the virus. Research to date shows that the H5N1 influenza virus contracted by humans is attributed to very close contact with the birds, either by farming in concentrated poultry farms, or by eating dead or diseased birds; there is limited evidence of human-to-human transmission and none of sustained transmission. The H5N1 avian influenza is still the greatest threat to birds, and culling on a mass scale has been shown to control the outbreaks. It is a virus that crosses the bird/human species barrier with difficulty; this is borne out by the statistics

²⁹ **Mortality:** the percentage of the population who died [from the disease]

³⁰ Bangladesh, Cambodia, China, Indonesia, Thailand and Vietnam

³¹ Turkey, Iraq, Azerbaijan, Egypt, Nigeria and Pakistan

³² H5N1 avian influenza: timeline – last updated 23 February, 2009.

http://www.who.int/csr/disease/avian_influenza/timeline

³³ These birds are known as 'animal vectors' – animals that are not affected by the infection, but nonetheless transmit it to other species.

that show that whilst tens of millions of birds have been infected over a wide geographical area, less than 240 human deaths have been confirmed (WHO, 2008).

As yet the impact on humans of the H5N1 virus is not well understood, nonetheless, there remain some concerning issues. Scientists have discovered that, in terms of antigenic drift, the H5N1 virus has gone through five of the ten gene sequence changes necessary for it to transmit easily from human-to human, and compared to the case-fatality³⁴ rates of major health events since the turn of the 20th century, the avian influenza statistics are alarming. Whilst it is difficult to know exactly how many people caught the Spanish flu during the 1918 pandemic, it is estimated that the mortality rate was between 2 and 5 percent. The severe acute respiratory syndrome (SARS) epidemic that originated in China in November 2002 (and by July 2003 had spread to 28 countries) had a case-fatality rate of just under 10 percent. Moreover, the common cold, which infects millions of people worldwide, has a less than half a percent mortality rate; in comparison H5N1 has killed 62 percent of all those who have been infected.

Although commercial antiviral drugs such as Tamiflu and Relenza³⁵ (which are neuraminidase inhibitors), were thought to be a preventative solution for seasonal influenza, and have been promoted as a preventative for avian influenza, it has since been shown to be only 70 percent effective and only when taken within 48 hours of contracting the infection. According to a review published in 2006 by the Lancet medical journal, the authors Dr Jefferson and colleagues from the Cochrane Vaccines Field, maintain that while the drugs might reduce patients' symptoms 'the use of Tamiflu could actually increase the spread of the flu virus, [because] if people take the drug and have fewer symptoms, they may end up going to work and spreading the potentially lethal virus' (Boseley and Watts 2006). At present, the use of a vaccine does not seem to be a viable preventative option; an influenza vaccine takes approximately 6 months to develop from a non-mutating virus and a further year to produce commercially. H5N1 vaccines have been developed but as they are based on a strain sourced from Vietnam in 2004 they would be ineffective against a later emerging strain.

Current research however supports the stockpiling of vaccines for pandemic preparedness. In the event that H5N1 mutates to a form easily transmittable from human-to-human, 'global and timely access to vaccines will be of paramount importance' (Jennings, Monto, Chan, Szucs and Nicholson 2008:651), with production methods and capacity a major consideration. As the H5N1 virus kills hen eggs (the traditional medium in which to develop vaccines), the pursuit to find new technologies³⁶ that can allow for different ways of developing a vast quantity of vaccines quickly, continues.

³⁴ **Case fatality** – the percentage of the population who died after becoming infected

³⁵ **Relenza** is the trade name for Zanamivir, the first neuraminidase inhibitor commercially developed and is currently marketed by GlaxoSmithKline.

³⁶ For example, animal cell culture is a common laboratory technique that grows cells under controlled conditions. Most commonly these cells are multi-cellular eukaryotes, especially animal cells.

3. LITERATURE, MODELS, THEORIES AND PERSPECTIVES

INTRODUCTION

The over-arching literature for this thesis concerns risk: risk analysis, risk perception and risk communication. It also encompasses media effect theories, public health and risk, and notions of social control and governmentality. The three divisions within this chapter of risk, communication and health should not be regarded as distinct but rather inter-related; indeed it is the interest in the intersection between these three that provides the impetus for this research.

The exposition of theoretical perspectives follows a similar composition to that of the literature review, but with a focus on the theories and discourses that shape how I think about health risk communication and the role of the media *in relation to* the reporting of avian influenza. It has become increasingly apparent that the different areas of focus have a great deal in common; health for example, can be understood as not just a state of complete physical, mental and social well-being,³⁷ but as Foucault (1973) and Douglas (1992) describe, as a cultural construction. The concept of health can be contextualised using a bio-medical discourse or can also be approached from a public health perspective, in the context of an exchange of information between experts and the lay public.

Experts and expertise are central to the notion of governmentality (Johnson 1993:50), which Lupton (1995) states 'locates regulatory activities at all levels of social institutions from the family, mass media, the legislature and the police force' (p.9). An extension of Foucault's theory of governmentality is 'healthism' which Rose (1999) describes as the 'public objective for the good health and good order of the social body with the desire of individuals for health and well-being' (p.74). In other words, as people internalize public health advertisements and messages, the need for state intervention in public health matters is diminished. According to Turner (1994), public health and medicine have strongly coercive elements 'in that they set out to shape and normalize human behaviours in certain ways' (p.27). The media are an intrinsic contributor to this communication process, where journalists must decide what is newsworthy, whilst being constrained by industry competition and printing deadlines. News stories can be framed in different ways, which in turn can influence how an issue is perceived and interpreted. By consistently reporting a story in a certain way, the media can elevate the salience of topics, and some would say, set an agenda for the way the public think about important issues.

³⁷Definition of health according to the World Health Organisation: 'Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'.

In order to situate the central theme of risk communication, it is necessary to explore how the concept of risk has been constructed and how that construction has been applied. Research for this thesis explores risk from several different points of view: from a public perspective, an individualized interpretation of risk, audience reception of risk messages and media interpretation and reporting of risk information. Risk information often originates from large organisations and governmental bodies, who, in their role as perceived experts, have already determined that an event may be risky, and wish to convey their particular message to the 'non-experts'. However, the 'public' may have a completely different idea of the probability of the risk and the issues surrounding it, which may lead to misunderstanding and conflict.

In this thesis, 'risk' as a concept is critically explored through reading of risk and risk communication literature, and provides the framework in which health messages and media reporting can be evaluated. It also sets the background for inquiry into seemingly irrational reactions by 'the public' to risk events, and into responses to those reactions by governmental or organisational bodies whose frustration about the public's slow or lack of response to risk messages and health threats is an ongoing concern. This chapter encompasses literature, models, theories and perspectives around the concepts of risk communication, media, disease and public health in order to build a foundation of understanding about health risk communication.

RISK

Background

How risk³⁸ is understood in everyday life has been the focus of much interest and research since the early 20th century. Definitions of risk, depending on the viewpoint and purpose of the person or organisation defining it, have been variously described as 'the perception of the probability of harm', 'a systematic way of dealing with hazards' (Beck 1992:21), or 'a taken-for-granted objective phenomenon' (Lupton 1999). Attempts to position the notion of risk within different disciplines, such as cultural studies, sociology or science and technology studies, have resulted in distinct approaches to understanding risk.

German sociologist Ulrich Beck for example, asserts that although people have always lived with (and have understood) certain risks, as a result of modernization and globalisation, modern risks are seen as harder to calculate and control, and 'affect all peoples alike, whether rich or poor, regardless of national or geographic borders' (cited in Lupton and Tulloch 2003:2). He coined the term 'risk society' and argued that earlier risks were much more visible, in that 'they assaulted the nose or eyes and were thus perceptible to the senses' (Beck 1992:21), but modern everyday risks are the domain of experts, with knowledge largely residing with the experts, rendering risks invisible to lay people.

³⁸ The word 'risk' was first used introduced into the English vocabulary in 1661, and probably is derived from a Spanish nautical term, the meaning of which is 'to run into danger or go against a rock'.

Concerns about power, governmentality and control of knowledge were issues that arose out of Beck and Giddens' work, where 'lay people were forced to become reliant upon expert knowledges to inform and warn them about risk' (Lupton and Tulloch 2003:3). Beck suggested that knowledge about risk was dependent upon interpretation and that all interpretation was a matter of perspective, in fact, it was 'cultural perception and definition that constitutes risk' (Adam, Beck and van Loon 2000:213). This interpretation Beck argued, made risks 'open to social definition and construction' (p.23) and positioned those within society able to influence such construction (the mass media or politicians) as key:

The system of institutionally heightened expectations forms the social background in front of which - under the close scrutiny of the mass media and the murmurs of the tensely attentive public - the institutions of industrial society present the dance of the veiling of hazards. The hazards, which are not merely projected onto the world stage, but really threaten, are illuminated under the mass media spotlight (Beck 1999:101).

This particular understanding of risk is important for this research, as one of the primary aims is to explore how mass media reporting has influenced and constructed a discourse around risk in relation to avian influenza. Furthermore, the 'risk society', according to Anthony Giddens (1992), consists of external risks and manufactured risks, and is mainly concerned with the manufactured risks; who created them, who was to blame and who could fix them.

Beck argues that risk is socially constructed, and 'is mediated through the lens of social and cultural processes' (Lupton and Tulloch 2003:2), ideas that, in terms of individualism and risk perception, are similar to those of cultural theorist and anthropologist Mary Douglas (1992). She developed the Cultural Theory of Risk and proposed that rather than being the result of one person's knowledge or understanding, ideas about risks are the product of a collective mindset and shared social and cultural meanings. Central to her theory is the notion that frameworks of understanding (within any particular society) help to form attitudes, which in turn support and uphold the social structure. Within these structures, risks are identified and interpreted and are often seen as either political or moral, helping to identify marginalized or deviant groups that pose threats to the larger community. In an attempt to situate deviance in relation to risk, German psychologist Peter Wiedemann states that 'conceptions of taboo and sin deeply permeate the discussion of risks... [and the debate about risk] is the eternal struggle of good against evil' (cited in Timmermans 1996:72). This notion of risk in relation to deviance will be drawn upon when exploring the positioning of those in society who chose not to engage in recommended public health practices.

RISK COMMUNICATION

Background

It is widely accepted that a common reason for a disproportionate reaction by the lay public to perceived risk is a lack of knowledge; however, a problem for risk communicators is that often the more people know, the more they think they have to fear. How then can risk information be communicated without engendering fear and panic?

Risk communication has been defined as 'the flow of information and risk evaluations back and forth between academic experts, regulatory practitioners, interest groups and the general public' (Leiss 1996:86). William Leiss saw risk communication as a legitimate discipline and as having three phases: the first emphasized risk, the second stressed that risk communication should persuade the audience towards a 'correct' point of view, and the third incorporated both elements, highlighting that this approach made for best business practice. In 1986, the first ever conference on risk communication was held in Washington, D.C; many of the noted authorities on the subject today were contributors to this conference, and their work has been influential in the development of risk communication. Underpinning research about risk communication is the assumption that 'those who promote and regulate health and safety need to understand the ways in which people think about and respond to risk' (Slovic 1987:280). Far from being a straightforward assumption, risk communication encompasses many challenges, not the least of which is how to measure the effectiveness of a risk communication that assumes a two-way process, where both parties learn and/or negotiate knowledge. In fact, Cronin (2007) argues that risk communication 'can be seen as a way of closing the gap between [the] expert and lay assessments' (p.37).

In a paper presented at the congress of The International Emergency Management Society, Bernd Rohrmann (2008) similarly described risk communication as a social process 'by which people become informed about hazards, are influenced towards behavioural change and can participate in decision-making about risk issues in an informed manner'(p.1). He asserts that at the core of risk communication is an exchange of risk information between interested parties (individuals, groups, institutions) and that its goal should be to 'modify individuals' risk perceptions and risk attitudes towards protective risk' behaviour (p.6).

Approaches, Theories and Perspectives

In an attempt to counteract what Swedish scholar Palmlund (1992) saw as an emphasis on the quantitative aspects of risk communication and the use of 'management tools' to mitigate risk, she developed a risk theory of social drama, that constructed risk as primarily a social interaction. Not surprisingly, her drama theory involved actors who perform as

agents upon their audience. These risk actors include: Risk Bearers,³⁹ Risk Bearers' Advocates,⁴⁰ Risk Generators,⁴¹ Risk Researchers,⁴² Risk Arbiters⁴³ and Risk Informers⁴⁴ who are involved in a dramatic process, employing a genre and engaging in a dramatic plot (p.205). Palmlund asserts that when evaluating societal risk, her theory provides a critical perspective not only on the discourse and symbolic action, but also on the field of risk analysis. By concentrating on the social interactions of the 'risk actors', she was responding to earlier risk communication theories that, according to Vincent Covello had focussed on limitations of scientific method interaction, risk communicators and experts, channels of communication (through which risk information can be transmitted) and audience reception (Davies, Covello and Allen 1986).

Davis et al. (1986) suggested that the purpose of risk communication was to inform and educate, bring about behaviour change and 'protective action', warn about disasters and give emergency information. Lastly, once these things had been achieved, it was hypothesized that problem solving by all parties would result (p.112). This was a simplistic 'top-down' approach that did not address the complex nature of the audience, something that Peter Sandman (1993) also recognised when he expounded on his theory of a four-stage risk communication. According to his interpretation of how risk communication evolved historically, the first stage simply ignored the public, and 'they were content to be ignored' (Covello and Sandman 2001:169). However, this approach ceased to work as the environmental activism of the late 1980s began, and although dialogue (the third stage) had not yet happened, companies and organizations realised that they needed to explain risk data better (the second stage). During the third stage, Sandman asserted that risk was viewed differently from how it had been viewed before, and could now be thought of as being a combination of two new ideas; hazard and outrage.⁴⁵ This new concept allowed risk communicators to 'reframe' the problem, so that instead of just quoting numbers and statistics, organisations acknowledged people's outrage as being related to the hazard, and they adjusted the risk messages accordingly. Sandman's fourth stage is described in hopeful terms as a stage that is yet to be fully realised; it involves a full partnership between organisations and the public, and includes negotiation and dialogue (Covello and Sandman 2001:170).

³⁹ Consumers and workers

⁴⁰ Consumer and health organisations, Labour unions

⁴¹ Pharmaceutical industry, cattle industry, veterinarian, agricultural extension advisors

⁴² Scientists in private sector research, scientists funded from private-sector sources

⁴³ Law firms, mediators

⁴⁴ Producers and journalists in news media, journals, books and films.

⁴⁵ According to Sandman, (1993), 'Hazard' is the technical component of risk, the product of probability and magnitude, whilst 'Outrage' is the nontechnical component, an amalgam of voluntariness, control, responsiveness, trust and dread.

Hazard vs Outrage

Covello and Sandman (2001), have described risk communication as 'a scientifically based discipline' that can be used to address 'the gap between expert and non-expert assessments of risk' (cited in Cronin 2007:33). Most literature that addresses risk and risk communication recognises the 'disconnect' between those who know the most about a risk (and who have possibly caused the risk), and those who are exposed to the risk and often know the least. The debate has to a large extent focussed on the 'knowledge' component of this disconnect, and has suggested that the way to redress this imbalance is to improve the expert's ability to communicate and the lay public ability to understand. However, by acknowledging that risk has an emotional component, and by trying to solve the conundrum 'why do the public perceive some risks to be greater than they really are', Peter Sandman (1993) proposed that risk was a combination of hazard versus outrage, or a 'function of hazard and outrage' (p.7).

The emotional component of his theory - 'outrage' - encompasses not only how the public respond but also the response itself, which according to Sandman is as real, as measurable and as manageable as 'hazard'. According to his theory, problems with risk communication result when the 'experts focus on hazard and ignore outrage, [but] the public focus on outrage and ignore hazard' (Sandman 1993:8). Critics of Sandman have claimed that his approach continues to privilege the expert's point of view, which is an understandable response if risk is regarded only as a technical issue. However, what Sandman does by acknowledging the 'irrational' is to take a more comprehensive approach to the problems of risk communication, which if anything, privileges the public response over the expert opinion. In fact, Sandman (1993) argues that outrage can be reduced if experts would only trust the public, and suggests that if they 'share information, share the control, and keep the outrage from getting in the way, people will make pretty good decisions about risk' (p.82).

According to Sandman there are many components of outrage, and in his book *Responding to Community Outrage*, he identifies twelve, which include: magnitude, coercion, 'memorable-ness', controllability, trust and dread. Coercion for example, can be demonstrated by the difference between a community having a factory imposed upon them, or being given information, and engaging in dialogue (with the factory owners) to help the community decide whether a factory being built in their community is a good idea. The sources of 'memorability' of past events usually come from the media, but can also come from personal experience, science fiction (movies, comics or books) or in the form of symbols, for example a 55 gallon drum; a universal symbol for dangerous waste. The consequence of a memorable risk is that, 'the more memorable a risk is, the more outrage it is going to generate' (Sandman 1993:25). In his role of working with both industries and communities, Sandman has identified two ways that people can react to risk or potential risk messages.

Adjustment-Reaction and Reactance

When responding to new and potentially serious risk, Sandman posits that communities often seem to go through an 'adjustment-reaction':⁴⁶ initially finding information alarming, becoming hyper-vigilant, hyper-emotional and prematurely cautious, obsessing about the risk and taking extra precautions, but only for a while. Then they settle down to the 'new normal', more concerned but better prepared than they were before their adjustment reaction started, but less concerned than when they were going through it. According to Sandman (2005), there are seven main characteristics of adjustment-reaction: it is automatic; it comes early; it is temporary; it is a small over-reaction; it may need guidance; it serves as a rehearsal and it reduces the probability of a later over-reaction.⁴⁷

Some members of the public convert their initial fear reaction (or premature relief) into contempt, something James Brehm (1966) called 'reactance'. Contrary to what was intended, this emotional reaction can result in people deliberately taking an opposing view or attitude, believing that their freedom has been threatened (by actions or statements of others) and feeling obliged or pressured to adopt a certain point of view. It can also strengthen their resolve to not be persuaded further. Elements of Sandman's theories of adjustment reaction and his interpretation of reactance can illuminate public responses to health risk messages, in particular the New Zealand public's reaction to the health threat of avian influenza.

Warning Fatigue

Monitoring early promises on the one hand and early warnings on the other should be part of the social study of science, as early promises might eventually give way to disillusionment, as too many early warnings might give way to cynicism, disengagement and a decline in trust in science and science-based policy (Brown 2003:3).

Over recent years, many government and health organisations have investigated the effectiveness of their own pandemic planning and issues surrounding the public's interest or attention to risk messages. One of the main problems that have emerged during this evaluation is that the public seem to be demonstrating signs of resistance to, or apathy about risk issues. Labelled 'pandemic fatigue', or more generically 'warning fatigue', this phenomenon could have real implications for the creators of risk messages, and explains what happens when authorities keep alerting the public to risks that never seem to materialise.

For example, at the opening of a ministerial conference in Egypt in October 2008, Paula Dobriansky, the US Under-Secretary of State for Democracy and Global Affairs,

⁴⁶ From DSM IV (Diagnostic and Statistical Manual of Mental Disorders). Also known as or related to adjustment disorder (disorder), acute situational disturbance, acute situational disturbance (disorder), adjustment disorder, adaptation reaction, transient situational disturbance

⁴⁷ 'Adjustment Reactions: The Teachable Moment in Crisis Communication', by Peter M. Sandman.
<http://www.psandman.com/col/teachable.htm>

echoed comments from Egyptian ministers and heads of international organizations when she warned of 'flu fatigue': "There is a growing feeling that the threat of an influenza pandemic has somehow diminished, and that scarce resources could be better used elsewhere in the field of public health, in other words flu fatigue".⁴⁸ Sandman (2003) asserts that the effect of warning fatigue is weak, and people intuitively understand that a false alarm is a lot smaller problem than a disaster they were not warned about (p.13). Still, warning fatigue does happen and often has other costs associated with it; for example, panic-buying of antivirals that are then not used and become redundant as the use-by date expires.

Warning fatigue has been observed to be temporary, however there is often some loss of credibility, especially if warnings are exaggerated or overconfident. It is just as important to consider the alternative: being criticized for 'unduly' frightening people or being criticized for failing to warn people. Sandman (2005) determines that the authorities should not warn us any more often or more urgently than necessary and that exaggerating how unsure they (the authorities) are about an impending risk event, undermines trust more than exaggerating how bad the risk itself may be. Recognition that there is a problem in being over-alarmist was highlighted in a recent presentation at the 'Global Technical Brief on Critical Issues associated with Avian Influenza (AI)'.⁴⁹ The paper began with a background update, including avian influenza statistics as of January 29 2008, as well as current public health standards for pandemic prevention. It concluded with six lessons learned, including: 'Warning fatigue' may pose a risk communication challenge; if too many messages are disseminated with an alarming tone...[it will] lead to reduced vigilance and preparation despite the very real nature of the threat'.⁵⁰ In the absence of robust research and studies to measure how strong or weak this phenomenon actually is, people interested in warning fatigue as risk communication effect are reliant on anecdotal comments such as those above, or on observations by those who have written about risk communication (Nerlich & Halliday 2007; Brown 2003; Sandman 2005). In his online 'guestbook' article entitled 'The dangers of excessive warnings...and of ever-reassurance', Sandman concludes:

All warnings begin and end in apathy. If the bad thing doesn't happen, people get apathetic again. If it happens and ends, people get apathetic again. If it settles in forever, people get apathetic again. Apathy is the default position. What varies is how much people learn, and put in the back of their minds, during the warning phase and the crisis phase - before they become apathetic again.

RISK PERCEPTION

Gilbert White (1911-2006), a prominent American geographer known for his work on natural hazards, demonstrated that for some reasons, such as familiarity about the risk or the

⁴⁸ "U.S. pledges extra \$320 million for bird flu fight", Saturday October 25, 2008, Reuters Group Limited

⁴⁹ 2008 Conference held at the Centre for Communication Programs, Johns Hopkins Bloomberg School of Public Health

⁵⁰ 'Avian Influenza: Critical Program Issues', from the Centre for Communication Programs

amount of personal control (over the risk), members of the public perceive some risks differently from others (Lofstedt 2003). Also called 'decision-making under risk', or 'human response to natural hazards', the study of risk perception has examined the judgements people make when asked to evaluate and describe hazardous technologies or activities (Slovic 2000). As many factors affect how risks are perceived, the question of how to understand these factors has resulted in many studies and much research into risk perception. The study of risk perception has also drawn upon the disciplines of anthropology, psychology, sociology, geography and political science.

Sociological and anthropological studies have shown that people draw upon cultural and social resources to understand risk, and that risk responses are influenced by not only authoritative agencies such as the government, but also by the responses of friends and family (Short 1984). During her anthropological research, Mary Douglas (1992) for example, explored how different types of threats were feared by different societies and whether these differences correlated with differences in culture. Central to her studies was the observation that commonplace events were underestimated in terms of risk, but that exceptional and abnormal incidents roused feelings of panic and anxiety.

Cognitive psychologists Kahneman and Tversky conducted research on heuristics and biases in probabilistic thinking, devising many different experiments in order to explain people's reactions to threats posed by natural hazards. One experiment used an example of a health threat where participants were given a choice of two different possible solutions to the threat. They demonstrated that even though the outcomes of the proposed plans were identical, by simply changing the way the potential threat was worded, participants' preferences for the solutions could be reversed (Kahneman and Tversky 1982). Building upon this and similar psychological research, Paul Slovic joined with Baruch Fischhoff and Sarah Lichtenstein to study cognitive processes and societal risk-taking. They developed a theoretical framework called the psychometric paradigm, which assumed that people could answer quite difficult risk-related questions in a useful and meaningful way (Slovic, 2000). The framework proposed that although risk perception is subjective and influenced by cultural, psychological and social restraints, it can nevertheless be measured through the proper use of design models. Using multivariate analysis and psychophysical scaling to produce quantitative representations of risk attitudes and perception techniques, the psychometric studies showed that threats displayed a unique pattern of qualities that appeared to be connected to their perceived risk (Fischhoff, Lichtenstein, Read and Combs 1978).

In their publication *Risk Communication: A Mental Models Approach*, Morgan, Fischhoff, Bostrom and Atman (2002) incorporated the psychometric paradigm idea and posited that as people assess the size and manageability of a risk, a 'mental model' of the risk is formed. More a metaphor than a formal model, the mental models approach included influence-diagrams and expert-models to generate exemplars and interview techniques;

gathering a snapshot of both expert and layperson beliefs in order to enable organisations and individuals to develop clear and understandable messages about risks.

Social Amplification of Risk

Perceptions of risk are a key element in the process of social amplification; a term that Roger Kasperson coined in the 1980s to refer to the reality that people are more likely to take a particular risk more seriously if others around them are, or when the media coverage 'suggests to them that their neighbours take it seriously' (Sandman 2005). The metaphor of amplification is derived from communications theory and can be understood as 'the ways that various social agents generate, receive, interpret and pass on risk signals' (Pidgeon, Kasperson and Slovic 2003:15).

Relevant to discussion about social amplification or attenuation, is the difference between the voice of the expert and the voice of the 'lay public'. Risk amplification occurs when experts judge events to be 'low-in-risk', but the public pay the event's possibility more attention. Risk attenuation occurs when a society decides that a risk is not that serious, so they pay less attention to it than experts think they should. The reasons that issues become attenuated are less clear than the reasons for amplification; there is a suggestion that attenuation may result from risks that 'occur in distant times, distant places, or [to] distant (that is, powerless or marginalised) social groups' (Kasperson and Kasperson 1996:103).

Social Amplification of Risk Framework (SARF)

In order to integrate the technical and social experience of risk, and to explore why individuals pay attention to some risks, but ignore others, researchers⁵¹ from the Clark University and Decision Research created the Social Amplification of Risk Framework (SARF) in 1988. In this framework, risk was conceptualised as both a social construct and an objective property (of a hazard or event), an approach which avoided 'the problems of total relativism on one hand and of technical determinism on the other' (Renn, Burns, Kasperson, Kasperson and Slovic 1992:138). The goal was to 'examine broadly, and in a social and historical context, how risk and risk events interact with psychological, social, institutional, and cultural processes in ways that amplify or attenuate risk perceptions and concerns, thereby shaping risk behaviour, influencing institutional processes, and affecting risk consequences' (Pidgeon et al. 2003:2). Pidgeon et al. state that within the social amplification network exist 'places' or 'stations' where amplification takes place, namely the social (institutions or organisations) and the individuals (who are members of social units).

A central premise of SARF, as a conceptual framework, is that social amplification (or attenuation) can create 'ripple' effects that result in secondary or tertiary

⁵¹ Jeanne X Kasperson, Roger E Kasperson, Ortwin Renn, William J Burns and Paul Slovic

consequences; triggered by the occurrence or suggestion of an adverse event (which can be relatively minor), the effects generated by a perceived risk can often be more harmful than the actual risk itself. These effects could be economic, changes to the tourism industry for example, or social or symbolic, such as the stigmatisation of a product or community. Pertinent to this thesis, and an example of ripple effect, is the aforementioned warning fatigue. Sandman (2008) says this effect, whilst weak, is also 'real', and impacts upon the credibility of journalists and public officials alike; he also states that exaggeration or amplification can be useful 'in the hands of those who wish to arouse outrage' (p.13).

The social amplification of risk framework (SARF) proposes that the media are central in the amplification (or attenuation) of risk, and as active mediators of information, this premise seems to have merit. SARF begins with the idea of a 'risk-related event' (Murdock, Horlick-Jones and Petts 2001), and the following classic example from literature - the phenomena of moral panic - demonstrates this well. Stanley Cohen was largely responsible for advancing the concept of moral panic, which has come to be understood as 'a condition, episode or group of persons [that] emerges to become defined as a threat to societal values and interests' (Cohen 1972:ix). Cohen placed the media central to the creation of a panic. In his report of a seaside riot between two opposing groups of young people, he showed that through exaggeration, distortion, prediction and symbolization, the media created a problem where there was none. Through the repeated use of symbolic rhetoric the press 'images were made much sharper than reality' (Cohen 1972:30), and stories were constructed that reinforced the public's preconceived notions about adolescent deviance. Likewise, Cronin (2007) places the responsibility for social amplification of technological risks on the expansion of the global media channels, observing that 'modern society is increasingly informed and active, less trusting, more demanding of influence and more socially and culturally diverse' (p.291).

As previously stated, the framework of risk communication provides a lens through which the media reporting of avian influenza and the public's reaction can be understood. The main stakeholders in the risk communication process are those who create the risk (or know about it first), those who are impacted by the risk, those who communicate the risk and those who react to it. However, these roles are by no means distinct, and for risk communication theorists, a challenge has been to understand the effect of one role upon another. If, as Davies et al. (1986) argues, risk communication is about education, then a way to determine if the audience has been 'educated' is paramount. This is why risk perception has been a focus of much risk communication literature, with models to evaluate reception and perception gaining wide appeal.

Sandman (1993) however, regards the audience as already 'educated' or knowledgeable, primed by past risk events and motivated to engage with present or possible risk issues. This, he posits, is why they react to risk messages emotionally, with 'outrage', and claims that this component of risk needs to be acknowledged as integral to risk communication as to the risk or 'hazard' itself. Within the health risk communication

framework, the media and the public are the two 'actors' with which this thesis is engaging, drawing upon the notions of risk as a culturally constructed phenomenon. In reference to Douglas's notion of 'frameworks of understanding' this thesis explores how the risk of avian influenza was identified and interpreted, and whether this identification was associated with individuals or groups being considered to be deviant and operating 'outside' of the expected norms. A question that this raises is whether the risk of avian influenza has been communicated in a way that has reinforced a hegemonic public health didactic.

MEDIA

Mass Communication

The power of the press [in America] is a primordial one. It sets the agenda of public discussion; and this sweeping political power is unrestrained by any law. It determines what people will think and talk about - an authority that in other nations is reserved for tyrants, priests, parties and mandarins (White 1973 cited in London, 1993:2).

Mass communication encompasses many types of mass media: radio, television, newspapers, magazines and the electronic media, but for the purposes of understanding the role of mass communication in relation to this thesis, the emphasis will be on the printed media of newspapers. From the invention of the printing press to modern day, the relationship between the role of mass communication and the public has been under scrutiny. Many studies have analysed the influence and effectiveness of propaganda for example, and have concluded that it is a powerful persuasive tool based on the premise that 'if you can capture their minds, then their hearts and souls will follow'.⁵² Leaflet drops (known as 'grey propaganda'),⁵³ have been used from the World War I (1914) to the Iraq War (2003), as it is believed that if people can read then maybe they can be told what to think and/or how to act. In exploring the role and effect of mass media, it is important to be clear about the level on which effects can occur: the individual, the group, the institution, society or the culture (McQuail 1977).

James Curran (2002) likens the modern-day function of mass media to the Medieval Church suggesting that the media makes sense of and interprets the world for the mass public, 'emphasizing collective values that bind people closer together' (p.77). This statement sits between two competing views about the effect of mass communication; firstly that mass media mirrors society reflecting back to it ideas, norms and values, thus validating and maintaining what is already there. Secondly, that it is a teacher of moral, religious, political and social values 'passing the social heritage from one generation to the next' (Lasswell 1948 cited in Tuchman 1987:195), where the values are understood implicitly and can be a catalyst for change within society (Harris 1999).

⁵² 'Psychological Warrior' n.d. <http://www.psywarrior.com/links.html>

⁵³ Propaganda that does not identify its source.

Media Audience

The media clearly have a powerful role in constructing people's knowledge beyond their personal experience, but people also construct their own relationship to that knowledge and use it as a personal resource. The interaction between media and society is more complex than originally thought; once considered to be passive recipients (or forgetters) of information, through repeated exposure, the audience is now widely considered to be well educated, and to have certain expectations of what they see and read (Seale 2004). In fact, they are well able to interact actively with media representations of issues and events by filling in the gaps when required. Murdock, Horlick-Jones and Petts (2001), in their UK study of the role of the media in the amplification of risk, called the public 'media-savvy and sophisticated'. Their results showed that the media can only attenuate or amplify risk 'if they capture or resonate with an existing public mood' (p.ix), but when the lay public had little information or direct experience of an issue, the media played a greater role in the process of interpretation and refinement.

As previously explained, Kasperson et al. state that during the process of risk amplification, the event or risk signal passes through various individual or social 'amplification stations' causing ripples or secondary or tertiary effects. Like Kasperson et al. the approach for the current research thesis positions the media as a 'primary definer'; this term originates in Hall's (1980) research that describe 'the elites'⁵⁴ as the primary definers, and the media, under the guise of objective reporting, as just the amplifiers of elite messages.

Media Reception

Media reception literature suggests that the reader's perception of what is written in texts is more complex than originally thought; for example, an early media effects theory called the Hypodermic Needle Model⁵⁵ posited that media messages were received passively and without question. World War II propaganda methods were predicated upon this premise, however this theory is now considered obsolete, and subsequent research has shown that audiences respond to articles based on many factors such as the way an article is framed, which voice was used to 'talk about' an issue, or if they are able to personalise what they read.

Psychological and sociological theories underpin approaches to understanding media reception (Staiger 2005). For example, mass communication theorists proposed that the stimulus-response behavioural theory could explain how media messages could be used to alter people's opinions and that functionalism could address how to understand the

⁵⁴ According to Goode and Ben-Yehuda (1994), elites can be institutional or economic, that is, elites with powerful positions and elites with great wealth.

⁵⁵ Also known as the 'Magic Bullet theory, the 'hypodermic needle theory' implied that mass media had a direct, immediate and powerful effect and that it could influence a very large group of people directly and uniformly by 'shooting or injecting' them with appropriate messages designed to trigger a desired response.

individual within the context of the wider society. By focussing on the relationship between the individual and the media, media reception research sought to answer questions about effect, agency and causality.

Stuart Hall, a critical cultural theorist, proposed that people react to messages in one of three ways: they respond and interpret the text as the creators of the text intended, they 'negotiate' problems in the text in order to find their own interpretation of the text or they reject the intended meaning and choose to put the message into 'some alternative framework of reference' (cited in Staiger 2005:80). A criticism of the critical cultural approach however, is that audiences are positioned as having multiple identities, and therefore cannot be regarded as a homogenous group.

There are many reasons why people do or do not pay attention to messages, and cognitive psychology would endeavour to explain these reasons using theories of attribution, dissonance, memory and motivation. This thesis does not explore the cognitive influences on the audience perception of the risk of avian influenza as presented to them by the New Zealand media, but acknowledges that, for some reason, there are some members of the public who pay more attention to risk-threat messages than others. A rationale frequently offered for this reality is that when people hear a message that they think will affect them personally, they pay more attention and in doing so, 'acquire a greater amount of information from the news media' (Wei, Ven-Hwei and Hung-Yi 2007:669).

Media Templates

The ways in which people 'make sense of the world' are many and various, and Kitzinger (2000) argues that, when learning about new media events, the use of 'media templates' is an essential tool. Media templates correspond closely to 'framing' as described by Goffman (1974), where a schema that includes categories and stereotypes is constructed (about a past event) in order to understand a new one. Framing differs to templates in that framing assumes ways of thinking *in society*, whereas templates refers to ways of thinking or 'strategies' *within journalistic practices*; nonetheless, the two are linked. Templates can be understood as a 'social reference point' that shape narratives about new events and stories, 'guiding discussion not only about the past but also the present and the future' (Kitzinger 2000:61).

Research has demonstrated the importance of 'collective memories and historical analogies in audience reception, media representation and effects' (Kitzinger 2000:74) and has shown that, when confronted by news stories, people draw upon large reserves of prior knowledge (Seale 2002). Initial descriptions of events, which use references to past similar events, can create a 'script', which is then used by journalists and audiences alike to make meaning of a new event. These templates are automatically drawn upon as 'powerful pre-packed associations' (p.70), so that when the media used phrases like 'another Vietnam', 'another Hitler' or 'another plague', images are quickly formed and can 'short-cut' the

description process. Furthermore, Kitzinger (2000) defines templates as explaining current events, not only as a point of comparison but also as proof of an on-going problem, highlighting patterns and minimizing dissenting or forgotten facts (p.76). Like the media effect of agenda-setting, templates can define how an event is talked about, thus influencing how people think about a new story, predisposing them to 'come to conclusions with the minimum of analysis' (Nuestadt and May 1988:33).

MEDIA EFFECTS

Media texts, including representations, do not affect audiences in a simple and direct way, but rather that this process is complex, ambiguous and at times, even contradictory (Newbold, Boyd-Barrett and van den Bulck 2002:308)

The history of research on media effects began in the early 20th century, and according to McQuail (1977), can be categorized by four stages: the first was primarily interested in the effects on attitudes of war propaganda; the second extended the gaze on attitude change and was an era of 'limited effects', concluding that the media were effective only if similar attitudes already existed. In the 1970s, the third stage explored the cognitive aspects of mass media and since the mid 1980s, the fourth stage has been defined by social constructivism. Scheufele (2000) observed that 'by framing images of reality in a predictable and patterned way, the mass media have a strong impact in constructing social reality' (p.105). One of the ways that the media does this is to create an interpretation of an event, limiting other possible understandings, even so, 'media discourse is part of the process by which individuals construct meaning' (Gamson and Modigliani 1989:2).

Agenda-setting

As early as 1920, the idea that people's opinions and attitudes could be influenced by what they read was being explored. Walter Lippmann (1922) proposed that because the media is the means by which most people learn about the wider world, it 'determines our cognitive maps of that world' (cited in McCombs and Reynolds 2002:3). Moreover, Bernard Cohen observed that even though the media may not have the power to tell people what to think, they were 'stunningly successful in telling [them] what to think about' (Cohen 1963:6).

In 1968, professors of journalism Maxwell McCombs and Don Shaw conducted research to explore whether mass communication had an influence on public opinion, initiating what is now known as the famous Chapel Hill study (McCombs and Shaw 1972). The results showed that amongst undecided voters during the 1968 U.S. presidential campaign who ranked issues according to importance; there was a high correlation (+.97) between the ranked issues and frequency of news stories about the same issues (McCombs 2004). McCombs also described behavioural consequences of intense media reporting when, for example, in the absence of factual evidence, newspaper stories about an energy

shortage in Germany in 1974 provoked a huge increase in demand for oil, especially by the public for refined petroleum.

Through this exploration of issue salience, Shaw and McCombs originated the theory of 'agenda-setting', which has been the basis for over 400 subsequent studies and bodies of research. Their theory, a cumulative effect model, has frequently been used to understand how people's opinions and attitudes are influenced. The central tenet is that the media have an agenda-setting role as it decides the degree of emphasis or salience that is placed on an issue, and in doing so prioritises the issues for the public. The theory has some constraints, and one of them is that for agenda-setting theory to be applied, the media system and the political system need to be 'reasonably open' - that is to say democratic and free from censorship.⁵⁶ Agenda-setting theory is a direct challenge to previous theories of media effects such as the hypodermic theory, and it has been generalised to investigate issues in the public agenda from civil rights to drug abuse (Zucker 1978 cited in McCombs 2004:61)

Iyengar (1991) approached the agenda-setting model from a cognitive perspective, and suggested that the public, when evaluating or deciding upon an issue, will use information that they have recently read or seen, as it is easier to retrieve this data from their long-term memory. In other words, what they have read *most of*, and *most* recently, will be *most* easily remembered. This idea he called the 'accessibility bias' model, but others (Kim, Scheufele and Shanahan 2002) have named this mechanism the accessibility-based model, and as an agenda-setting effect, can be thought of 'as an almost mindless, mechanical response' (Takeshita 1993:276).

For the purpose of this thesis, agenda-setting theory has a broad application; once the threat of avian influenza was first reported, agenda-setting theory could explain why, through the stories the New Zealand media used to report the H5N1 threat, the New Zealand public's perception of the threat's salience was heightened. It is possible for example, that when the issue stopped being reported, some of the New Zealand public perceived the problem to have gone away, but others, who had been exposed to, or had taken more notice of the risk messages, changed their behaviour. There were anecdotal reports for example, that in New Zealand, as the avian influenza stories were increasing, some people began to stock up on canned goods, water, facemasks and anti-viral medications.

The salience of the avian influenza issue may have been a direct result of the media coverage, similarly, the way the H5N1 stories were framed may have influenced the audience's perception of how 'risky' the threat was. A core tenet of agenda-setting theory is that the way the media frames an issue influences how the issue is perceived by its audience. Entman (1993) calls this process 'sizing' and concludes that the public's interest

⁵⁶ Critics of the media, for example Noam Chomsky, would argue that even in the most seemingly democratic countries, media censorship is pervasive and endemic.

in an issue directly relates to how much and how prominently the information has been displayed by the media.

Framing

Originally, a photography and cinematography concept, framing can refer to page design or aspects of language in verbal messages. In mass media effects research however, framing has differentiated from the stylistic interpretation, and in relation to media effects theory, it can be described as 'the central organizing idea for news content that supplies a context and suggests what the issue is through selection, emphasis, exclusion and elaboration (McCombs 2004:87). McCombs, Shaw and Weaver (1997) describe framing as an extension of agenda-setting, and have labelled it a second-level agenda-setting effect.

Information and news need to be embedded within a meaningful context in order to be clearly understood, and a media frame organises relevant ideas, whilst also suggesting what is salient and topical; it can draw attention to particular issues, and can refer to what is included as well as what is excluded. As a theoretical construct, the framing of news stories is linked to ideas of news production, information control and notions of 'gate-keeping',⁵⁷ and it 'situates the analysis of news in the context of discursive formation of issues, policies, opinions and engagement' (Pan 2008:3). When reporting a story, journalists, through their interpretation of events can 'turn an occurrence into a newsworthy event, and a newsworthy event into a story' (Tuchman 1987 cited in Marks, Kalaiyzandonkes, Wilkins and Zakhroava 2007:184). Journalists can be limited by their own understanding of an issue, nonetheless, by focussing on some aspects and not others, they define and interpret the issue for the public.

Sociological theory posits that framing is influenced by cultural narratives, symbols and stereotypes, whereas psychological literature concentrates on causality and treatment (London 1993). A 'schemata of interpretation' is how Goffman (1974) describes frames in *Frame Analysis*, and suggests that frames have considerable power when the audience is engaging, thinking about and forming opinions about an issue. Framing can change the wording or presentation of an issue and has been shown to powerfully influence decision outcomes for those who engage in an issue through the media, as the earlier example from cognitive psychologists Kahneman and Tversky demonstrated. They conducted research on heuristics and biases in probabilistic thinking, devising many different experiments in order to try and explain people's reactions to threats posed by natural hazards. Their results support the media theory of framing: that the way an article is framed changes peoples perceptions of the issue presented. Frames can be identified by looking for certain words (or pictures) that consistently appear in a story or text, and as ideas are repeated, meanings, concepts or themes are reinforced. McCombs and Ghanem (2001) describe these

⁵⁷ Occurring at all levels of media structure, 'gate-keeping' is the process through which ideas and information are filtered for publication. As a theory used in the disciplines of journalism and mass communication, it was first proposed by social psychologist Kurt Lewin in 1947.

frames as dominant perspectives used to 'organize [both] news organisations and personal thoughts about objects' (cited in McCombs 2004:88).

In his exploration of how television frames political issues, Shanto Iyengar (1991) hypothesized that each story could be classified as using either an 'episodic' or 'thematic' news frame, and found that whilst few news reports were exclusively episodic or thematic, for most stories, one frame or the other clearly predominated (p.14). An episodic news frame is one that focuses on particular cases or specific events whereas a thematic news frame situates events and issues within a generalised context. In relation to health risk reporting, it has been found that episodic framing can represent an issue in the following ways: with sensational reporting (emotive language), non-contextual statements ('35 died') and little or no self-protection or self-efficacy information (Dudo et al. 2007.; Roche & Muskavitch 2003; Friedman et al. 1987). Conversely, thematic reporting is factual, contextual and situational, and gives self-protection and/or self-efficacy information. Furthermore, this thesis takes the view that thematic framing can also include the provision of scientific and medical information.

The results from the paper, authored by Dudo, Brossard and Dahlstrom (2007) that is used in this research as a basis for comparison, showed that the U.S. reporting of the avian influenza could be clearly differentiated into episodic and thematic framing. Their hypothesis that the health risk story of avian influenza would be framed primarily in an episodic way was supported with 50 percent of articles determined to be episodic in content, whilst only 19 percent were framed in a thematic way (p.445).

Attributions of Responsibility

One way to demonstrate the effect of media framing is to investigate attributions of responsibility. As Beck (1999) asserts: 'Risk and responsibility are intrinsically connected...[therefore] ...to whom can responsibility (and therefore costs) be attributed?' (p.6). Attributions of responsibility are critical ingredients of all social knowledge and are often spontaneous, 'powerfully influencing self-images, evaluations of others and emotional arousal' (Iyengar 1991:8). Attribute agenda-setting introduces the element of moral reasoning, and can be regarded as a function of framing. Framing an event, issue or story in a certain way can 'promote a particular problem definition, causal interpretation, moral evaluation and/or treatment recommendation' (Entman 1993:52). The fundamental assumption of this media effect is that people attribute responsibility differently depending on the way a story was framed: being more likely to hold individuals responsible if the story was framed episodically but more likely to hold government and society responsible if the story was framed in a thematic way.

Iyengar (1991) hypothesized that threats about which individuals were familiar or had personal knowledge, would be less responsive to contextual cues, such as framing, than they would be for threats with which the audience were less familiar. Using crime (personal) and terrorism (less familiar) as variables and by observing that both issues were

framed similarly (episodically) in news stories, his research showed that 'framing was more powerful when terrorism was the target issue' (p.45). Iyengar concluded that responsibility was assigned to individual causality (personal qualities of terrorists) when a familiar issue was framed episodically; however, when an unfamiliar issue was framed in the same way, the causal responsibility was societal (social or political reform).

The process of attributions of issue responsibility is far from straightforward, and caution must be used in applying this theory to opinion formation. However, if an 'at-risk' individual can be produced in an avian influenza news discourse, and media framing of an event or problem can influence to whom the public attributes responsibility, framing could be a powerful media tool.

Priming

Down's (1972) observation that an issue will be paid more attention the next time it is reported in the media, is a media effect that has been referred to as 'priming' and was applied to media use in the 1980s. Often regarded as an extension of agenda-setting, (which make some issues more salient than others), and a factor in causal attribution and opinion formation, priming occurs when the media produce certain content that 'influence people's subsequent behaviour or judgments related to that content' (Roskos-Ewoldsen, Roskos-Ewoldsen and Dillman-Carpentier 2002:97). Originating in the discipline of cognition and psychology, priming can refer to the activation of a concept, which 'for a period of time, increases the probability of memories and thoughts associated with that concept, to come to mind again' (Berkowitz and Rogers 1978 cited in Perse 2001:109). What this means in practical terms is when a news story is presented in the media, because of previous emphasis on some aspects of the issues and not others, the public will associate the story with a pre-scripted schema that has previously been provided for them by the media. Once again, this results in some issues or aspects of an issue becoming more salient and more memorable than others; even though subsequent news stories may be reported in a balanced way, because of the priming effect, the public will pay more attention to those aspects of the story that come to mind more easily. Priming can also reinforce pre-existing stereotypes (Pechmann 2001), defining the situation and producing a 'desirable' citizen; for example, a woman who has mammograms every two years to ensure early detection of breast cancer.

This thesis intends to explore, whether as a result of the media linking the health threat of avian influenza to the 1918 pandemic, or the more recent SARS outbreak, avian influenza itself came to be regarded first and foremost as a pandemic, when in actuality, each outbreak was isolated and contained.

Issue-Attention Cycle

Observations that public attention to issues do not seem to last very long, despite some issues having continued and real consequences, resulted in questions that have focussed on

whether public attention can last long enough to effect political or legislative change. Anthony Downs (1972) hypothesized that a 'systematic cycle of heightened public interest and then increasing boredom' (p.1) could be demonstrated when looking at the media/public interaction. Furthermore, he proposed that this cycle had five stages, which almost always followed a predictable pattern.

The first of these stages was a 'pre-problem' stage, where although experts may already be alarmed, the public have yet to pay attention to it. 'Alarmed discovery and euphoric enthusiasm' is the second stage where the public, through being primed by similar past events (past epidemics for example), become 'both aware and alarmed' (p. 3). In the third stage, there is a recognition that along with the problem there needs to be a solution, and this stage often focuses on economic and technological issues. Frequently, the problems associated with solving the issue seem overwhelming, and in this fourth stage, discouragement and boredom can set in. Moreover, if a new issue has subsequently emerged, the public 'will' to continue to engage with the original problem wanes.

The 'post-problem' phase is the last stage, where the issue has been firmly replaced with a new one, although positive outcomes in the form of policies and campaigns may have resulted. Downs (1972) asserts that once an issue has gone through the issue-attention cycle, and if it were to emerge again, it would 'receive a higher level of attention' (p.4). The research for this thesis intends to pay attention to the presence of this cycle in the New Zealand media and its influence on those who read media accounts of the avian influenza. This theory of public reaction to risk events has some similarities to Sandman's adjustment-reaction theory in that a past risk event serves as a rehearsal or 'prime' for a new event, evoking a reaction or cycle that can be predicted. Both theories hypothesize that the last stage results in a public that has heightened awareness of the risk event.

THE PUBLIC UNDERSTANDING OF SCIENCE

Background

Friedman, Dunwoody and Rogers (1986) propose that, in its widest sense, 'science comprises not only the biological, life, and the physical sciences but also the social and behavioural sciences and such applied fields as medicine, environmental sciences, technology, and engineering' (p.xv). The domain of science is characterised by uncertainty, debate and questioning, subject to continual revision, and is something that cannot be assumed to propose absolute forms of knowledge claim. Once it interfaces with the media and 'the publics', science tends to become transformed into something called 'information', and when this information is communicated, whether it be by scientists directly, or via the mass media, it becomes 'science information'.

The communication of science is fraught with difficulties, including the understanding of what science is, and what it means to many of the 'actors' involved in

science communication: scientists, researchers, journalists and the public. The relationship between scientists and journalists is complicated, with risks and benefits for both. For example, a scientist, wanting to raise his profile and secure funding, may give a reporter a news story in which he is subsequently 'misquoted'; alienating his colleagues and possibly damaging his reputation. The journalist, through limited understanding of the medical or scientific issues, reports the story inadequately, inhibiting the journalist's chance of future access to the scientific community. Pertinent to this thesis, is the role that the media play in the communication of science and technology.

The concern for public 'science literacy' has led to measures and surveys of public understanding and attitudes towards scientific knowledge. In 1990, a British initiative in public understanding of science began to look at the gap between the public domain and the world of science by asking three questions: 'What do people say about science? How do people use science? How is scientific knowledge supplied and received?' Their preliminary results showed that first and foremost 'science', as a construct, was not a 'well-bounded, coherent thing capable of being more or less understood' (Ziman 1991:100). Science also meant different things to different people depending on the situation in which the information was received, the personal agendas and needs of the audience and the perceived trust and credibility that was attributed to the source. This and other surveys, including the Oxford survey (Durant, Evans and Thomas 1989) and a survey by the [U.S.] National Science Board (2002)⁵⁸ found that a high percentage of adults had little or no understanding of even the most rudimentary aspects of scientific knowledge. Moreover, both surveys highlighted that interest and knowledge about science were positively correlated, but when it came to general attitudes and scientific 'literacy', the link was weak (Ziman 1991:103).

Scientific communities know that it is important to communicate new research or scientific information with the public, as public acceptance or uptake of new technology often results in the raised profile of projects and further funding and grants. *The New England Journal of Medicine* and the *Journal of the American Medical Association* preview their most important articles for reporters before releasing them to the general public, ensuring publicity and directing the dialogue between the researchers and the press. Additionally, almost every hospital in the United States has a publicity/media-relations department whose main purpose is to translate highly specialized medical information into 'lay' language, which is then circulated via the mass media (Friedman 2004). If, as several studies have revealed, most lay people get their science information from the media, then the mass media are a vital conduit with a responsibility to report scientific, health and medical information in an accurate and careful way.

⁵⁸ The survey found, for example, that about half the people surveyed believed that humans and dinosaurs lived together on the earth at the same time and that even less, just 10 percent, could define what a molecule was.

The role of the Media

Scientists and journalists use language in very different ways:

To the academician, the language of the reporter is excessively casual, trivialising, and simple minded, if not downright wrong or silly. To the journalist, the language of the academicians is excessively passive, technical, and complicated, if not downright wordy or pompous... (Tavris 1986:25).

Studies have shown that when it comes to evaluating what constitutes good scientific communication, neither journalists nor scientists think that the media is doing a good enough job (Chappell and Hartz 1998). Understandably, scientists and journalists have different agendas when it comes to communicating science to the public; scientists often feel that scientific information should educate (Friedman et al. 1986:xii), but journalists want to make their story interesting or novel in order to generate interest and sell newspapers. Although science information professionals (usually trained journalists) can be the intermediary between the scientist and journalists, few have a formal scientific education (Weigold 2001).

When it comes to personal health, a U.S. National Health Council survey conducted in 1998, showed that the people surveyed paid either a moderate or a great deal of attention to medical information reported in the media. Magazines, journals and newspapers were cited as the primary source of health care information - 50 percent - and more importantly, 60 percent of people changed their behaviour in some way, with 42 percent seeking further information from their doctors or the Internet (Lakoff and Johnson 1981). Studies also showed that the media tended to stay with mainstream scientific sources, and favoured using press releases from large health organisations such as the US Food and Drug Administration. However, by repeatedly using the same sources, journalists run the risk of 'creating' experts, when in reality, the source may have been the only one available and so participate in the politics of science mentioned above. Several factors determine who is used as an expert source; availability, credibility, loyalty and public profile are all factors that come into play when a scientific or medical news story is being written and information is needed.

Other constraints on how a scientific or medical story is written have already been alluded to and are often editorial, or economic; for example, in order to run a newspaper as a profitable business, readership and advertising levels must be maintained. News stories have formulas that are strictly adhered to and often do not allow for complex language or difficult concepts, which are often characteristic of scientific stories. An example of such a formula is a 'hard news' article⁵⁹ that must include 'what, who, where, when, why and how'; all within the first few paragraphs (Friedman et al. 1986:23). This is primarily so that

⁵⁹ Hard and soft news are terms to denote characteristics of a news story where hard news covers breaking stories as well as serious topics such as politics, economics, crime, war, and disasters, as well as law, science, and technology. Conversely, soft news is not timely, and includes 'human interest' stories and events like arts, entertainment and sports.

readers can quickly skim an article and still comprehend all the relevant information. A positive aspect of scientific and medical reporting is that the deadlines are usually much longer than 'lead' stories of disasters or political issues; however, this extra time is often necessary, as the complexities of technical medical or health stories requires careful and informed investigation. It is interesting to note that New Zealand has almost no specialist science journalists, with health reporters operating mostly by hard news deadlines.

Models of Public Communication of Science and Technology

This thesis employs a social constructionist methodology and engages in critical discursive analysis when exploring how risk is constructed by both the media and the public. Implicit in this approach is that there are no 'givens' in the social world, and this thesis acknowledges that drawing upon models tends to imply an assumption that there is something fixed that can be measured. However, reference to models in this thesis is a way of putting together a 'cluster' of ideas, as a type of heuristic, and for the purposes of a particular analysis.

A desire by the scientific community for public support for scientific work has led to research in order to measure public attitudes towards and knowledge of science and technology. Recently, research has progressed this question to look at why some information is assimilated more easily than others. Models of understanding (outlined briefly below) are 'frameworks for understanding what the problem is, how to measure the problem and how to address the problem' (Lewenstein 2003).

The deficit model is predicated on the notion that the public have a deficit of scientific knowledge that needs to be filled, and that once this need is met then 'all will be well'. Moreover, the assumption that members of the lay public are scientifically illiterate raises issues of inequality and power, where the power resides with those who have the knowledge. It is also a pejorative and narrow approach in that it assumes that one sort of knowledge (that of the 'experts') is worth more than another (that of the 'publics') which is not the approach of this thesis. As stated in the methodology chapter, avian influenza will be viewed not only as a health threat about which there is medical and social knowledge, but also as a phenomenon that has had particular meanings attributed to it.

Local knowledge, that is, knowledge 'based in the lives and histories of real communities' (Lewenstein 2003:4), is regarded as central in the 'lay expertise' model. Whilst this model can be seen as addressing the knowledge/power imbalance of the deficit model, critics argue that this model privileges local knowledge over 'known' information, and has been labelled as 'anti-science'. The public-participation model (sometimes called the dialogue model), addresses some of these power imbalances by promoting public participation - seeking input from the public into science issues - a process that has been called the 'democratizing of science' (Sclove 1995). However, critics of this model say that this public engagement can be seen as having more to do with politics than public education and understanding.

The model of public communication that has most resonance with this thesis is the contextual model as it situates public knowledge within personal experiences and acknowledges cultural and social discourses. It also recognises that social norms and expectations as well as media representations can attenuate or amplify public anxiety about health issues (Kasperson 1988). The way that the media construct health issues and how the public perceive them has been an important component in developing a 'public understanding of science' discipline. Just as the two main 'actors' in the public understanding of science are the 'expert' and 'lay public', public health involves a binary of professional and lay dimensions, with the media often acting as a conduit between the two.

HEALTH

Public Health

The notion that health is a public responsibility is not a recent phenomenon and examples of health regulation can be found as far back as 1348, when, in order to try to combat the many outbreaks of disease, Venice and Florence commissioned magistrates to oversee the first boards of health (Slack 1992:15). One of the many initiatives these boards produced were 'health passports' that were used during the European outbreaks of bubonic plague to ascertain the plague-free status of travellers: quarantining of the sick, burial of the dead and record-keeping were just some of the duties that the board managed (Carmichael 1997). Germanic publications of the 17th and 18th century describe the duties of the municipal police who, as well as being responsible for religion, highways, customs, commerce and beggars, had a division called the 'medical police' who were the regulatory body that oversaw health and cleanliness (Rose 1994:54).

Public health, as a civic responsibility, grew out of the increase in urban populations with the inherent problems of large towns: for example, issues of town planning and the need to provide clean water and efficient sewage systems. The first known formal concept of public health was devised by Edwin Chadwick in the Victorian 1840s, who suggested that epidemic disease was first and foremost a product of dirt and miasma,⁶⁰ found mainly in towns, especially in the least sanitary precincts, and most importantly could be 'remedied' by public health engineering (Pickstone 1992:126). Furthermore, it could be argued that in the attempt to write about disease, health and hygiene as a concern for the whole population rather than for the individual, the writers of the Enlightenment were anticipating the notion of public health (Riley 1987).

Public health control mechanisms such as quarantining and segregation are early examples of government-sanctioned health policies such as the British Imperial Vaccination Act of 1853 and the 1908 Australian Quarantine Act, and is often described in terms of 'old' and 'new'. The 'old' public health was located in the industrialism of Europe and North

⁶⁰ A poisonous atmosphere formerly thought to rise from swamps and putrid matter and cause disease

America, and was associated with trying to address rapid urbanisation, overcrowding and squalor (Costello and Haggart 2003). It was an environmentally based public health that was a reaction to disease rather than a focus on prevention. The 'new' public health that emerged at the turn of the 20th century was characterised by quarantining, isolation (sanatoriums for example) and immunisation programmes. Health was increasingly viewed not as situated within large institutions such as hospitals, but as an individual responsibility where a healthy life-style was the goal, albeit a goal for everyone (Petersen and Lupton 1996). The relationship between public health and governance, where, through health promotion and education, the state acts 'in the best interests of its citizens' (Lupton 1995) has been problematised in terms of power and social control, where citizens were directed by the state to conduct themselves in a certain way; an idea that Michel Foucault called 'governmentality'.

Governmentality

The power to govern is often presented as the power to heal
(Waldby 1996:5).

Governmentality can be described as the way that people are governed through organised practices; not just a 'top-down' mechanism of the state but also through discourses and knowledges that are produced by accepted organisations, such as schools or medical institutions. In this way, social control is achieved through internalised knowledge that produces not only an acceptance of government policies but also an implicit consent; a hegemonic device that is most effective. Lull (2000) explains hegemony⁶¹ in this context as 'the power or dominance that one group holds over others, [gained through] a tacit willingness to be governed by principles, rules and laws which *they believe operate in their best interests*, even though in actual practice they may not' [italics added] (p.51). Dean (1999), simplifies the notion of governmentality by suggesting that it is a 'mentality of governing' or a way of thinking about how we govern others and also how we govern ourselves (p.12). It is important to clarify that the concept of governmentality is not just about 'the government' but encompasses social groups, institutions and organisations at both a local and national level.

In her book, *The Imperative of Health: Public Health and the Regulated Body*, Deborah Lupton (1995) states that the word 'health' has come to mean 'more than a medical condition, disease (or lack thereof), and it comprises a group of knowledges used to assess different populations for different governmental strategies' (p.70). She also asserts that governmentality, as a concept, is a combination of both coercive and non-coercive institutional and state strategies, which are 'urged upon individuals for the sake of their own interests' (p.9). Central to governmentality is 'the expert' and their knowledge

⁶¹ Hegemony, a term first coined by Antonio Gramsci describes how the domination of one social class over others is achieved by a combination of political and ideological means.

and expertise, who, according to Miller and Rose (1993) are important mediators between individuals and authorities. Health promoters, doctors, spokespeople for health organisations such as the World Health Organisation (WHO) embody expert advice, and under the guise of improving health through self-regulation they encourage, warn, advise, prescribe and recommend. Due to the constantly changing nature of medical and scientific knowledge however, it is difficult for the lay public to know how much to trust these experts (Giddens, 1992).

Other health educators, parents, teachers and social workers for example, are part of what Kendall and Wickham (1992) call 'the framework of public health', and are reliant upon other health experts and health knowledges. Although they often have very different roles, Lupton (1995) contends that they all encourage certain practices and promote the importance of rational action. Health education, which has long been regarded as a good thing, can also be seen as a means of control as 'truths about health' which are imposed on the public, who often possess little or no medical or scientific knowledge (p.11). The terms 'health' and 'unhealthy' have come to mean much more than the presence or absence of disease, and as Petersen (1997) asserts, have become 'signifiers of normal and abnormal identity: of one's moral worth' (p.198).

Statistics, that is quantitative and quantifiable information about health and illness, can also act as a disciplinary power providing incontestable knowledge that 'changes things, have effects [and] are a means by which power circulates through the social body' (Bashford 2004:44). In terms of the media use of numbers and statistics to report health risk events and construct a level of risk, this critical observation regarding the disciplinary power of the use of statistics has relevance for this thesis.

Public Body

In this thesis, the word 'public' is operationalised as a social body made up of individuals who are themselves products of that social body. The theoretical approach of this study is to constitute the body as socially constructed, the meaning of which changes according to culture, situation and context. Deborah Lupton, in *Medicine as Culture* elaborates: 'the human body can no longer be considered a given reality, but as the product of certain kinds of knowledge and discourses *which are subject to change*' [italics added] (p.23). Anthropologists Scheper-Hughes and Lock (1987) describe the body as having three distinct but related parts: an individual 'lived' body-self, a social body, which is symbolic or representational, and a bio-political body, controlled by state organisations interested in maintaining social order (p.7).

Waldby (1996) explains that politically, the public are regarded, not as individuals, but 'as one body, the social body or the body of the polity' (cited in Bashford 2004:4). The social body has been 'problematized in the vocabulary of medicine' (Rose 1994:54), and it is perceived in public health discourse as 'dangerous, problematic, ever threatening to run out of control, to attract disease, to pose imminent danger to the rest of society' (Lupton

1995:70). A natural progression of this idea is that if the body is deemed by health experts to be sick, then it is the role of the public health system to return it to (its previous) well 'self'. By the individual ceding responsibility for health and control of disease to organisations, (medical or state), the 'body' becomes a public body, belonging to the collective rather than the individual, and as such, actions to control it are 'for the good of all'.

Petersen and Lupton (1996) assert that the modern public health includes physical, social and environmental elements and encompasses most aspects of everyday life, including activities as diverse as health promotion, education, diagnostic screening and epidemiology (p. ix). Along with recommendations that people take an individual approach to managing their own health (by stopping smoking or keeping fit for example), there are also legislative measures to ensure that when these responsibilities are not taken seriously, there are safeguards in place. Examples which demonstrate this notion of social responsibility are laws requiring the wearing of bicycle helmets, the threat of large fines for exceeding the speed limit or prison sentences for those who knowingly infect others with the AIDS virus. Discourses of personal freedom and accountability are juxtaposed with those of state control of public health, thereby creating tensions and anomalies. For example, the government health experts recommendation to new mothers concerning vaccinations for their children, has created public discussions about informed consent and power relationships, and added to the discourse about what constitutes 'good mothers' and 'responsible parenting'.

Social Responsibility

The individual's attitude towards himself, the way in which he ensured his own freedom, in regard to himself, and the form of supremacy he maintained over himself, were a contributing element to the well-being and good order over the city (Foucault 1985:79).

During the 20th century there was an increasing emphasis on personal accountability in terms of health, and a desire by the state to produce 'healthy citizens', generating a myriad of health initiatives aimed at getting people to stop smoking, get fit, lose weight and eat right. The consequences of ignoring expert advice were depicted explicitly, for example actual photographs of cancer victims on cigarette packets. Publicity campaigns, both in print media and on television that have attempted to get people to change their behaviour and effect an improvement in their health have had limited success, in fact, sometimes they have had the opposite effect.⁶² More recent strategies have focussed on the larger society, in order to construct an 'irresponsible' or 'bad citizen'. Examples of this are the recent ads on New Zealand television that highlight the effects of passive smoking, where wafting carcinogens are seen to float over and into friends and children.

⁶² 'Why Some Anti-smoking Ads Succeed And Others Backfire' ScienceDaily (July 20, 2007). <http://www.sciencedaily.com/releases/2007/07/070719170315.htm>

Increasingly, those close (in terms of family) to the smoker are depicted as fed-up, affected, disapproving or, in the ad where the smoke passes over a bassinette, simply helpless against such irresponsibility. The message is clear: 'choosing' to engage in behaviours which may result in sickness and disease impacts negatively, on not just the individual, and implies that the chosen behaviours weaken the whole society.

Social responsibility can be understood through the notion of the 'good citizenship' or demonstrations of pro-social behaviour. In the media, this is demonstrated by stories of heroic acts, as in the recent intervention by an Auckland businessman to save a young woman from attack, and who then was himself stabbed to death.⁶³ At a time when empathy and civic duty are reported to be in short supply, this incident was front-page news in all the main newspapers for several days. This story seemed to strike a chord with the New Zealand public and resurrected discourses of social responsibility, neighbourly and community involvement. As Petersen and Lupton (1996) explain: 'for citizens, 'participation' has become not simply a right but a duty. In the discourse of neo-liberal democracy, participation is taken as a prerequisite of the fully democratic society' (p.xvi).

Deviance and 'Othering'

The social construction of boundaries of 'self' and 'other' and their relationship to boundaries of 'safety' and 'danger' are particularly relevant to understanding notions of health and disease (Flowers 2001:51).

According to Grove and Zwi (2006), 'othering' reinforces ideas about 'normality', and uses differences in others as 'a point of deviance, effectively creating a separation between 'us' and 'them' (p.1993). In mainstream society, there are pressures to conform, dress appropriately, and to exhibit behaviour consistent with social norms. Haggart (2003) argues that it is within this mainstream group that people expect to be 'protected, educated, employed and *have their health needs met*' [italics added] (p.153), and if people choose to put themselves outside that group, then their ability to access 'in-group' benefits become more difficult. According to Turner (1994), public health and medicine 'have strong coercive elements' (p.27), which function to construct, mould and *normalise* human behaviour (cited in Lupton 1995). Illness too was normalized and classified, allowing for control and intervention by those appointed to those roles (health officials for example) by a democratized election process. Risk communication, similarly, can be understood as a means by which the public are coerced by the privileging of knowledge by the experts and by the reporting of disaster predictions as fact.

The practice of regarding those other than oneself, or other than one's social group, as the source of danger or 'risk', has been analysed by Joffe (1999). In simple terms, the concept of 'the other' is a way for people to understand themselves and the roles they perceive themselves to play in relation to others around them, in order to feel good about themselves by regarding others as different and common, or as subordinate. It has the

⁶³ 'Accused 'Quiet Man'', New Zealand Herald, 28 September, 2008.

effect of disowning what is undesirable and recognising it in 'some other' (Clarke, 2003), and it is an ethnocentric way to regard the world that can contribute to assumptions of inferiority. One of the issues that this thesis explores is how 'problems' of non-compliance (with recommended health imperatives) are represented in media stories about avian influenza and how they talked about by the lay public. Of interest also is who decides what should be done in regard to the health threat of H5N1 virus, and who is perceived to be non-conforming. The practice of 'othering' can result in strategies of exclusion and avoidance, as well as promoting stereotypes, for example 'Asians have unhealthy farming practices', or 'Asian governments seldom report outbreaks of bird flu'.

In regard to the media's role in health risk communication, it is commonly observed that the media often accentuate dramatic events and risks that are 'easily tied to moral and political agendas' (Joffe, 1999). The 'us' and 'them' paradigm can be applied, in the case of H5N1 reporting in New Zealand for example, to those in the community who do have a stock of canned goods and bottled water ready for any emergency, and to those who do not. Othering can also apply to countries who have had avian influenza appear in their midst, but have not openly reported it, with the implication being, if avian influenza broke out in New Zealand, the New Zealand government would be responsible in reporting it.

CONCLUSION

This thesis endeavours to situate risk communication within a domain of bio-politics, modernity, frameworks of governmentality and the constructions of meaning, but it equally attempts to examine how the 'realities' of risks (as described by the scientists and medical fraternity) are communicated by the media. The development of risk theory (Beck 1992 1999; Douglas 1992; Giddens 1992) underpins the exploration of risk communication in this thesis, as does the research on risk communication (Leiss 1996; Covello et al. 1989; Sandman 1993; Palmund 1992). In particular, the theories of reactance, adjustment reaction and warning fatigue will be drawn upon when analysing how the participants of the focus groups described how they reacted to media reporting of the avian influenza virus. Particular attention will be paid to the self-reported rationale for similarities and differences of their reactions, and the role the media were perceived to have played.

Social amplification of the risk of avian influenza by the media *and by* social groups within New Zealand will be an area of interest for this analysis. It is expected that this will be found through the thematic analysis of the newspaper articles, especially in those articles that are critical of the pandemic planning messages. The SARF theorists Kasperson, Kasperson, Renn, Burns and Slovic, claim effects generated by a perceived risk can often be more harmful than the actual risk itself. In relation to the analysis of both the media reporting and the focus groups, 'ripple' effects of the amplification of the risk of avian influenza to the New Zealand public will be examined.

By comparing the results of case study of this thesis with the research by Dudo et al. (2007) and through reviewing similar literature (Friedman et al. 1987; Nerlich and Halliday 2007; Roche and Muskavitch 2003), it is hoped to understand how the New Zealand media reported the health risk of avian influenza. The public understanding of science literature and models of public communication (Friedman et al. 1986; Ziman 1991; Sclove 1995; Lewenstein 2003) will be valuable when assessing the self-efficacy and self-protection information, and when hypothesizing about the differences between the New Zealand and U.S. media reporting. In addition, it is hoped that analysis will reveal how the public were 'positioned' by the media, that is, how they were represented in newspaper articles; Sandman's (1993) critique of existing risk communication theories will be drawn upon here.

4. METHODOLOGY AND METHODS

INTRODUCTION

The over-arching purpose of this thesis is to explore the communication of health risk messages. Examples of risk messages are many and varied and can originate from a myriad of sources; health, bio-security, fire departments, consumer watch-dogs and vying political parties. Risk information may be as brief as a newspaper advertisement or as enduring as a year-long campaign communicating through billboards, television, 'advertorials',⁶⁴ post-box leaflet drops and press releases. The target audiences are usually specific and obvious to the recipient. For example campaigns to raise awareness about breast cancer that urge women to self-examine are obviously directed at women, and when they are not, as in the recent New Zealand breast-cancer awareness urging men to encourage their partners to have mammograms, it is equally as obvious. The majority of risk communication messages that the public are exposed to are derived from health sources such as government health departments, or medical and therapeutic organisations in the form of press releases or organised campaigns; the meningococcal vaccination program implemented by the New Zealand health department in August 2005 and the advertising that preceded it, is one example.

Other types of health risk messages are not so overt, but operate as risk messages nonetheless. These constitute the risk messages related to avian influenza, which are the focus of this research. Two methodologies were used: the first was in the form of a content analysis of news coverage about the recent⁶⁵ health threat of avian influenza. Examples of health risk communication about avian influenza were sourced from the New Zealand print media; the four main newspapers that represent the four largest cities. Equally important as the print media's reporting of avian influenza was how information, statistics and warnings about avian influenza were understood and interpreted by the New Zealand public. Consequently, the second approach utilized group discussions from four focus groups that explored perceptions, feelings and opinions relating to individual and community risk resulting from the health threat of avian influenza. The analysis of this data took special note of how the people in the groups, as they discussed the various issues between them, constructed concepts of illness, risk and contagion.

The discourses and themes that emerged from the analysis of the newspaper articles were used to formulate questions for the focus groups discussion and included debates about planning and preparedness (social infrastructures for example), medical and health imperatives, past risk events, warning and urgency. Through the analysis of the

⁶⁴ The word advertorial is a combination of the words 'advertisement' and 'editorial' and was used as early as 1946. Usually published in magazines and newspapers, they are purposely designed to look like objective, legitimate articles but are really selling products, just like any other advertisement.

⁶⁵ Avian influenza was first reported by the World Health Organisation in 1997 as a potential threat to global health.

newspaper articles, definite themes about and around the issue of avian influenza emerged and were identified, even so, it was not assumed that the focus groups would reflect these same themes. It was important to hear what people said about their experience of reading about avian influenza, rather than imposing a rigid framework on the discussions. Although two distinct methods have been used in the gathering of data from newspapers and focus groups, and the methods complement each other in many respects, there is no attempt to combine them too rigidly.

METHODOLOGICAL APPROACH

The methodological approach for this thesis is constructionist, and is situated within an interpretive epistemology; however, rather than assuming that knowledge in the social domain is determinate it endeavours to look at trends within the wider contingent processes. This interpretive approach assumes that the nature of the social world is an ongoing, constituted, socially constructed phenomenon, and that this phenomenon and associated meanings are being continually produced by social actors.

Human behaviour is a product of how people view their world, a phenomenological idea, first attributed to the work of Alfred Schutz (1899-1959). This thesis attempts to understand people's concept of risk associated with avian influenza (H5N1) from their point of view, with an assumption that each is constantly interpreting his or her environment. This phenomenological approach is particularly useful for this case study because constructionist ontology would suggest that the avian influenza pandemic is not just being understood as a medical and social fact, but it also has particular meanings attributed to it. It could be for example, that blame or stigma has been attached to those who catch the disease or to those countries that seemingly fail to inform the wider global community and are perceived to have spread the disease as a result of (politically or economically motivated) concealment. Of particular interest is how the New Zealand public learnt about avian influenza, and how they made a risk assessment about it.

In terms of research for this thesis, knowledge gained is regarded as situated and indeterminate because the categories that people employ in helping them to understand the natural and social world are in fact social products; that is, their meaning is constructed in and through interaction. Explanation for findings arising out of this exploratory research is undertaken 'with reference to the interpretive understanding of social action, rather than to external forces that have no meaning for those involved in that social action' (Bryman 2004:13). Social constructionism implies an active rather than a passive process, and it describes the process of meaning-making where individuals construct their own mental models that enable them to make sense of what they see happening around them, in other words, that the 'real' world can be a different place for each person.

A key feature of this theoretical approach is the recognition that social constructionism considers that language is constantly changing and varied in its meanings, and that people's understandings of their world are shaped by their ways of using language. Sociolinguist Deborah Cameron describes this understanding of reality as discursively constructed, meaning that 'reality is made and remade as people talk about things using discourses they have access to' (Cameron 2001:15). Lemke (1995) defined discourses as 'a social activity that makes meanings with language...in some particular kind of situation or setting' (p.6). As philosopher and theorist on the history of ideas Michel Foucault argued, discourse constructs the topic; it defines and produces the objects of our knowledge and governs the way that a topic can be meaningfully talked and reasoned about. More than just ways of thinking and producing meaning, discourses are a way of incorporating knowledge; they constitute the 'nature of the body, unconscious and conscious mind and emotional life of the subjects they seek to govern' (Weedon 1987:108). Discourses can both constrain the production of knowledge and enable new knowledges and differences.

The methodology for the newspaper portion of the research for this thesis is based on methodology used in a similar study carried out in 2007 by three researchers in the United States who, using the concept of quality, assessed the U.S. media reporting of avian influenza (Dudo et al. 2007). Media influences, such as the way a story is framed and the types of news stories used, were also investigated. The methodology for my research used similar (but not identical) measurables as the U.S. paper and the differences between the two methodologies will be discussed in further detail. Through an analysis of discourses of risk and contagion arising out of the analysis of newspaper articles and focus group transcripts, I sought to understand how the media have contributed to health and disease discourses about avian influenza.

NEWSPAPER ARTICLES

Rationale

The content analysis was based on a similar method used by Dudo, Dahlstrom and Brossard in their 2007 article 'Reporting a Potential Pandemic: A Risk-Related Assessment of Avian Influenza Coverage in U.S. Newspapers'. However, as the research for this case study developed, several main differences in emphasis emerged, and as such the research methods used were similar but not identical to the methods used in the U.S. study. Dudo et al. utilised, as an overarching criterion, the concept of quality and chose to explore this with a five-dimension conceptualization that included variables of risk magnitude, self-efficacy, risk comparison, sensationalism and episodic and thematic framing. They underpinned their analyses with two assumptions: first, that in order to understand public perceptions of risk related to avian influenza, an assessment of the quality of risk-related information in newspapers was necessary and second, as McCombs and Reynolds (2002) describe, intermedia effects were likely.

Dudo et al. based their analysis on a content analysis method used by Roche and Muskavitch (2003) in their assessment of the West Nile virus outbreak in 2000. Unlike the U.S. paper, this thesis' approach to the analysis was exploratory, so there were no overarching assumptions of quality or efficacy; nonetheless, the five-dimension conceptualization, with similar variables, was utilised. Content analysis has some drawbacks, in that it only captures a snapshot in time, can be prone to subjectivity and is very time consuming. Nonetheless, I believe it to be a thorough way to analyse the avian influenza articles, as I could gather data over the entire 6-year period, identify trends and observe broad patterns. I am cognisant that by only looking for variables I am coding for, there is a potential for missing other possibilities, and the capacity to take sentences out of context. However, being aware of these issues will go some way towards mitigating these issues, and as content analysis combines both qualitative and quantitative processes, I believe this approach will enhance the depth of analysis and quality of results.

Dudo et al. chose a date range that spanned six years and this thesis does the same. For reasons not yet understood by this researcher, the majority of avian influenza stories appeared in the New Zealand press between 2002 and 2008, not between 2000 and 2006, as in the United States. Therefore, the date range chosen was January 1, 2002 to January 31, 2008. Articles included were those with a word count of over 60 words which eliminated the 'briefs'.⁶⁶ The U.S. research restricted their count to over 175 words, to 'ensure that there was sufficient avian influenza content' (Dudo et al. 2007:439). I think that even news stories that are relatively short will be noteworthy for precisely what they do not say, and for the discourse upon which they drew, so for these reasons this aspect of the U.S. research was not replicated.

Preliminary pilot

The Dudo et al. study looked for examples of sensational language and established a list of words they called 'loaded'. It was important for my research that the criteria for deciding what was meant by 'a loaded word' were clear. I decided that the criteria for evaluating words or phrases as 'loaded' or 'not loaded' would be the same as described by Friedman et al. (1987) and Dudo et al. (2007), that is, words that constituted 'emotionally charged language'. In order to establish if the list of words used by Dudo et al. was sufficient for this study, or whether the list needed to be added to from New Zealand examples, a preliminary pilot was run using articles about an outbreak of the highly contagious norovirus in a Dunedin hospital between 06 August and 01 September 2008.

⁶⁶ Items that are short summaries rather than larger stories, and are usually between 20 and 60 words.

Using the Factiva⁶⁷ database, 31 articles about the norovirus outbreak printed in *The Dominion*, *The New Zealand Herald*, *The Press*, *The Otago Daily Times* and the *Sunday Star Times* were coded for loaded words, loaded phrases and worst-case scenarios. These words were evaluated for the criteria of emotionally charged language by two independent observers familiar with the premise of the research. Words the same as the U.S. article were ignored, but loaded words, loaded phrases and worst-case scenarios words that were different and were deemed useful and relevant were compiled for reference and as a guide.

Avian influenza pilot

Ten avian influenza articles were randomly selected from 261 articles (see selection process below), to establish whether the coding schema designed from that of Dudo et al. was appropriate and sufficient to satisfy the objectives of the case study. These 10 articles were coded according to the method described by Dudo et al. and as a result, several changes were made to the final coding schema.

I decided that in addition to Dudo et al.'s coding categories, there was value in coding for whether the article tried to educate the reader by reporting scientific information, and the context in which 'other risks scenarios' and references to 1918 were reported. A variable of 'content' was added to establish whether the story was predominantly about New Zealand or overseas interests, as I was interested to see whether 'content' made any differences in the way the avian influenza was portrayed.

Dudo et al. assessed each paragraph for its framing: episodic,⁶⁸ thematic,⁶⁹ mixed or neither and I intended to use the same method for the analysis of the newspaper data. However, when the avian influenza newspaper articles were printed from the electronic database 'Factiva', they printed off in such a way that the paragraphing was far from clear. When the pilot study was conducted, the articles were analysed for framing in two ways: firstly, the articles were subjectively divided into paragraphs; the variables were coded for and the framing assessment (episodic or thematic) was made. The second method used a colour-coding schema:⁷⁰ warm colours coded variables denoted that an episodic framing had been used, and cool colours coded variables denoted thematic framing. The entire article was then visually assessed to see whether 66 percent or more of the total coded words were representative of either an episodic or thematic frame. The results from using both the subjective paragraph and colour coding methods were compared, and as there

⁶⁷ Factiva.com is a global news and business information service that combines the content sets of Dow Jones and Reuters. Over 10,000 leading news and business publications from around the world are available, including foreign language content. The collection includes newspapers, journals, newswires, Web sites, pictures and company reports, including charts and graphs (<http://library.canterbury.ac.nz/databases/factiva.shtml>).

⁶⁸ Episodic: news stories that present single, specific event-driven matters which are reported in emotive and sensationalist language

⁶⁹ Thematic: news stories that combine incidents into a central theme, and that also put the issue into a general context

⁷⁰ see Appendix I for colour-coding exemplar

appeared to be no substantive differences between the outcomes for each method, I chose to evaluate the avian influenza articles using the colour-coding method.

Newspaper article method

The print news stories came from four regional daily newspapers based in New Zealand's four largest cities: *The New Zealand Herald*, Auckland; *The Dominion*, Wellington; *The Press*, Christchurch; and *The Otago Daily Times*, Dunedin. These newspapers reach the majority of New Zealand's news-reading public, with a combined readership⁷¹ of 1,734,000 and circulation of 638,172.⁷² Importantly, these four newspapers represent three different media publishing companies; Fairfax Media, Allied Press Limited and APN News Media. This is an aggregate analysis of all four newspapers and each newspaper story comprises a unit of analysis.

Articles were collected from the electronic news media database Factiva using the search keywords '(avian or bird) and flu' for the period 01-01-2002 to 31-01-2008. The inclusion of the term 'H5N1' resulted in only 5 articles, in which the words 'bird flu' already appeared, so for this reason H5N1 was not used in the search criteria. The original search resulted in 953 articles. Articles less than 60 words, editorials, opinion columns, duplicate articles from multiple editions of the same newspaper on the same day and articles that were not primarily about avian influenza were excluded (n = 445).

Stories about issues not directly related to avian influenza (n = 133) and articles that had two or less code-able variables (n = 114) were neither counted nor coded as an avian influenza article, but were still included for the thematic analysis. This was because they highlighted many issues around avian influenza that concerned different groups in the New Zealand community and showed how the New Zealand media represented the threat of avian influenza. The final number of articles selected for coding was 261. This number was considered to be adequate for comparison purposes to the U.S. case-study, which coded 360 newspaper articles in total. The 261 articles were coded for a total of 21 variables including emotionally loaded words, phrases and worst-case scenarios, use of risk comparisons such as SARS, Hong Kong Flu and the 1918 influenza pandemic.

Coding

As described by Friedman et al. (1987) the variables of loaded words, phrases and worst-case scenarios give a good indication of the level of sensationalism in each news story. Examples of words agreed upon to be 'loaded' included: 'devastate', 'vicious', 'blitzed', 'rampage' and 'villain'. In the Dudo et al. paper, the word 'pandemic' was not coded as a loaded word, however, for this study, if it was used in a phrase like 'could trigger a global

⁷¹ Readership is defined as an estimation of how many people in each household will read the paper and for the newspapers accessed for this thesis, this number is 2.5.

⁷² <http://www.nzpa-online.co.nz/statistics.php>

pandemic' it was coded as a worst-case scenario.⁷³ Loaded phrases⁷⁴ were evaluated in the same way and included phrases such as 'wreak havoc', 'not able to cope', 'super-contagious', 'killer-disease' and 'cut a swathe'. Worst-case scenarios were variations of the scenarios mentioned in the Dudo et al. paper but if events seemingly less dire were preceded by the words 'worst case scenario', these events or predictions were coded as an example of a worst-case scenario. These included 'close New Zealand's borders', '200 children made orphans', 'stop tourism for months on end' and 'at the mercy of the killer disease'.

Placement of loaded words, phrases and worst-case scenarios were coded to see whether they appeared in the headline, first four sentences, elsewhere (or if they did not appear at all), as research has shown that a reader's understanding of a news issues can be skewed if certain types of information and not others, consistently appear in the first few paragraphs of an article.

Risk-magnitude information⁷⁵ was evaluated using three variables: qualitative⁷⁶ and two categories of quantitative⁷⁷ information. The quantitative information was divided into information that did or did not use a contextual denominator⁷⁸ (Roche and Muskavitch 2003); for example '250 people died' as opposed to '1 percent of 2,500 (or 250 people)' died. Both qualitative and quantitative risk-magnitude information, quantitative with a contextual denominator and quantitative without a contextual denominator were evaluated the same way: major if it appeared more than the other, minor if it appeared less and minor if it appeared the same. There was also a coding value of 'did not appear'.

Self-efficacy information was coded as a thematic variable and included symptom information⁷⁹ and personal protection information.⁸⁰ An example of symptom information is 'people will feel very unwell, with headaches and severe congestion' and examples of personal protection information are 'wash and dry hands thoroughly' and 'keep the room well ventilated'. Dudo et al. coded both these variables as major or minor, but this schema meant that a variable could be coded as minor even when it did not appear in the article at all. So I chose to code these two variables as 'present' or 'not present'.

A third self-efficacy variable was added: that of the public understanding of science. The public understanding of science underpins a large part of the theoretical approach for this thesis, so for this reason I decided that this was an important variable to measure. Therefore, if an article attempted to educate the reader with research or

⁷³ Worst-case scenarios - use of the most extreme negative outcome

⁷⁴ Loaded phrases – phrases that evoke an emotional response

⁷⁵ Information about how likely it is that individuals could contract, or become ill and die from avian influenza

⁷⁶ Qualitative risk magnitude information: words that describe risk: for example 'a threat of' or 'possibly a risk of'.

⁷⁷ Quantitative information: use of numbers to convey meaning.

⁷⁸ Number, percentage or other information that is used to put the news story, in particular fatalities or casualties, in context

⁷⁹ Information that describes how readers can evaluate if or when they may have been infected with avian influenza and when or how to get medical help

⁸⁰ Information on how readers can protect themselves against, or have control over, contracting avian-flu

medical knowledge about avian influenza, or used scientific language, it was evaluated as P.U.S (Public Understanding of Science) and then colour-coded as 'thematic'.

One example is:

When a new variant emerges the virus is said to have drifted. The shift to a new strain happens when a group of genetic mutations combines to produce a virus with new properties (The Press, 23 July 2005)

Risk comparison information,⁸¹ similarly to the Dudo et al. paper, coded references to the Spanish flu separately to other risk comparison. References to other risk scenarios, (SARS, past influenza outbreaks, earthquakes) and references to 1918 Spanish influenza pandemic were coded as thematic. However, when reading many of the avian influenza articles, it became evident that these risk comparison references could be interpreted as 'hyping up' the threat possibility, or depicting avian influenza as a worst-case scenario. For this reason, a 'context' variable was added that asked the coder to subjectively assess (by reading the reference *in context*) whether risk comparison references were reported in a thematic or episodic way. This added to the overall 'thematic' or 'episodic' assessment of the articles. The episodic and thematic assessment of the articles were coded as detailed in the pilot. Finally, articles that had two or fewer coded words were assessed as neutral, because evaluating whole articles as thematic or episodic, based on just two appearances of a variable, was not compelling evidence of a media frame.

Reliability testing

Two independent coders were used to assess inter-rater (or inter-coder) reliability.⁸² A random sample of 10 percent of the overall articles⁸³ were selected using a random integer generator.⁸⁴ Coders read the Dudo et al. paper and were trained to use the coding schema; they coded independently of each other and myself. Kappa for nominal data between multiple raters was used to calculate the inter-rater reliability which resulted in a reliability score of .722. This is an acceptable level of reliability where .41-.60 is considered a moderate agreement, .61-.80 a substantial level of agreement and over .80 is regarded as outstanding (Landis and Koch 1977).

⁸¹ Information that compares the likelihood of contracting avian influenza with other health risks.

⁸² Inter-coder or inter-rater reliability or agreement, is a widely used term for the extent to which independent coders evaluate a characteristic of a variable and reach the same conclusion.

⁸³ 26 from total of 261 articles

⁸⁴ <http://www.random.org/integer/>

FOCUS GROUPS

Rationale

The second research method used the focus group technique as a method of generating spoken data. Focus groups are, in general, more exploratory and less structured than group interviews, tending to concentrate on the interaction between participants and the ensuing development of ideas.

The reason for using focus groups for this research was to explore general perceptions, feelings and opinions relating to personal risk, health reporting and influence of the media and to discover what social constructs and common understandings are drawn upon when assessing health risks. It was hoped that participants would share anecdotal stories of personal reactions to the spectre of an avian influenza pandemic and that group discussions would be as unstructured as possible with the researcher acting as a facilitator. Of interest was how the concepts of illness, risk and contagion were constructed by the group as they discussed the issue.

Composition

Each of the four focus groups had between five and eight participants⁸⁵ excluding the facilitator. Participants were recruited through identifying and approaching people who were interested in taking part in a focus group on the topic of avian influenza and were made up of 'general population groups'.⁸⁶ For convenience, I approached people whom I knew personally in the first instance, asking them for further contacts who they knew through their own personal social network, a participant-recruiting technique called snowballing. This method worked well, resulting in participants drawn from four general population groups: work colleagues, friends from university, friends outside university and family. The participants did not represent a diverse educational group, being mostly (but not exclusively) tertiary educated.⁸⁷ In terms of gender, the focus groups were predominantly female. It was not readily apparent this changed the content of the discussions, especially regarding access to, and opinions about, the media. However, an argument could be advanced that the gender composition influenced the way that the groups talked about and evaluated the threat that H5N1 posed. The gender variable therefore, is something that, should I run focus groups in the future, needs to be considered.

It is probable that because most of the participants were tertiary educated, the way that they thought about the topic presented to them, and the way they expressed their ideas and views would be different from other groups with a different educational

⁸⁵ Focus group (FG) 1: n = 5, FG 2: n = 6, FG 3: n = 6 and FG 4: n = 8.

⁸⁶ Groups of people from a variety of different situations

⁸⁷ See Appendix VIII for description of age, ethnicity and gender.

composition. Whilst this may have been a problem for research requiring more broadly representative data, for the qualitative component of this research, the emphasis of my research lay in understanding how the groups constructed the issues of risk communication during their discussions. There was no effort made to divide or arrange the focus groups by any specific criterion; for example, by gender, ethnicity, economic or educational considerations. Neither did I consider familiarity with each other or the facilitator to be a constraint. In fact, familiarity with the facilitator, location and at least one other person in the group was a deliberate strategy, as research has shown that groups of people who know each other interact more naturally and discuss topics more easily than groups of people who do not know each other (Kitzinger 1994). The participants were all based in Christchurch, and although the analysis of media coverage showed that there was slightly more press coverage in Christchurch than in Wellington and Dunedin, it was not considered to be a biasing influence.

Location and Preparation

For familiarity purposes and because of limited time and resources, the four focus groups were held in the facilitator's home, during two weeks in November 2008. These focus groups, although semi-structured, resembled a coffee evening rather than a meeting-room type environment, with the location and structure of the meetings allowing for a relaxed atmosphere and easy interaction. The focus groups began at 7.30pm with participants offered refreshments, and at the end of the discussions, supper was offered and most participants chose to stay and chat informally.

Each group was asked to read an information sheet⁸⁸ and to complete a consent form that had been approved by the Human Ethics Committee. It was explained that the session was being recorded, and it was reiterated that they could withdraw at any time and have access to the finished data. In order to begin the discussion and to focus the participants on the topic, a 'cue' article was given to participants to read at the beginning of the discussion.⁸⁹ It was explained to the group that the purpose of this article was to familiarise them with how the avian influenza was reported, in order to possibly 'jog' their memories in terms of what they may have thought or read over the past few years. It was also explained that this was an actual article (not a composite), one of over 400 articles found by the facilitator during her research. This article was chosen as it included many of the variables that were of interest for the research and was neither overly sensational nor solely scientific. Time was allowed for the participants to read the article, and then the facilitator asked a previously prepared opening question.

⁸⁸ See Appendix VI

⁸⁹ Bird Flu could kill 150m, says UN', 01 October 2005, New Zealand Herald. See Appendix III

Questions and prompts for the group discussion had been composed in order to allow as much open-discussion without 'leading' or 'priming' the participants.⁹⁰ The opening question was 'So, do you remember when you first heard about bird flu, and what you thought about it?' The groups were then free to talk about it in any way they wanted, with minimal input from myself. The session began and the discussions lasted 52 minutes, 58 minutes, 1 hour and 8 minutes and one hour and 31 minutes respectively. There were no strict guidelines for discussion and whatever the groups decided to talk about was acceptable and encouraged; however, the groups seemed to self-regulate and almost without exception, kept on topic. As the facilitator, I spoke very little, and was able, within the groups' natural discussion, to ask all the questions I had prepared.

The Data

It is important to stress that the transcript of the group session was analysed for what was said, not *how* it was said. This distinction is made here because there are many ways to transcribe spoken data, from linguistic analysis of spoken syntax that documents in fine detail: for example micro-pauses, intakes of breath, multiple uses of symbols to denote speaking order, interruptions or speed, to a more functional approach, that is more interested in 'how language communicates when it is used purposefully in particular instances and contexts' (Cameron 2001:13). The context in which these discussions took place cannot be ignored; the participants knew what the discussion topic was prior to the group meeting and they also knew that it was important that the subject was taken seriously enough to be discussed in a meaningful way so that it could be transcribed and used for a post-graduate thesis.

Does this mean that the data gathered was in any way 'less authentic' than if the data had been gathered from people talking spontaneously? It is something I have considered however, in privileging 'ordinary talk' over talk that has been 'manufactured' for research purposes, an assumption must be made that one sort of talk is more natural than the other. Whilst acknowledging that all talk is shaped by the context in which it is produced, Deborah Cameron (2001) in *Working with Spoken Discourse* states that she does not think that 'anyone has shown convincingly that the talking research subjects do in a laboratory is a different thing from "normal" talk' (p. 20).

Transcription

Firstly, the focus group session was listened to in its entirety to gain a sense of the whole. Commonality between the different groups was noted, for example, what was talked about first; in each focus group without exception the same feature from the cue article was mentioned by the first speaker. In transcribing the recorded data, I had to make a decision

⁹⁰ For full list of questions and prompts see Appendix IV

about the way I would do this, and once again there were no set rules. I decided to transcribe only those things that I wished to examine, so narrative and text were more important than pauses, tone or exact reproduction of speaker order. For example, if several people spoke at once, and it was largely unclear who was saying what, I transcribed that as [overtalking], but if one voice made a clear statement within that multiple talk, then it was transcribed as the next thing someone said.

As in Cameron's research, I was more interested in the text than in the finer points of spoken interaction, hence 'there was a clear trade-off between accuracy and detail on one hand and readability on the other' (Cameron 2001: 39). Having stated that, however, the accuracy of what is said is as close to the original recording as possible, with small changes for ease of reading such as transcribing 'and', instead of 'n', and making a judgement call as to whether to notate a full-stop or comma. In some but not all instances, repeated words or 'filler' words such as 'um', 'er', 'ah', 'you know', 'sort of', and 'I mean' were not transcribed.⁹¹

Analysis

The analysis of the focus group data was transcript-based, using textual analysis. Using an interpretive approach, ideas that emerged out of the narrative were identified and categorised. Kvale (1996) calls this 'meaning condensation' or interpretation, where the context for interpretation of a statement may be provided by the entire focus group discussion (p.193). These emergent ideas were further categorised into themes, sub-themes, narratives and discourses. During the transcription, 'units of meaning' were identified in as simple terms as possible, for example: themes of risk, or preparedness or scepticism. With respect to the purpose of this thesis (that is to explore themes of risk communication, media conventions of reporting and public perception of health risk messages), the transcribed data were analysed initially through the 'filter' of these themes and then further analysed for any other ideas. This formed the initial 'pass' of the data.

A flow chart was compiled from the ideas where groupings and connections were made between the various themes and sub-themes, depending on how they related to the aims of the thesis. The transcribed data was analysed by systematically reading each participant's contribution line by line. Using 'copy and paste' for any conversation that pertained to any one or more of the headings and subheadings, these excerpts were copied in and under that heading. This was done for all four focus groups. The results of the subsequent analysis are discussed in Chapter 6.

⁹¹ The conventions I used when transcribing the focus groups can be found in Appendix II.

5. ANALYSIS: NEWSPAPER ARTICLES

INTRODUCTION⁹²

The analysis of the newspaper articles used two different methods: the first was a content analysis of the New Zealand newspapers reporting of avian influenza between 2002 and 2008 that compared the results with a similar study carried out in the United States by Dudo et al (2007). The aim was to identify the dominant frames that the New Zealand newspapers used to report the health risk of avian influenza: either episodic, which is an event-orientated frame which uses language tending towards the sensational, or a thematic frame. This frame is more generalised and provides useful information about the issue; for example in reference to avian influenza, providing symptom information and ways to protect oneself. Additionally, in using thematic framing to report avian influenza, the threat event may be situated within a wider context and reference past health events.

The second method was a textual analysis that explored emergent themes, topics and interpretive frames that represented the way that health risk of avian influenza was reported. One of the reasons for a textual analysis approach was to understand how the risk of avian influenza was constructed by the New Zealand media, so that, observations could be made about similarities or differences. The body of text used for the textual analysis contained more articles (n = 508) than in the content analysis (n = 261).

A clarification of the word 'thematic' used in this chapter is important. In reference to media framing, 'thematic' refers to an interpretation of Iyengar's (1991) exegesis on framing, where articles can be said to be 'thematically framed' when they predominantly present issues in a factual, contextual and situational manner, give self-protection and/or self-efficacy information and include the provision of scientific and medical information. The textual analysis in the second section of this chapter used the word 'thematic' to mean themes, topics or ideas and was concerned with societal implications, historical trends and in terms of the reporting of avian influenza, the contextualization of the threat with regard to avian influenza in reference to other health events.

⁹² The analysis chapters, 5 & 6, will not use indenting to denote paragraphs. This is because these two chapters make extensive use of indented excerpts. This also clarifies whose voice is being used.

CONTENT ANALYSIS

Coverage

The U.S. case study selected news stories from four newspapers: the *New York Times*, *Washington Post*, *Los Angeles Times* and *Atlanta Journal-Constitution* describing them as urban newspapers with high circulations. Similarly, this thesis chose four New Zealand urban newspapers with the four highest circulations: the *New Zealand Herald*, *Dominion*, *The Press*, and *Otago Daily Times*. The New Zealand papers are much smaller however, and a comparison can only be made with caution.

Despite avian influenza being in the world public arena since 1997, the search for newspaper stories found very little New Zealand press coverage until 2005. Media reports about avian influenza and its predicted effects began with just one story in February 2002, increasing to the highest incidence of reporting with 189 articles, in 2005.

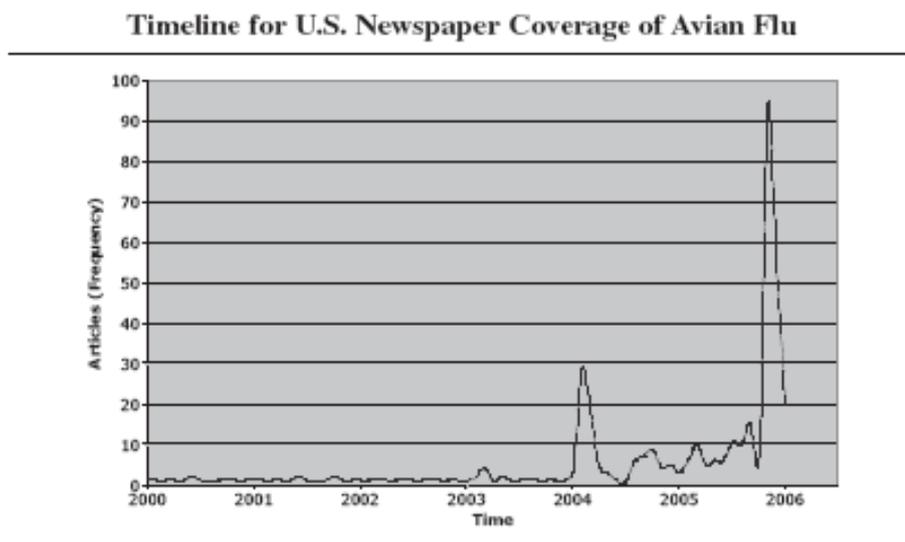


Figure 2: Frequency of H5N1 articles in U.S. media (Dudo et al 2007:442) Used with permission.

This reporting period is different to the U.S. study (Dudo et al. 2007) which analysed articles printed in four main U.S. newspapers beginning in 2000 and concluded in 2006. As no articles about avian influenza were found in the NZ media preceding 2002, I chose to analyse a six-year period (as the U.S. study did), but I used articles printed between 2002 to 2008. Figure 1 (above) shows the frequency of reporting about avian influenza in the U.S. and shows two peaks of increased reporting.

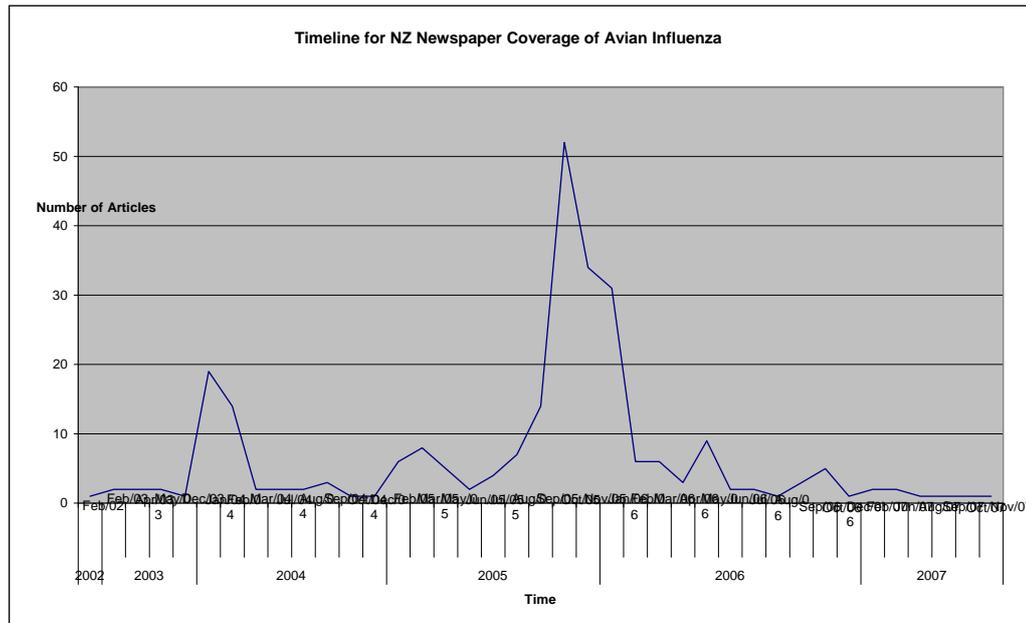


Figure 3: Frequency of H5N1 articles in NZ media

Figure 2 (above) shows the frequency of reporting for New Zealand articles over the six-year period and highlights a marked increase in flu-related stories in mid 2005. The graph also shows peaks of increased reporting (2003 and 2005) which mirrored similar peaks (2004 and 2006) in the U.S.

However, the New Zealand peaks occurred *earlier* than in the US reporting. It is possible that the New Zealand media are more responsive to overseas events? (Fig 7), or that the 'Issue-Attention' cycle (Downs 1972), manifested itself in different ways in New Zealand from the U.S. It appears that the 'pre-problem' stage in the U.S. was much longer (4 years) than in New Zealand (1 year). In terms of Sandman's (2005) adjustment reaction, the New Zealand media appeared to react more quickly to overseas reports of avian influenza events, and then it settled down into the 'new normal' sooner than in the U.S. This finding is puzzling and demonstrates that even though there seems to be some correlation between the reported cases and resultant deaths from avian influenza (Fig 5), there are many factors that shape why some news is reported. Although there are similarities between the two graphs that show similar tracking by the media of the reported death toll from H5N1, exploring the reasons for these factors is outside the scope of this thesis.

Between January and December 2003, there were only 8 articles about avian influenza printed in New Zealand newspapers: one from *The Dominion Post* and the remaining seven from *The New Zealand Herald*.

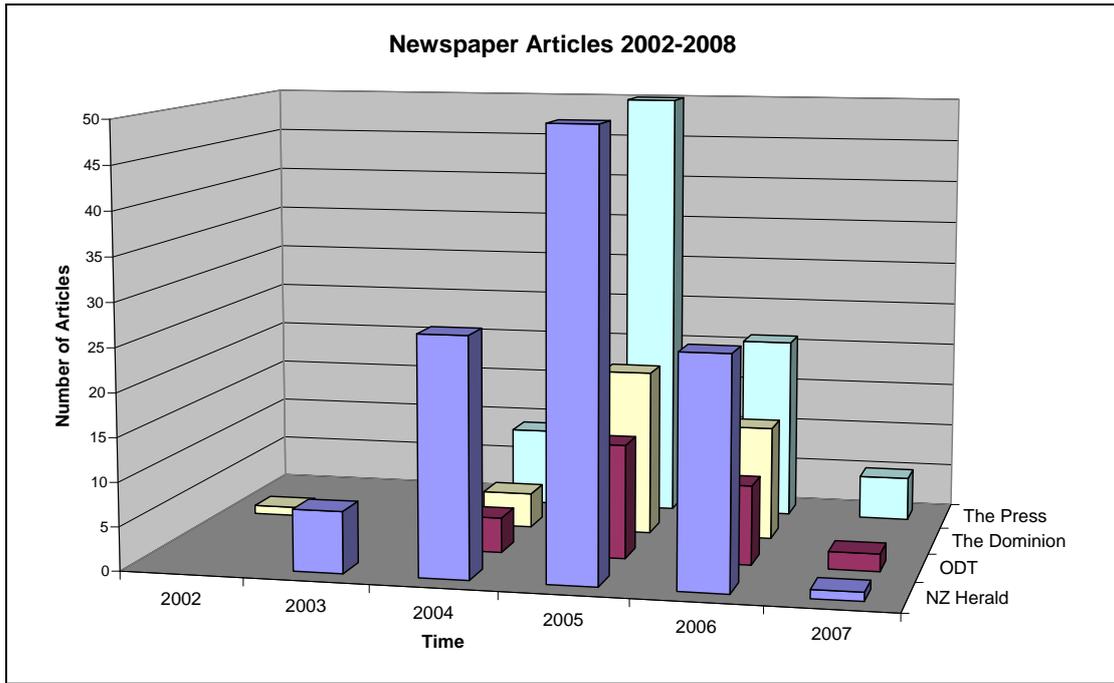


Figure 4: Articles printed in NZ four major newspapers 2002 - 2008

The 2005 peak in reporting in all newspapers broadly reflects media response to the rise and fall of infections and deaths from contracting the H5N1 virus. In the 6 years following 1997, there had been just 7 avian influenza-related deaths, but beginning in early 2004 and within a few months, 43 people had been confirmed as dying from the H5N1 virus.

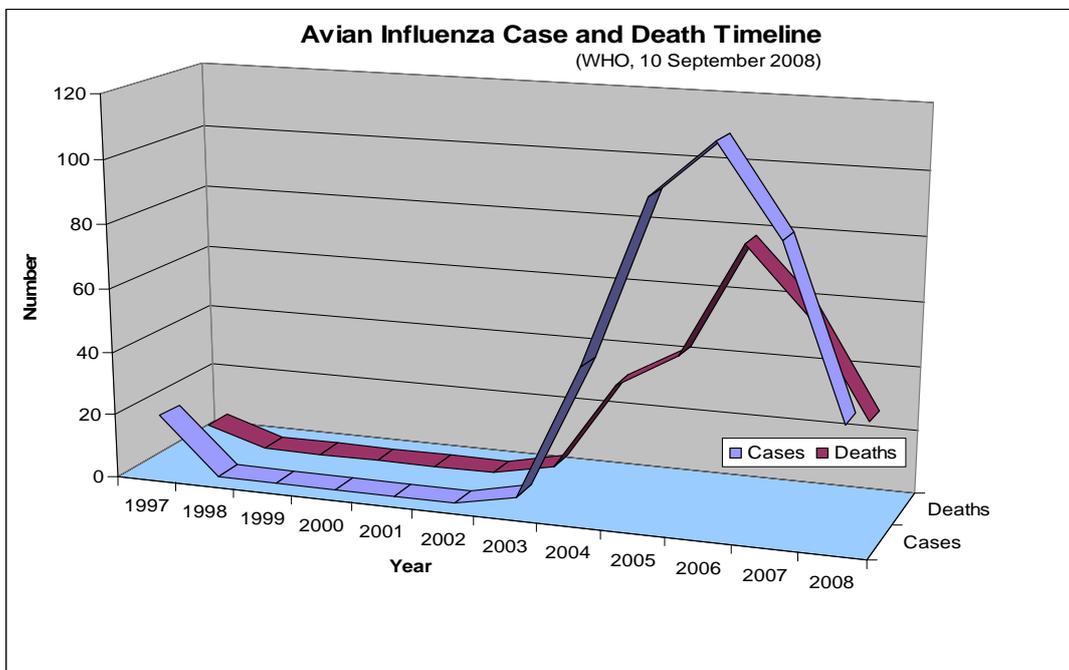


Figure 5: Number of H5N1 cases & deaths worldwide by year 1997-2008

Figure 5 above shows both the number of reported cases and the number of reported deaths worldwide from avian influenza, beginning in 1997, when the first cases were reported in Hong Kong, through to 10 September 2008.

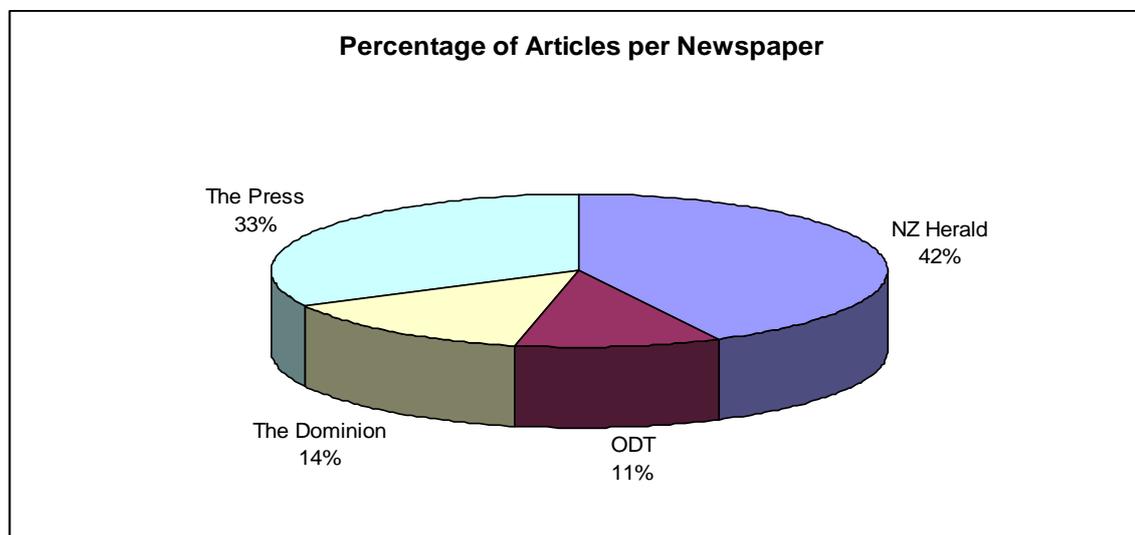


Figure 6: Percentage of H5N1 newspaper stories per newspaper 2002-2008

Overall, *The New Zealand Herald* printed the most avian influenza-related stories ($n = 111$ or 42.5 percent), followed by *The Press* ($n = 85$, 32.5 percent), *The Dominion Post* ($n = 37$, 14.1 percent) and *The Otago Daily Times* ($n = 28$, 10.8 percent). The high percentage of reporting about avian influenza from *The New Zealand Herald* is most likely because this paper has the largest international section of the four newspapers. The results of individual newspaper coverage of avian influenza show that there is variability between newspapers, and demonstrates that there are idiosyncratic decisions that influence which stories are printed.

Interestingly, *the Christchurch Press*, not the Wellington-based *Dominion Post*, had the next highest percentage of avian influenza articles. Wellington is the next largest city to Auckland and the capital of New Zealand where governmental issues are represented strongly. Considering that many of the articles voiced governmental concern and action about avian influenza, it is perhaps an unexpected finding that the *Dominion Post* printed less stories on avian influenza than *The Press*. It is difficult to know why there were differing amounts of coverage by each newspaper as there are many things that determine whether a story is printed; for example, differences may be due to external forces, such as what is happening in New Zealand at the time, or institutional and editorial dynamics of format and available space.

Placement and Word Length

The majority of articles were printed in the first section of each newspaper; the exceptions were a few stories that appeared in a separate 'Health' or 'Business' section of the newspaper. The Factiva database did not provide the origin of the story (whether the story was sourced from an external agency or syndication service or written in-house, or a mixture of both), so this aspect of the articles was not analysed.

Ninety-six percent of all stories were between 100 and 1000 words, with 17 articles consisting of more than 1000 words. The longest article was 2222 words and the shortest 66 words; the average length of a news story was 530 words. The *New Zealand Herald* printed 53 percent of the longer stories, and articles over 1000 words were evenly spread over the six-year period. The average length of the U.S. articles was 766 words, the difference possibly reflecting the size of the respective newspapers as well as the more specialised roles of the U.S. journalists.

Content

The majority of stories about avian influenza in the New Zealand sample related to New Zealand content (59 percent), with just under a third of all stories (29 percent) relating to overseas concerns. Content that reported avian influenza in both a New Zealand and overseas context appeared in 13 percent of articles. In the first three years that avian influenza threat was reported, for every story containing New Zealand content, there were five stories with overseas content.

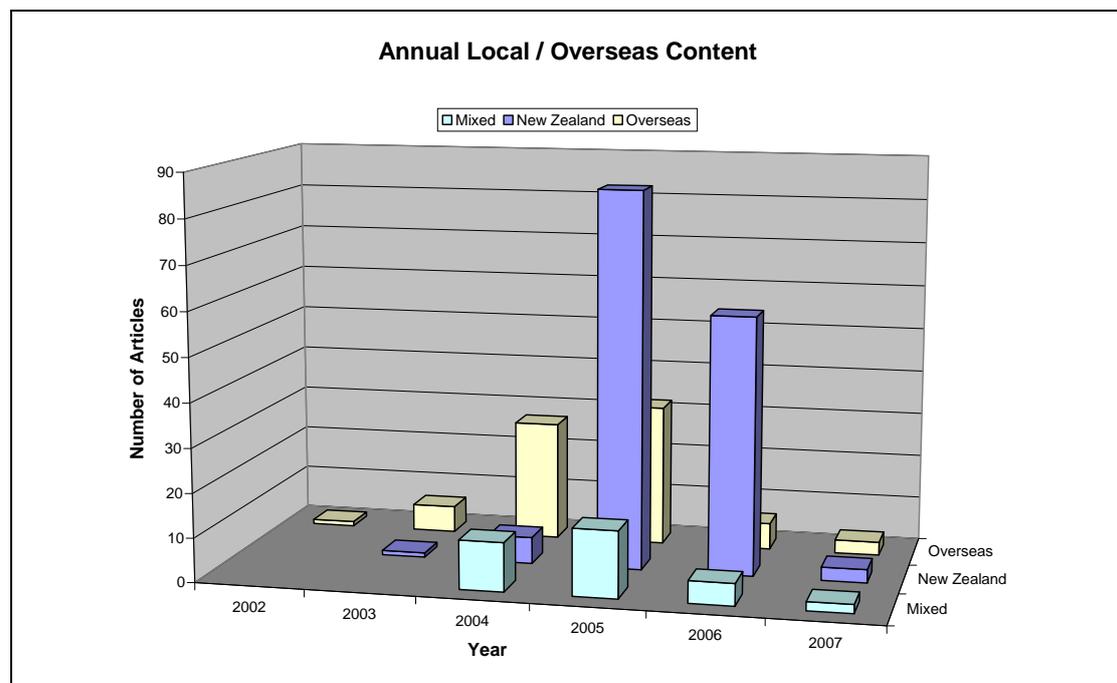


Figure 7: Comparison of content of NZ newspapers – Overseas, NZ & Mixed

However, at the peak of reporting (2005), New Zealand content was more prevalent (65 percent) than overseas content (31 percent), and by 2007, overseas, New Zealand and mixed content were equally represented. During the first half of the reporting period, 60 percent of reporting was primarily overseas content. From January 2005 to July 2006, this content had dropped to just under 20 percent, and in the last quarter, 81 percent of articles had mostly New Zealand content. Over the entire reporting period, (2002-2008), under three-quarters of stories had news content coded as New Zealand and mixed (containing some New Zealand content). Avian influenza clearly began as an overseas story, becoming localised from January 2005 onwards. This change from stories that framed H5N1 as an overseas problem to one which could impact and affect all things related to New Zealand, paralleled the progression from episodic to thematic framing (see Fig 17).

Risk Magnitude information

In total, qualitative (descriptive risk estimates) and quantitative (numerical) estimates of avian influenza-related risks appeared in 74 percent of New Zealand stories and 77 percent of U.S. stories. A story printed in the New Zealand media in February 2004, demonstrates how risk magnitude estimates are used to describe the avian influenza: 'highly pathogenic', 'particularly vicious' and 'potentially dangerous'. Quantitative examples include 'six more outbreaks', 'killed 14 people' and 'death toll hits 19'. Qualitative estimates appeared less frequently by a factor of less than half, with a major presence in 21 percent of the stories and a minor presence in 53 percent. Mirroring the results of the U.S. paper (where quantitative risk estimates outnumbered qualitative estimates), quantitative estimates appeared more often, with a major presence in 45 percent of the stories and a minor presence in 29 percent.

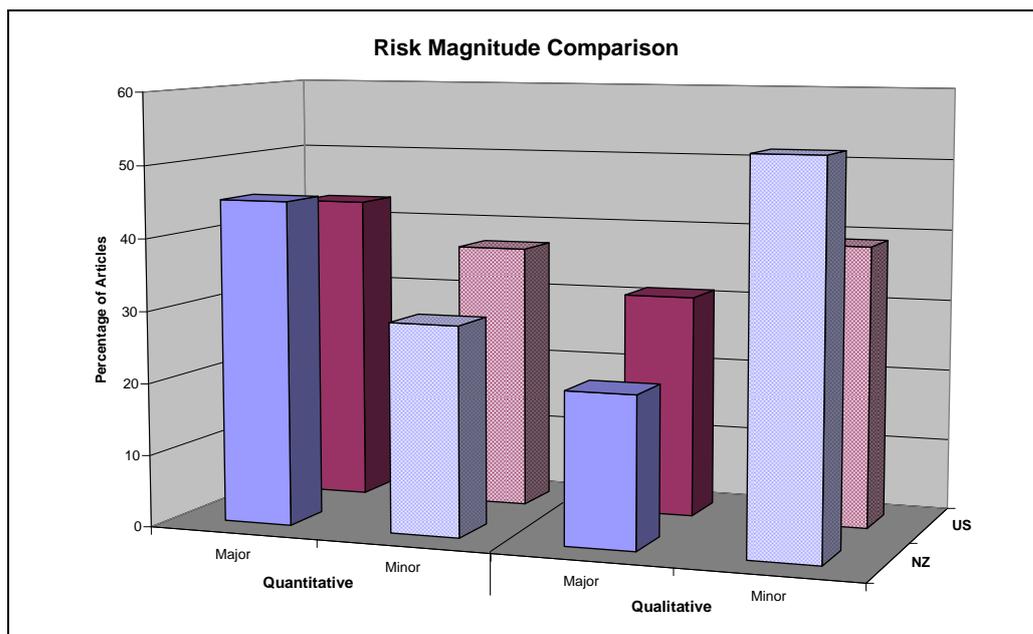


Figure 8: Risk magnitude NZ & U.S. comparison

Whilst the major and minor presence of quantitative and qualitative variables differ between the New Zealand and U.S. results, what is important for purposes of comparison is the *similarity* in the major/minor ratio (see Fig 8 above). For both New Zealand and U.S. results, it is clear that the minor/major ratio is very similar; in other words, the media, in both the U.S. and New Zealand, reported the potential risk from avian influenza in terms of numbers (deaths and/or predicted deaths) rather than with the use of descriptive language.

Contextual Denominators

Sixty-seven percent of articles contained quantitative risk information: 28 percent *with* a contextual denominator and 39 percent *without* a contextual denominator. These results were similar to those of the U.S. newspapers with 60 percent of articles containing quantitative risk information; 31 percent *with* a contextual denominator and 29 percent *without*. The number of stories that presented equal amounts of quantitative risk information (with and without contextual denominators) was 10 percent for both New Zealand and the U.S.

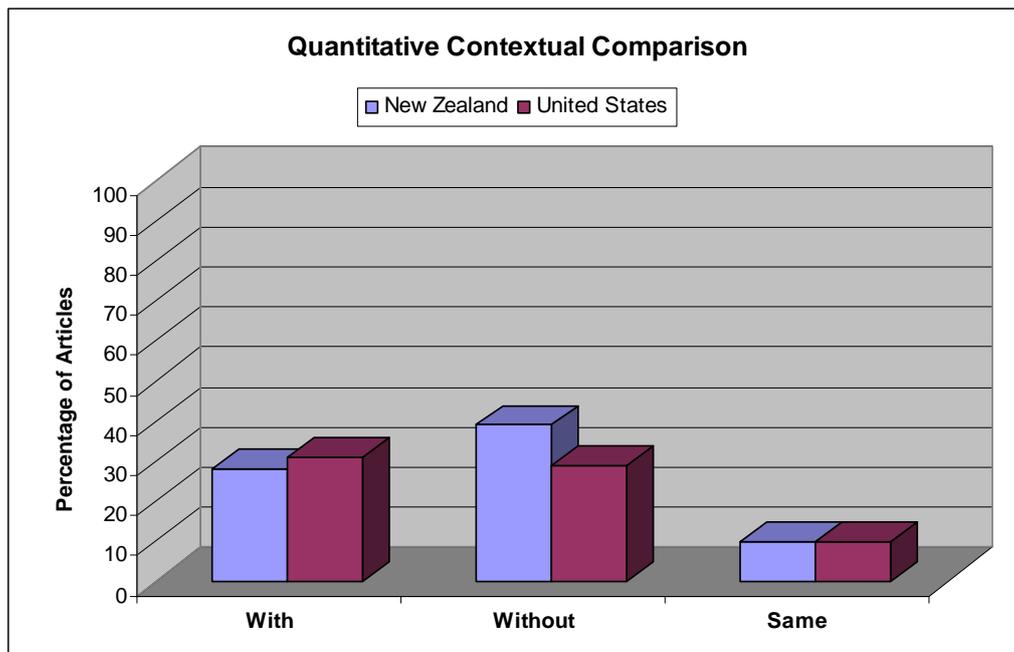


Figure 9: Quantitative Contextual Comparison

Examples of risk information that do *not* contain a quantitative denominator are:

'death toll hits 19', 'five people have died', 'fourteen human deaths'

A quantitative risk estimate situated within a context can be shown by an article printed in *The Press* in early 2004 :

In total 17 Vietnamese have been infected with H5N1, of whom 13 have died, two have recovered and two remain in hospital. (NZ Herald, 10 February 2004)

However, it is also possible to report numbers contextually:

The model estimated that 1600 New Zealanders would die if 15 percent of the population became ill in a flu pandemic. That increased to 3700 with an incidence of 35 percent. The death toll would still be less than ministry estimates for annual deaths due to poor diet (about 8500), tobacco (5000) and cholesterol (4700), the researchers point out. (NZ Herald, 11 March 2005)

Comparatively, both New Zealand and U.S. papers situated quantitative risk information within a context about a third of the time. Importantly, the majority of the news articles about avian influenza did not use statistics about actual or predicted deaths from avian influenza in a way that enabled the audience to judge for themselves whether avian influenza was a small or large risk.

Risk Comparison Information

Risk information can be analysed through noting references to previous health scares: 1918, SARS, AIDS, 'disease-ridden' England of 1665, Ebola and the 1997 Hong Kong for example. The following article used dates as its main risk references:

Then the mutated virus could spread among humans in a world that has no immunity to this strain of flu. That, experts say, could lead to a pandemic that could kill people world-wide, much like the past super-epidemics in 1918, 1957 and 1968. [The key question in controlling the outbreak is what is causing the flu to hop all over Southeast Asia] when previous outbreaks were contained in Hong Kong in 1997, 1999 and 2007 (New Zealand Herald, 28 January 2004)

The New Zealand media provided comparisons to other risk scenarios or the 1918 influenza pandemic risks in just under half of the articles (54 percent).



Figure 10: Comparison of 1918 & other risk comparisons to H5N1

As Fig 10 above shows, the 1918 pandemic (also called the Spanish flu), was used by the New Zealand media as a risk comparison more often (32 percent) than other risk

comparisons (28 percent), which is to be expected as it was the most severe health event in New Zealand's recent history, killing over 8,000 New Zealanders. These percentages are similar to the U.S. results where avian influenza was compared *less* to the 1918 outbreak (25 percent) than to other risk scenarios (38 percent of articles). There is very little percentage difference between the use of the 1918 reference and other risk comparisons in both New Zealand and the U.S. This suggests that when one risk scenario was mentioned, the other was also; detailed analysis shows that only 14 percent of New Zealand articles mentioned *both* risk comparisons.

In the New Zealand study, both risk comparisons were also read 'in-context'; this means that the sentence or sentences that described the risk variables were assessed to see whether they framed the risk variables using thematic or episodic language. Results showed that when using a risk comparison to discuss avian influenza, the media used thematic language (33 percent) three times as often as episodic language (11 percent). As past large health scares often conjure up worst-case scenarios, the use of moderated thematic language was unexpected. Upon reflection, an explanation for this result may be that as these past risk events are 'known' risk events, speculation, 'hype', or the use of emotive language is not a useful way to recount these events.

Self-Efficacy

Three self-efficacy categories were coded for: self-protection, symptom and scientific information, and analysis showed that newspaper stories that provided self-efficacy information were in the minority. One example entitled 'Being Prepared' was printed in the Dominion Post in August 2005:

Most have fallen sick after direct contact with contagious birds. Human symptoms include fever, sore throat, cough and severe respiratory disease such as pneumonia.

Personal protection appeared in 22 percent of all news stories with the US media reporting personal protection information much less (9 percent). Personal protection was the main theme of a story in *The Press* in October 2005, which also included detailed description of a recommended survival kit:

Individuals should take extra care to wash and dry hands after going to the bathroom, [make sure their faces are] properly covered when they sneeze, use tissues to sneeze in, and stay more than one metre away from people who are sick.

The recommended kit contained:

- *At least two weeks supply of water*
- *Two weeks supply of canned dried food (and a can opener)*
- *A battery-operated radio with spare batteries and a first-aid kit*
- *Protective clothing including gloves and face masks*
- *Paracetamol to reduce fevers*
- *Warm clothing and sleeping bags*

Symptom information was rare with content describing how individuals could determine if they may have been infected with avian influenza appearing in only 5 percent of all news stories, compared to 12 percent in the U.S. stories. A possible reason for this disparity between the New Zealand and U.S. results is that many of the stories about avian influenza originated overseas and concerned international issues. In another words many of the stories had a wider generalised worldview and would not have focussed on individual issues.

Research has shown that even though the public are interested in scientific issues, their scientific 'literacy' was poor (Ziman 1991). Perhaps one of the contributing factors to 'poor' literacy is the amount of scientific information provided in newspaper stories when reporting on health issues. Articles were coded to determine whether they explained the health risk of avian influenza using scientific or medical language, or gave scientific or medical information. Stories discussing avian influenza using scientific language usually limited the medical and scientific information to one or two sentences in the main body of the article:

Large amounts of virus are secreted in bird droppings, contaminating dust and soil. Airborne virus can spread the disease from bird to bird, causing infection when the virus is inhaled (The Press, 1 October 2005)

Another example from *The Press* talked about genetics:

If two different strains of the influenza virus, human flu (1) and bird flu (2), infect a cell, genetic segments from both can get jumbled together to form a third (The Press, 23 July 2005)

Other articles described the flu's impact in terms of immunology and physiology:

Although flu is a viral infection of the lining of the lungs and throat, it makes people severely unwell partly because of the intensity of the body's immune response. It may go on to affect the lungs... it also leaves the lining on the lungs damaged and open to infections with bacteria, causing pneumonia (The Press, 12 October 2005)

Sometimes scientific reporting was mixed in with protection content:

Tamiflu is an antiviral medicine effective against the strains of bird flu circulating in birds in Asia. If taken within 48 hours of becoming ill, it stops the virus bursting out of infected cells, infecting news cells and possibly other people (The Press, 15 September 2005)

Thirty percent of all articles (almost a third) contained such information. Compared to the other two self-efficacy categories (protection and symptom advice), this is considered high. In the U.S. study (Dudo et al. 2007), there was no measurement of scientific information, so it is not possible to compare how the larger U.S. newspapers (*The New York Times* for example, which employs scientific journalists), represented avian influenza in terms of scientific knowledge. However, the low number of U.S. articles that had a thematic frame (19 percent) suggests that the scientific information 'quotient' was less than that of the New Zealand articles. Only 3 percent of all stories included all three self-efficacy variables

and they were not present *at all* in almost two-thirds of all articles. Self-efficacy content was positively correlated to word length ($r = .71$); of the 8 articles that contained *all* three self-efficacy variables, the average word length was 1,019 words which was much higher than the average word length (530 words) of the overall articles. It seems that when the article was longer, there was a higher likelihood that symptom and self-protection as well as scientific information would be reported.

Sensational Content

The use of sensational language, that is words and phrases that were emotionally 'loaded', was evident in over 85 percent of all articles, and only 14 percent of stories did not contain any sensational content (loaded words, phrases and worst-case scenarios). The newspaper articles contained a myriad of loaded words, with emotionally charged adjectives and/or adverbs appearing at least once in 85 percent of all stories with three or more loaded words in 34 percent of stories. This result is close to what was found in the U.S. case study (73 and 29 percent).

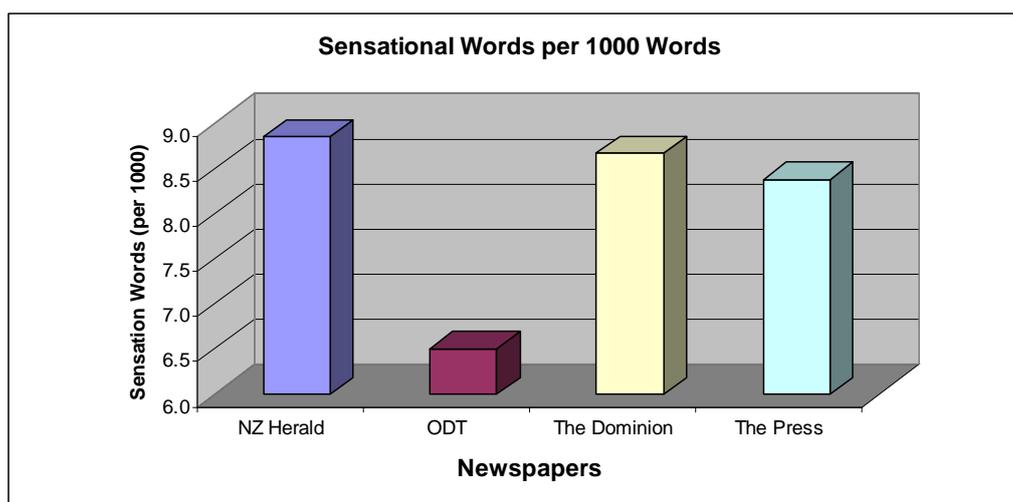


Figure 11: Number of sensational words per 1000 words by newspaper

An analysis of the number of sensational words per 1000 words per newspaper (based on actual count of loaded words, phrases and worst-case scenarios in each article), found that the *New Zealand Herald* had the highest number of sensational words, with the *Otago Daily Times* the least. This is not to say that the *New Zealand Herald* was the most sensational or episodic of the newspapers, as an article was assessed as being episodic or thematic if the *total* episodic or thematic content constituted at least 66 percent (two-thirds or more) of the total coded words.⁹³ A more accurate representation of sensational content per newspaper can be found in Figure 16 that shows overall framing by newspaper.

⁹³ see Appendix I.

An example of what is meant by loaded words can be illustrated by this list of words and phrases from just one article published in the *New Zealand Herald* on 28th April 2003:

hypochondria, plague, war, pestilence, doom, crush, lethal, spurious, nasty, attacked, draconian, and extinction.

Loaded phrases in the same article included:

'death-to-go', 'armoury of manmade destruction', 'viral meltdown', 'clueless in the face of pathogens', 'nature's bioterrorist', 'danse macabre' and 'Big Mac of morbidity'.

The article was entitled 'One plague for rich and poor' and opened with this sentence:

First war, now pestilence. In these days of high tech-doom, the riders of the apocalypse (plague division) have switched from horseback to airline business class. (NZ Herald, 28 April 2003)

Common portrayals of illness, or the threat of illness in newspaper articles, often incorporate imagery drawn from an identifiable range of ideologies and discourses (Lupton, 2004). The use of war metaphors in the avian influenza articles was strong, as these examples from *The Press* show:

strike... stockpiling... caught off-guard... kill... slaughter... resistance... bullet... shooting... 'Know-the-Enemy'... sickbeds... blown-up... stockpile... trigger... bombarded... rationing... combating... 'War-of-the-Worlds'... white-crosses... carnage... battling... 'let our guard down'... 'scale up our response'... 'tightened its grip'... frontline... second-wave... hole-up... best defence... bunker down... 'every weapon at its disposal' (The Press, 2002-2004)

The New Zealand newspapers used emotive and sensational language more than twice as often (60.5 percent) in the opening paragraphs as the U.S. media (33 percent).

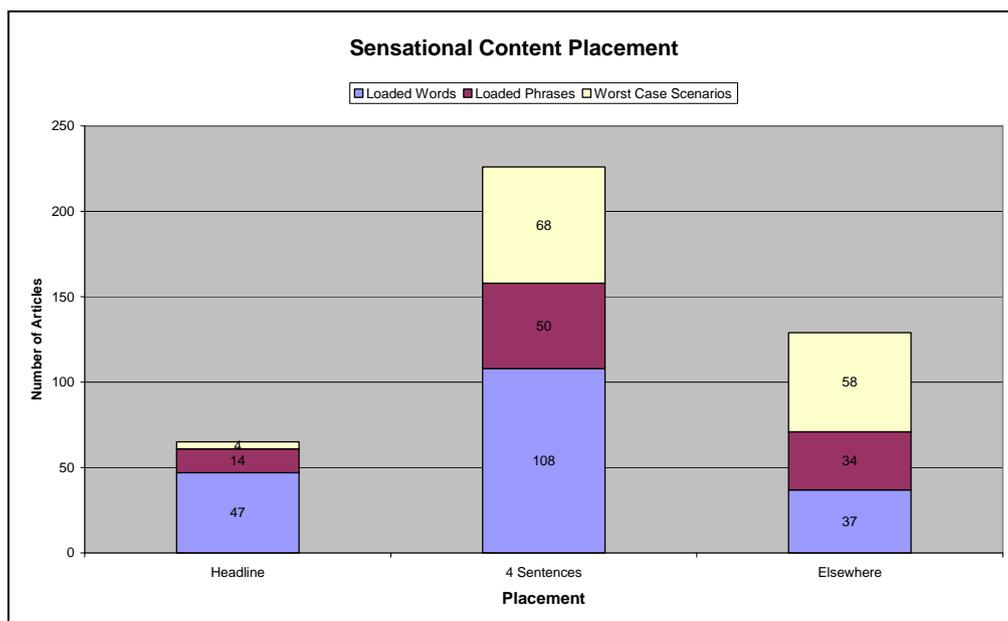


Figure 12: Sensational content in Headline, first 4 sentences & elsewhere

Loaded words and phrases appeared in the headline in 23 percent of articles and in just over 60 percent of stories in the first four sentences. Headline and loaded phrase placement results were not reported in the U.S. paper so cannot be compared. 51 percent of articles mentioned at least one worst-case scenario, and 26 percent of stories referenced two or more worst-case scenarios - the U.S. articles reported at least one worst-case scenario in 43 percent of articles. However, a worst-case scenario appeared in the headline in just 4 stories, less than one percent compared with the U.S. finding of 7 percent. These findings are important, as just 17 percent of all articles did *not have* any sensational language in either the headline or first 4 sentences, with 27 percent of the articles presenting sensational content elsewhere.

For readers this means that the majority of the stories began in a sensational manner, with emotionally loaded language used to describe avian influenza issues rather than presenting the issue in a factual and emotionally-neutral way. As Kitzinger (2000) argues, this way of reporting can create templates for how the issue of avian influenza is written about and understood, not only by the media but by the audience as well. In this way, avian influenza is framed early on as something to be scared of, possibly creating high anxiety (for a time) in the audience; frequent use of sensational language can also be perceived as an ‘over-hyping’ of the issue, and may lead to ‘reactance’, or a deliberate taking of an opposing view (Brehm 1966). When all the indicators of sensationalism are gathered together in order to assess the overall framing of avian influenza articles, it becomes clear that, with the exception of 1918 and symptom information, the New Zealand media reported all major indexes more than the U.S. media.

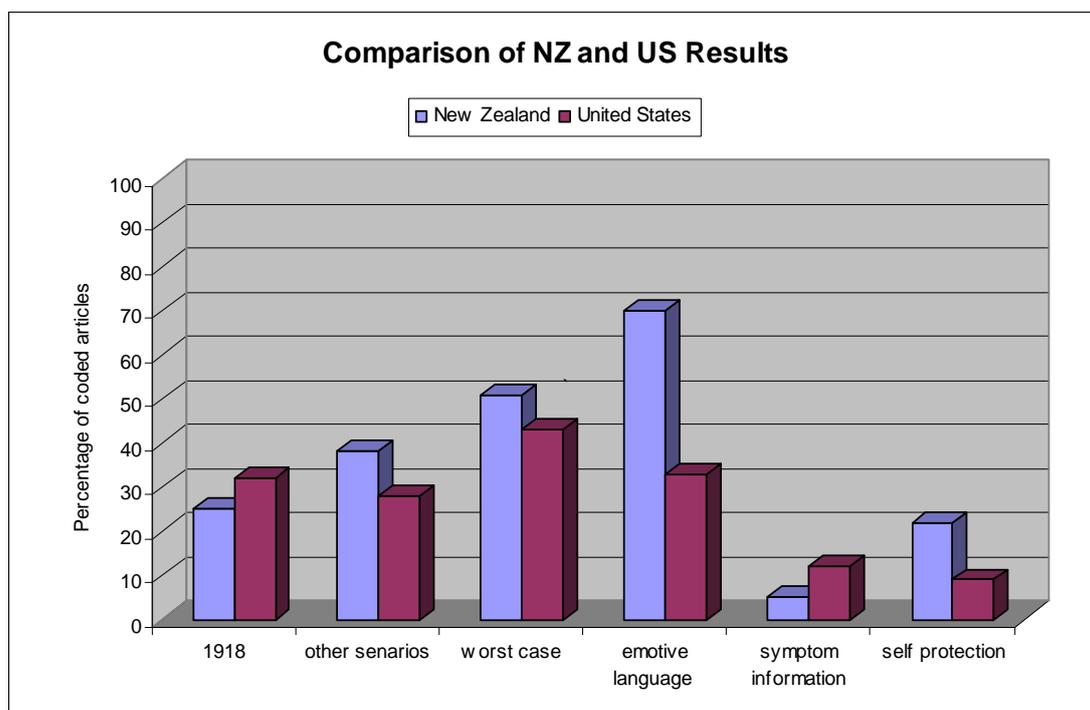


Figure 13: Comparison of New Zealand and U.S. - results for six variables

Thematic and Episodic Frames

Determining the dominant framing of the newspaper articles was a core objective of this content analysis (as it was also for Dudo et al.'s case study), and clearly illustrated how the New Zealand media defined and represented the health threat of avian to the New Zealand public. Episodic framing was the dominant way that newspapers reported the potential avian influenza and was used in over half of all stories, whereas thematic framing was used in only 17 percent of all articles.

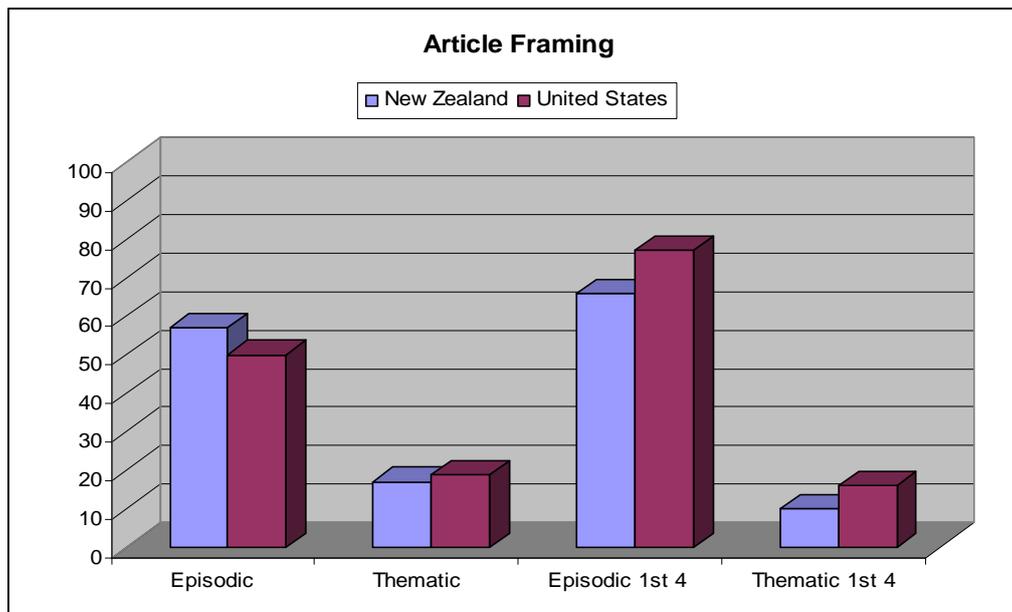


Figure 14: Comparisons of Article Framing – entire article & first 4 sentences

The two frames co-occurred in 26 percent of articles, in that both episodic and thematic framing was used equally. In relation to how the first four sentences were framed, episodic framing was dominant (66 percent) whilst only 10 percent of all stories framed their first four sentences thematically. Compared to the U.S. results, the New Zealand media's use of episodic framing was very close to that of the U.S. newspapers (as assessed by Dudo et al. 2007), as was the use of thematic framing. For both episodic and thematic framing, the results from my analysis were almost identical with what was found in the U.S. study. Moreover, episodic and thematic framing of the first four sentences were also similar with 10 percent of New Zealand articles and 16 percent of U.S. stories beginning with a thematic frame. In reference to article length, 53 percent of the larger length articles were framed episodically. This is an interesting finding, and it could be hypothesized that as the articles were much longer, there was more opportunity for scientific, factual and helpful information, and the stories would have had a thematic or mixed frame. However, as in the overall framing of all the coded articles, thematic framing was in the minority. In assessing 17 articles that were over 1000 words, 53 percent were framed episodically and as the graph below shows, the framing ratios were similar with thematic framing occurring less in longer articles than in the shorter ones.

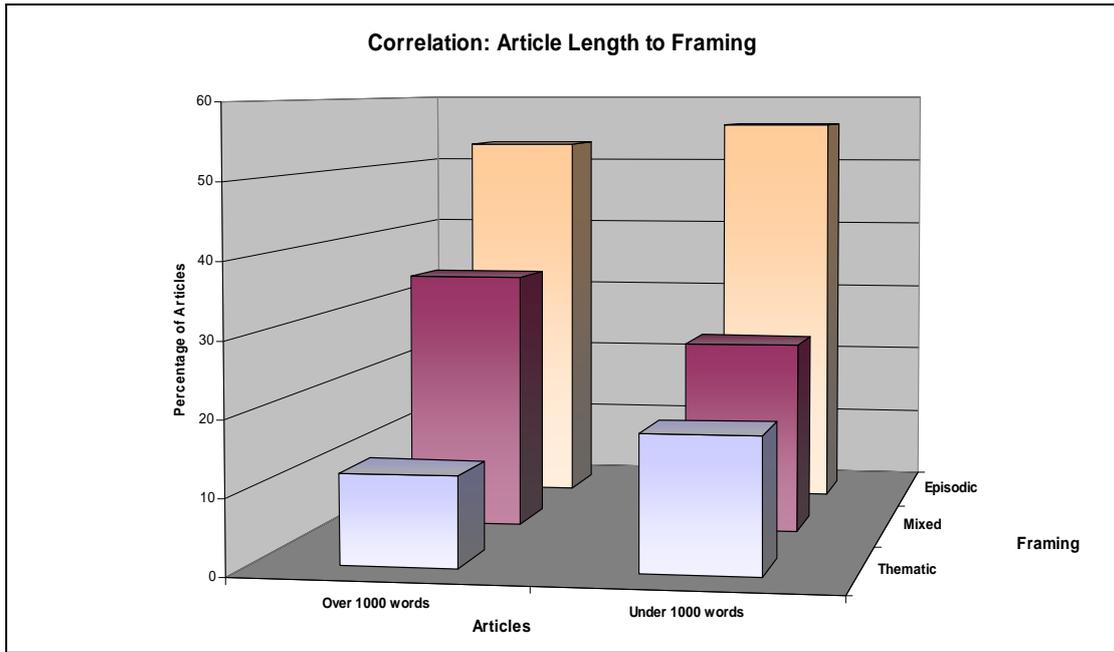


Figure 15: Correlation of article length to framing

This can be further illustrated by the percentage of episodic and thematic framing per newspaper. *The Press* had the most episodically framed articles (60 percent), with the *New Zealand Herald* framing their articles episodically less than the other three newspapers (53 percent). An interesting finding was that although the episodic framing of all newspapers fell within 7 percentage points, the *Dominion Post* framed only two of their articles in a thematic way (less than one percent).

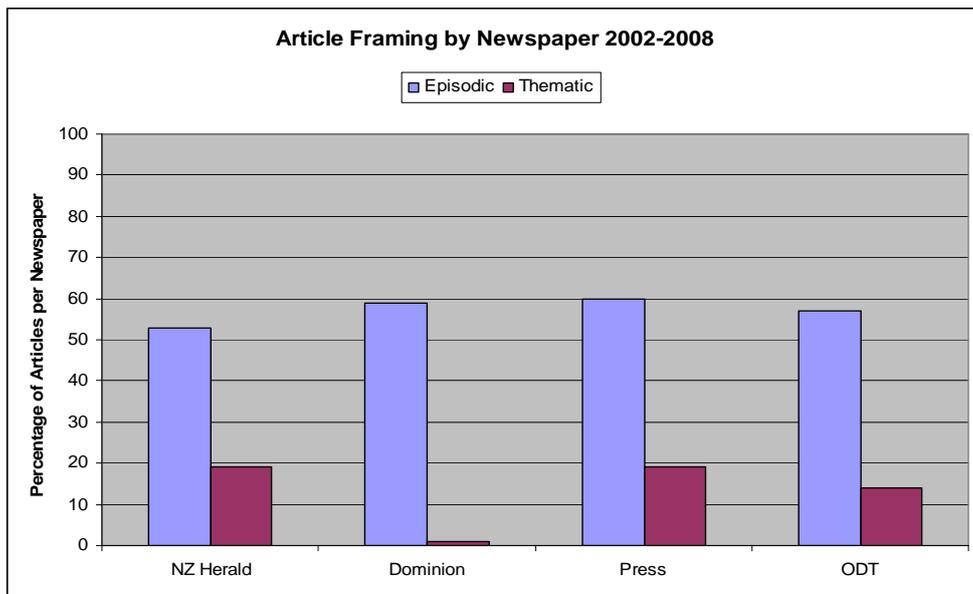


Figure 16: Percentage of episodic & thematic framed articles by newspaper

As the avian influenza issue continued to be reported in the newspapers without the increase in severity that was predicted, the prevalence of sensational language decreased with more generalised, factual and useful (thematic) language being used.

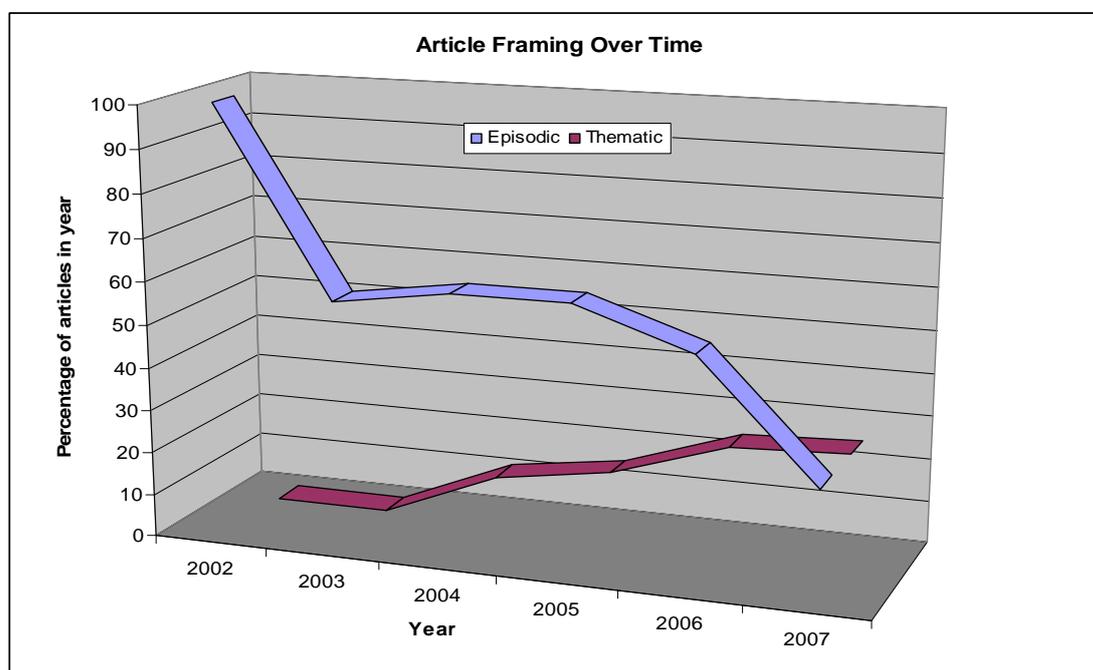


Figure 17: Percentage per year of episodic and thematic framed articles 2002-2008

TEXTUAL ANALYSIS

Hypotheses about the role of the media and its effects often begins with a fundamental question: do the media influence what people talk about, or do the media reflect what people are *already* talking about? The rationale for using a textual analysis approach that include the articles used for the content analysis, is to discover how the media represented avian influenza to the New Zealand public. What themes, categories, tropes or voices were used to 'paint the risk picture' of the impending health threat?

Whilst the content analysis of the newspaper articles illuminated the way New Zealand newspapers framed the health threat of avian influenza, it did not show what issues or topics were deemed important when reporting avian influenza. Not only did this method of textual analysis accomplish this, but it also provided a valuable reference point for the analysis of the focus group data, and revealed what the media made available for New Zealanders to assess the risk of avian influenza. The sample size used for this textual analysis was larger (n = 508) than that of the content analysis (n = 261), because articles that had two or less code-able words, and those that were about issues concerning, but not directly about avian influenza, were included.

The five main areas of content or topics that the media used to report the issue of avian influenza were: Notification, Planning and Preparedness, Impacts, Bio-security and Antiviral

medications. Within these topics were related content areas, which have been illustrated with excerpts from the newspapers articles. Additionally, there were stories that functioned as interpretive frameworks through which the threat of avian influenza was communicated: Expert/authority, Sensationalism, Dissenting Views, Social Control and notions of Social Responsibility, 'The good citizen' and 'Othering'. These are also highlighted with examples from newspaper articles.

TOPIC AREAS

Notification

One of the main topics was that of 'notification' which included a) descriptions of avian influenza, b) references to past health scares, c) information about recent outbreaks of avian influenza and other health scares and d) predictions about what may happen if the pandemic were to 'strike'. Examples of each type of notification are as follows:

- a) *The viruses responsible for all the major pandemics this century are thought to have come initially from birds. However, humans cannot be infected with a new bird strain directly as human cells don't carry a receptor that avian influenza recognises* (New Zealand Herald, 03 May 2003)
- b) *The Asian and Hong Kong pandemics happened in our time, and our grandparents clearly remember the 1918 pandemic. We've got a good idea it's going to happen again, but we don't know when* (New Zealand Herald, 03 May 2003)
- c) *Thai officials were battling to contain mounting public panic over the outbreak of avian influenza, which has left millions of chickens dead and killed at least eight people across Asia... Governments in Thailand, Vietnam, Cambodia, South Korea, Japan and Taiwan have ordered mass culls of chickens to combat the spread of the virus* (NZ Herald, 26 January 2004)
- d) *The strain of avian flu circulating in Southeast Asia is twice as lethal to humans as smallpox... the fear now is that it is only a matter of time before avian flu' re-assorts' with human flu to create a pandemic strain. Should that happen it would become the 21st century's plague [and poses a greater threat than that of] bio-terrorism, natural disaster or nuclear accident* (New Zealand Herald, 05 February, 2005)

Planning and Preparedness

Planning and preparedness (both domestic and international) were pervasive themes in the reporting of avian influenza. These included accounts of a) international planning, b) infrastructure planning, c) planning at a governmental level d) at a local government level and e) civil defence:

- a) *Governments and international agencies responsible for human and animal health have been holding meetings and issuing warnings on the potential threat of a new global outbreak of virulent influenza... HSBC, the world's third largest bank, which has its headquarters in Hong Kong, is estimating that half of its staff could fall ill or be absent from work at the peak of the next flu pandemic (NZ Herald, 01 May 2006)*
- b) *Hospitals will be overwhelmed and thousands of sick and dying New Zealanders will have to be cared for at home if a bird flu pandemic strikes, experts warn... Flu victims may be asked to stay at home, rather than flood hospital emergency departments, and have their symptoms assessed at home (The Press, 09 September 2005)*
- c) *The Director General of Health, Dr Karen Poutasi, said the predictions reinforce the need to take the illness seriously and continue preparations to deal with a major outbreak of flu... [she said] new research... was part of the ministry's 'ongoing' preparation for a pandemic which included a national pandemic plan developed in 2002 (NZ Herald, 11 March 2005)*
- d) *More than a dozen Dunedin community organisations were urged to plan for a possible avian influenza (H5N1) outbreak in New Zealand during a Poverty Action network Dunedin Otepoti (Pando) meeting in the city yesterday... Representatives were urged to plan ahead so workplaces could remain operational if they became understaffed during a pandemic. Their ability to remain operational would keep the community functional during a pandemic" (Otago Daily Times, 24 February 2006)*
- e) *A report released this week by Canterbury's Civil defence Emergency Management (CDEM) group highlights the dangers Canterbury faces from a range of disaster scenarios... such as SARS and bird flu (The Press, 13 January 2005)*

There were also articles that a) signalled intentions for public education and b) gave the public specific instructions:

- a) *The Herald understands that the Ministry of Health is planning to send out brochures with a covering letter and fact sheet to 1.4 millions households in March⁹⁴... containing information on setting up emergency kits, hygiene and guides for those working from home or running a business, should a pandemic strike (NZ Herald, 18 January 2006)*
- b) *Civil Defence recommends that people keep three litres of water per person a day, toilet paper, canned food, a transistor radio, torch, barbeque, or means of cooking, and spare batteries in case of disaster" (The Press, 13 January 2005)*

⁹⁴ See Appendix IX & X

Impacts

Articles about the flu's impact on infrastructures were common and seemed to serve not only as information about how different infrastructures were planning to cope with an outbreak, but as in most of the planning and preparedness articles, operated as a reassuring confirmation that organisations had the threat 'under control'.

Infrastructures included a) fuel supplies b) funeral homes, c) airports and airlines d) hospitals e) public transport and f) prisons:

- a) *Fuel supplies spokesman for BP, Neil Green, says that there are implications for the availability of fuel in New Zealand... sufficient fuel, which is mostly imported, is held to see the country through in the short term, but if borders closed, so would shipping (NZ Herald, 27 January 2006)*
- b) *Church services or tangi will be banned because public funerals spread the 1918 Spanish influenza. A draft plan is being finalised this week by the Funeral Directors Association, Government agencies and local authorities to deal with the projected number of casualties (NZ Herald, 25 January 2006)*
- c) *A Wellington seminar on managing the risks of a pandemic heard yesterday that the country's borders would be likely to close if there was an outbreak of human-to-human bird flu abroad... those people would be either turned around, or potentially placed into quarantine on arrival. 'No-one will get in, nobody will get out', said the Ministry of Health's manager of pandemic planning, Steve Brazier (NZ Herald, 02 November 2005)*
- d) *Every major hospital in the country had two bird flu 'victims' turn up yesterday as the country's readiness for a pandemic was tested during a 'table-top' exercise costing at least \$100,000. Getting test results to confirm whether they had bird flu took about 10 hours, but each board was sent about 1000 doses of antiviral medication before the results were confirmed (Otago Daily Times, 10 November 2006)*
- e) *Russell Turnbull of Stagecoach says bus services could be reduced, depending on the level of staff illness and the availability of fuel... taxi drivers are seen to be particularly vulnerable...plans may include the use of gas masks. Train drivers have the advantage of a driving cab isolated from the public...the Auckland Regional Transport Authority is considering different ways of collecting fares. Air New Zealand has done extensive business continuity planning...with staff concerns about travelling to some destinations being taken into account (NZ Herald, 27 January 2006)*
- f) *The Corrections Department said an outbreak would 'significantly impact' on prison operations. 'We are looking at what essential services would need to be maintained in the event of a pandemic, how to address issues specific to Corrections and how to ensure there is enough staff to provide the required services'... the department was part of a law and order group, led by police, that was planning for a pandemic (The Press, 09 January 2006)*

Preparedness accounts extended to predictions about impacts on a) businesses b) the economy c) banking and d) tourism:

- a) *Department of Labour workplace deputy secretary Andrew Annakin said under existing laws, employees could refuse to do work which could cause them serious harm. The priority was to ensure essential services would continue and for employers to consider how they would protect their staff and business (Otago Daily Times, 26 October 2005)*
- b) *A new report for the poultry industry warns of potential costs if allowing fresh chicken imports compromises New Zealand's freedom from avian diseases...allowing imports could put downward pressure on chicken prices...but the biggest financial impact on the industry would be consumer flight from poultry (NZ Herald, 03 July 2006).*
- c) *The Reserve Bank says it is able to intervene in the foreign exchange market to tackle a currency crisis during such 'shocks' as a bird flu pandemic. The bank was working to ensure its internal operations were as resilient as possible...[and] had informally discussed a pandemic scenario with other banks in the Australasian and East Asian region (Dominion Post, 19 November 2005)*
- d) *The tourist industry is keeping a wary eye on the spread of Asian flu and is already planning its response to a pandemic that could see New Zealand seal off its borders. 'How we manage visitors during this pandemic is going to have big implications for the post-pandemic recovery of the industry' (NZ Herald, 20 October 2005)*

Bio-security

Considering that New Zealand is an island nation with unique flora and fauna economically reliant on its dairy and agricultural exports, and dependent on its agricultural industries, it is not surprising that the protection of New Zealand's borders, especially in terms of bio-security, was a major theme. Topics used to frame avian influenza as a unique and dire threat to New Zealand agriculture, bio-economy and wildlife were: a) Ministry of Agriculture and Fisheries, b) border control, c) Department of Conservation d) bio-security and e) the economic impacts on farmers:

- a) *MAF spokesman Ron Thornton says international experts, migration studies and MAF surveys point to a 'low risk of bird introduction [of avian flu]...but we can't say anything is zero risk'. If there was an outbreak, MAF would quarantine any affected poultry, trace their movements to detect any further virus cases and most likely kill the infected birds (The Press, 01 October 2005)*
- b) *Director of Public Health Dr Mark Jacobs said no firm decisions had been made on how borders would be closed... [and] efforts to slow the spread of the virus did not stop at the border, with planning also under way to consider how to stamp out small clusters of disease. Yesterday, border agencies tested their plans in a tabletop exercise (The Press, 04 November 2005)*
- c) *Plans have been hatched to transfer kakapo by helicopter to Campbell Island should bird flu come to New Zealand...Other scenarios would include*

vaccinations, if the strain was slow moving...DOC national biosecurity advisor said ever since bird flu became an issue, the department had been working with the Ministry of Health and Biosecurity New Zealand (Otago Daily Times, 30 October 2005)

- d) *“Bio-security chiefs have imported the deadly strain of bird flu and are keeping it under ‘Fort Knox’-style security”. Bio-security Minister Jim Anderton told MPs samples of the H5N1 virus had been imported to allow scientists to quickly identify whether suspected cases were real. The samples were brought in at the end of April and are being kept at Biosecurity New Zealand’s Investigation and Diagnostic Centres in Wallaceville, Upper Hutt. “It’s the highest security containment laboratory of its type in the country. The virus is held in a very low temperature freezer” (The Press, 16 June 2006)*
- e) *Lamb leaders are playing down any gains to be made from the bird-flu scare, despite a falling market. Bird flu has led to conclusions by farmers that it may turn overseas shoppers away from chicken and on to red meat such as lamb... the reaction against beef during the BSE scare was nothing like what it was predicted, so I don’t think it will be for chicken. The chance of getting bird flu from eating chicken is, as I understand it, statistically nil (The Press, 10 March 2006)*

Antivirals

Antiviral medication information was another major topic area contained in many articles. It could be assumed that these articles would have included self-efficacy information (symptom, protection and scientific), but the content analysis showed the stories did not provide much information to help people understand the disease. Nevertheless, scientific language and medical references of various kinds were used. Antiviral medications were talked about in several ways a) informative a) availability c) allocation issues and d) price:

- a) *Antiviral drug Peramivir, developed by US pharmaceutical company BioCryst, is currently being trialled on influenza-infected patients at seven New Zealand ‘study centres’. A single injection of the drug, which like Tamiflu is a neuraminidase inhibitor, stunts the growth of the enzyme neuraminidase needed for the flu virus to flourish in the body (NZ Herald, 05 August 2007)*
- b) *A waiting list of thousands of New Zealanders wanting their own supply of Tamiflu will not be met by the latest delivery of the antiviral drug. Fears of a deadly influenza pandemic have sparked a massive demand for Tamiflu... it has been out of stock in New Zealand for several weeks (The Press, 01 November 2005)*
- c) *Cabinet ministers are on a secret list of workers likely to be first in line for limited stocks of potentially life-saving treatment in a flu pandemic. Health workers, police, the military, prison officers, border control agencies, key social services and infrastructure industries are also on a draft list of people who would be given special reserves of the anti-viral drug Tamiflu, which would be the frontline response to a pandemic (Dominion Post, 23 November 2005)*

- d) Roche has announced that new stocks of Tamiflu capsules were distributed to pharmacy wholesalers nationally last week, six weeks earlier than expected and 15 percent cheaper due to larger manufacturing volumes... a course of Tamiflu cost between \$69 and \$88. The wholesale price was about \$52 before GST (The Press, 29 March 2006)

INTERPRETIVE FRAMES

Expert/Authority

A common way to report the threat of avian influenza was to draw upon the voice of the expert or authority, the most common expert being a virologist, a scientist or a World Health official. In fact, the first word in the first article,⁹⁵ (that could be regarded as introducing the threat of avian influenza to the New Zealand public), was '*Virologists*'. Early use of 'the expert' defined the terms of the debate around avian influenza, as is common when the subject matter is largely scientific and facts are not readily available to the lay public. An article printed early in 2004 had in its heading 'New Zealand virologist says...', and it quoted five experts: a New Zealand virologist, the World Health Organisation, a Massey University professor of animal health, the New Zealand Ministry of Health and a Poultry Industry Association chairman.⁹⁶

In the same way that opinions of experts were often used in a factual way, statistics in the form predicted numbers of infections and/or deaths, acted as an authoritative voice and were powerful symbols:

The projected worst-case scenario for New Zealand in a pandemic 33,000 potential New Zealand death toll if the pandemic is as severe as the 1918-1919 Spanish Flu. 10,000 deaths possible during the worst week. 40% of the population could catch the flu, some 1.6 million people. 200 children could be orphaned, [and] 800 children could need alternative care because their parents would be in hospital. 15 to 27 weeks [is] the time required to fill New Zealand's vaccine needs with stocks from Australia. 2 million to 7.4 million is the potential international death toll, as forecast by the World Health Organisation (NZ Herald, 17 November, 2005)

The 'Lay' voice

Several articles represented what the 'ordinary New Zealander' thought. One article, in an attempt to put people's concern about H5N1 in comparison with other past health scares, reported the number of telephone calls to the Ministry of Health's helpline:

Figures obtained by the Dominion Post show that more than four times as many people called the Health Ministry's Severe Acute Respiratory Syndrome helpline in the three months to August as called the free avian influenza phone

⁹⁵ 'Researchers detect threat of Flu Pandemic in Dairy Cattle', The Dominion, 23 February, 2002

⁹⁶ 'High death rate in bird-flu outbreak; New Zealand virologist says children most at risk', New Zealand Herald, 30 January 2004.

line...somewhat surprisingly, an average of 393 people a month called the SARS helpline compared with just 93 for the bird flu line (Dominion Post, 16 October 2006)

An informal poll carried out by the *Dominion Post* on 22 October 2005 asked the public to respond to an article about avian influenza . It asked whether they were concerned about the threat of a flu pandemic reaching New Zealand, and what - if anything - they had done to prepare. Whilst these articles cannot be regarded as a representative sample, (they are rather what is journalistically referred to as 'vox pop' or 'voice of the people'), they are nevertheless important as they signal to the media audience that these articles are indicative of what 'ordinary people' think:

[A 34 yr old man from Wellington]
'[I'm] a bit concerned and already quite prepared... we have a disaster kit at home with food and paracetamol'

[An 18 year woman from Wilton]
'I heard you can get a vaccine. If it does come to New Zealand I will definitely get vaccinated'

[A teenager from Naenae]
'I've never really thought about it'

[A 47 year old man from Karori]
'I think it's like a lot of other stories that have come out – scaremongering'

As previously stated, many articles evoked the 'expert' when talking about avian influenza, which represents a point of view most of the media audience would not personally identify with. The examples of a 'lay voice' above, however, represent 'ordinary people like us', and serve as a balancing mechanism, providing an important 'reply' to the expert/authority discourse.

Dissenting views

Antiviral medications were almost always represented as a logical and safe way to combat the avian influenza. This was a representation that was uncontested until 2007, when the following excerpt appeared:

New Zealand's drug safety agency is investigating a possible link between Tamiflu and bizarre suicidal behaviour among children in Japan. The Japanese Government is warning doctors against prescribing Tamiflu to people aged 10 to 19 after the deaths of at least 18 youths as a result of irrational behaviour (The Press, 23 March 2007)

As in other articles that took a dissenting or opposing view to the majority of reporting, these 'dissenting' articles were published late in the reporting timeline. This was the case for several articles that questioned: a) the seriousness of the threat of avian influenza, b) the advice that had been given thus far, c) the ramifications of too many warnings too early and d) the adequacy of the pandemic planning:

- a) *Given that there has not been one case of person-to-person transmission, then for health officials to be advancing the worst-case pandemic scenarios is irresponsible, Laws said (The Press, 30 January, 2006)*
- b) *According to 'Those That Claim To Know', the best defence against this contagion is simply to wash our hands. I haven't felt so reassured by any official advice since I saw an instructional video that said crouching under thin wooden desks would protect people from the brief unpleasantness of a nuclear attack (NZ Herald, 21 April 2006)*
- c) *However, New Zealand experts say since the public's fears about bird flu seem to have dimmed – even while the threat of a pandemic remains as real as ever... Christchurch virologist Lance Jennings [said] 'Just because people aren't hearing about H5N1 as much as before, that doesn't mean it has gone away'. Jennings believed people could be tired of worrying about the threat of a pandemic (The Press, 29 October 2007)*
- d) *The Government's emergency planning has been called unlawful, unclear and insufficient, with a critic warning of 'total confusion' if disaster struck. Lawyer Mai Chen said yesterday that the national emergency plan lacked detail, and was ambiguously worded and unclear about who would lead a response. 'There is a big gaping hole in the national plan which does not state and provide for hazard and risk' she said (Dominion Post, 16 May 2006)*

Another article addressed perceived public apathy and was critical of both the Government's planning and the public's response to it:

Most New Zealanders have done nothing to prepare themselves for a deadly flu pandemic despite high public awareness of the threat... only a third of the 1000 people contacted had taken precautions... 'There are major gaps in the Government's pandemic planning that will put lives at risk' [National Party Health spokesman Tony Ryall said] (Dominion Post, 06 February 2006)

Sensationalism

As demonstrated in the content analysis, there were many sensationalist elements in the avian influenza stories, and this was evident in the textual analysis, in the way that the topics were framed in terms of past epidemics. Whilst sensationalism as such is not a theme, it can be regarded as an exemplar of how H5N1 was reported, and how the potential risk was portrayed. A common melodramatic device, when explaining about avian influenza, was to talk about the 1918 pandemic and SARS. A typical example is as follows (note also the use of 'expert' in both the text and headline):

Experts track down avian flu culprits

Then the mutated virus could spread among humans in a world that has no immunity to this strain of flu. That, experts say, could lead to a pandemic that could kill people worldwide, much like past super-epidemics in 1918, 1957 and 1968. The key question in controlling the outbreak is what is causing the flu to hop all over Southeast Asia when previous outbreaks were controlled in Hong Kong in 1997, 1999 and last year (NZ Herald, 28 January, 2004)

This textual analysis is qualitative and does not quantify specific words; however, I make one exception to this approach in mentioning the use of the word 'mutate' and/or 'mutation'. As demonstrated in the excerpt above *Experts track down avian flu culprits*, the word 'mutate' seems to be a pivotal word for media reports about avian influenza. It lends credence and importance to the possible threat of avian influenza, as without it, the threat is 'not a threat at all'. What makes this virus seem such a risk, is its ability to mutate, so the debate around this threat centres on the likelihood of this question: 'will it, won't it, and if so, when?'

The words 'mutate', 'mutation' and 'mutating' are seldom used without corollaries such as 'could', 'maybe', 'possible', which are media caveats, and should make the suggestion of a pandemic less worrisome or sensational. However, this does not seem to happen in the case of H5N1 articles, as the word 'mutate', a scientific word that carries some authority of its own, seems to over-ride the uncertain and provisional caveats. Following are five excerpts from articles printed in early 2006 [caveats in bold]:

1) *Scientists have reported a sign that the bird flu virus H5N1 **may be mutating** into a form more infectious to humans* (Dominion Post, 28 February 2006)

2) *Scientists believe H5N1 or a subsequent bird flu **could mutate** into a form which **could** pass easily between people, sparking a global pandemic* (New Zealand Herald, 27 February 2006)

3) *A mutation of the bird flu H5N1 virus -- deadly to birds but not easily passed to humans -- was the **most likely** source of a widespread pandemic, he said* (The Press, 24 February 2006)

4) *and there were fears it **could mutate** into a strain that spreads easily between humans* (The Press, 27 February 2006)

5) *the present epidemic of lethal bird flu strain H5N1 **could be** the trigger **if** the disease **mutates** to a form easily spread between humans* (The Press, 20 February 2006)

The word 'mutate', 'mutation' or 'mutating' was used at least once in 67 percent of the articles surveyed. Focus group data analysis will clarify whether the word 'mutate' was perceived as the newspapers seemed to intend.

Social Control

Notions of social control were evident in how the media framed appropriate responses to the threat. Governmental news releases had, to date, revolved around infrastructure planning and ensuring antivirals were available to those most in need. Increasingly however, news stories appeared outlining social controls and measures that the government, in the event of an epidemic, would put into effect. Several of these suggested

measures that were adopted as policies and passed into legislation in response to recommendations, resulting in changes to the a) Health Act (1956), b) Criminal Justice Act (1985) and c) the Immigration Act (1987):

- a) *The Epidemic Preparedness Bill, being considered by the Government administration select committee, allows ministers to relax statutory restrictions or requirements to deal with the flu. 'The actions that need to be taken should be clear to the health authorities from their operational plan for such events'... [in a pandemic] politicians and officials [would] be able to assume draconian powers over people's individual rights (NZ Herald, 12 October 2006)*
- b) *New legislation gives medical officers powers of detention in an epidemic... The bill gives medical officers of health the power to detain people suffering from pandemic flu and keep them under surveillance for up to 28 days... People who refuse to follow medical officers' orders could be arrested and imprisoned for six months or fined up to \$4000... Medical officers of health will be able to commandeer land, buildings and vehicles to deal with a pandemic outbreak (NZ Herald, 07 April, 2006)*
- c) *Police will have the power to detain people for medical tests and treatment under Government plans to control a bird-flu outbreak... under a bill that includes clearer rules for quarantining patients and tougher checks at airports during an epidemic or pandemic... the provision was designed to allow measures such as welfare payments and automatic visa extensions to tourists trapped in New Zealand (The Press, 07 April 2006)*

Another article evoked social responsibility as its rationale:

Mr Adam said the bill tried to balance an infected person's rights to freedom against a person's right not to become infected (Dominion Post, 07 April 2006)

Social Responsibility, 'The Good Citizen' and Othering

Talking about the pandemic in terms of accountability to the whole community drew upon a social responsibility discourse:

Christchurch virologist Lance Jennings said the healthcare professionals had a social responsibility to be vaccinated against flu to protect patients and fellow staff. Infection control nurse specialist Julianne Toop said 'I would like people to consider [the vaccination] in relation to protecting their patients, their colleagues and their own families' (The Press, 05 May, 2006)

Hawke's Bay nurses are putting themselves and the hospital at risk by not taking up the flu jabs, the region's health board says... only 24 percent of nursing staff took up the free vaccinations... in comparison, every senior doctor at the hospital had the jab... 'it is a risk to our service in the event the pandemic arrives' (Dominion Post, 24 June 2006)

Flu vaccination rates among hospital staff are 'abysmal', despite their importance as role models to patients, a leading virologist says. 'They (healthcare workers) have a role, as advocates to their patients, and as advocates to their own colleagues. It is an issue of social responsibility (Dominion Post, 06 May 2006)

Drawing further upon the interpretive framework of social responsibility were stories that a) constructed the notion of a 'good citizen' b) stressed the importance of community or c) used a combination of both:

- a) *Watching their welfare [is]* Carmel Gregan-Ford, mother of Angus, five, Molly, four and Rosa, 10 months, nurse and education manager for the New Zealand Kidney Foundation: "I have a food pack ready in case we have to isolate ourselves for a period of time...I feel that with three young children it is my responsibility to make sure their welfare is taken care of...I'm going to store water in airtight containers and I will get masks next" (The Press, 29 October 2005)
- b) *Get to know your neighbours – it might just save your life.* Rice, who has written a book on the impact of the 1918 influenza pandemic on New Zealand, said it was a strong community spirit which helped pull the country through... [Rice said "volunteers in Christchurch rallied to ensure everyone was looked after...I wonder today how many people would adopt the same brave attitude?" (The Press, 30 November 2005)
- c) *Cashmere accountant Hilary marks said she planned to 'bunker down' if the bird flu pandemic arrived. She had ordered a carton of 100 surgical masks that she planned to share with friends... "it comes down to responsibility, if I don't make preparations, then I'm putting myself into an unsafe position... that's putting extra stress on the medical system"* (The Press, 13 October 2005)

A discourse of 'othering' was reflected in stories that blamed the avian influenza outbreak on other cultures in two specific ways: a) implying of irresponsibility and b) description of Southeast Asian culture:

- a) *Badly affected countries such as Vietnam and Indonesia could not afford all the necessary control measures. `There was a big need particularly to vaccinate poultry and to take whatever measures were appropriate, for example, through live bird markets. The countries have taken measures. `They were pressured in the early days to cull large numbers of poultry,' Massey University Professor Roger Morris said yesterday. `Village farmers were told they would be compensated. Most were not compensated or were not compensated adequately, so they have hidden the disease since* (NZ Herald, 26 October 2005)
- b) *Come December the build-up to the Lunar New Year, known as the Tet Festival, sees poultry overload the dinner plates and backyards of Vietnam and Thailand. Among the poultry-feasting during the Tet festival months is a dish that scientists have linked to some of the early bird-flu deaths: duck's blood pudding. This soup is a staple, made from simmered duck innards and raw duck's blood, and provides ample opportunity for the virus to jump from bird to human in the often bloody unsanitary preparation and consumption conditions* (The Press, 01 October, 2005)

The second way was to lay the blame for spreading the disease outside of Asia's borders on the governments of infected countries:

The doomsday scenario is that the Chinese will use a poor quality vaccine that does nothing more than force the virus to mutate into something more lethal (Otago Daily Times, 23 November, 2005)

It's not really surprising in countries like Indonesia that there are possibly unrecognised pockets of infection still bubbling away...quite frankly, Indonesia probably doesn't enjoy First World public health services (The Press, 02 August, 2006)

DISCUSSION

Content Analysis

There appears to be a great deal of similarity between the way avian influenza was framed in the news reporting in both U.S. and New Zealand newspapers. Due to the inclusion in the New Zealand study of additional variables of scientific information, overseas and local content, risk comparison context and the widened scope of the loaded words however, a direct comparison cannot be made.

With regards to the differences found between the New Zealand and U.S. media reporting, a possible reason for the higher sensationalism content in New Zealand newspapers could be that New Zealanders consider themselves protected by two geographical realities: New Zealand is isolated by water, and it is theoretically capable of completely closing its borders. Therefore, the New Zealand public may consider that they possess a geographic invulnerability, resulting in health risk messages needing to be higher in sensationalism to penetrate this perceived sense of security. Analysis of the focus group data will indicate whether this hypothesis has merit.

As to why the New Zealand media reported less protection and symptom information, it could be that, regardless of what the journalists personally believed, the news value of avian influenza during this reporting period was not considered to be high. For example, media maxims such as 'bad news is more newsworthy than good news' would mean that the 'good' news that one could protect oneself from the pandemic would be reported less often. Moreover, the media prefer to report issues in terms of personalisation;⁹⁷ the avian influenza was primarily an abstract concept in that it had not as yet affected any birds or humans in New Zealand, so it is not surprising that personal issues of self protection and symptom information were not well represented. Another way to explain the dearth of scientific information may be to understand that, compared to the U.S. media, New Zealand newspapers are much smaller and have fewer resources in terms of specialised medical and scientific journalists. Access to medical and scientific personnel may be

⁹⁷ Personalisation: events which can be portrayed as the actions of individuals will be more attractive than those where there is no such 'human interest'.

problematic, but as the relationship between New Zealand journalists and the scientific community has not been examined, this hypothesis remains speculative.

The lack of thematic framing highlights that news reporting of health issues such as avian influenza, contained little scientific information, social contextualisation and self-efficacy content. Risk communication literature (Davies et al. 1986) argues that these types of information are important to readers when wanting to assess their personal risk of impending threats. Analysis of the focus group data may reveal whether scientific information is important to the New Zealand public when they are trying to assess health risks, and it may also indicate what sort of scientific information they find meaningful.

The implications of the findings that episodic content dominated the opening paragraphs of stories are significant in the way New Zealanders perceived the threat of avian influenza. For example, research in the 1980s that assessed eye-tracking movements⁹⁸ has shown that people quickly scan the headlines and the first couple of paragraphs, and then only continue reading if something has caught their eye. Not surprisingly, a later study (EyeTrackIII) found that more people read shorter paragraphs than longer ones, and stories with short paragraphs were more likely to be read from beginning to end than those with a longer paragraph format. Therefore, if the first part of a story was framed episodically, with little or no useful or contextual information, then the effect on the reader's perception of a news issue could be considerable.

Textual analysis

The textual analysis revealed that when reporting the avian influenza, the media reflected a number of topic or content areas and used several interpretive frames. The textual analysis was qualitative, so the different themes were not compared against other themes to see if one or more dominated. However, it was apparent that there were many stories regarding the protection of New Zealand's economic and bio-security interests, which can be confirmed by referring to the results in the content analysis, where almost three-quarters of all stories were coded as having some New Zealand content. The 'closing of borders' rhetoric was used in multiple articles; further to the finding that the New Zealand newspapers reported the threat of H5N1 in a highly sensational way, it is of interest to determine whether the focus group participants reflected similar attitudes.

It could be argued that these themes operate as media templates for the reporting of avian influenza, and as such, are now well established. I suggest that any subsequent articles printed in the New Zealand media about H5N1 (or indeed, any predicted health threat) will fit into one of these templates, or ways of talking about the issue, and will draw upon

⁹⁸ 'Eyes on the News': Print Eyetracking - 1990-91, The Poynter Institute.
<http://www.poynterextra.org/eyetrack2004/history.htm>

discourses of 'the 'expert', 'othering', social responsibility and social control. Additionally, any suggestions of medications will be uncontested and critiques of planning or questioning of the veracity of the potential threat will be limited or published later in the news cycle. As demonstrated in the content analysis, the use of past health events and the use of war metaphors were dominant ways to report an impending health threat.

How the results and analysis of the newspaper articles relate to, or informed the analysis of the focus groups, and how the emergent themes and discourses of this chapter reflected and demonstrated existing theories and literature will be discussed in Chapter 7.

6. ANALYSIS: FOCUS GROUPS

INTRODUCTION

The purpose of the focus group analysis, as stated in the introductory chapter, was to examine attitudes and perceptions about the media reporting of avian influenza of the New Zealand public. How did I intend to 'make sense' of the participants' sense-making? The analysis of this data used a thematic analysis approach, and is situated within a constructionist epistemology. In relation to the aims of this thesis, a major question in approaching the analysis for this chapter is what patterns, themes and sub-themes are evidenced as the participants discussed the issue of avian influenza between them.

Other questions that arose were: why did the participants talk about avian influenza in some ways but not others? Were all, some or any of the ways they talked about avian influenza related to risk, or the media, and how did they construct the topic between them? Were there tensions and contradictions apparent in the conversations, and if so what were they, and how were they resolved? Did they engage in the possibility of the risk of avian influenza or find ways to avoid engaging? If so, how did they do this and why? How did they perceive risk in relation to avian influenza, and was that perception constructed as a personal or social risk? If so, how was it talked about?

Importantly, as I approached this analysis I was aware that categories, themes and topic areas had been ascertained through the newspaper content analysis, and I did not want these to influence how I coded the focus group transcriptions. This is not to imply that the previous analysis did not inform how I thought about the coding and certainly, my research directives of risk, health and media guided my analysis. However, rather than look for these ideas within the text (as one will always find what one looks for), I allowed the data to reveal the predominant conceptualisations used by the participants and did not pre-suppose what these might be. I actively determined not to simply describe what the participants were saying, but to interpret and theorize about the patterns and themes.

Even though there were differences between how the groups interacted,⁹⁹ the analysis is not presented separately for the different groups; they were analysed sequentially, and treated analytically as a single text. Overall however, each group talked about avian influenza in similar ways which demonstrated comparable patterns and themes, albeit with slightly different emphases. For the sake of brevity, the illustrative excerpts are a representation of themes, patterns and sub-themes but are not comprehensive; the excerpts used are the most pertinent examples.

⁹⁹ Reflections and observations of the focus group idiosyncrasies and interactions can be found in Appendix VIII.

THEMATIC ANALYSIS

Thematic analysis is a flexible qualitative methodology that not only enables a comprehensive and rich description of the data, but it can also be applied 'across a range of theoretical and epistemological approaches' (Braun and Clarke 2006:78). To identify the themes, sub-themes and patterns, this analysis involved looking for the concepts or terms that the participants drew upon to describe and 'evaluate events and actions' (Potter, Wetherell, Gill and Edwards 1990). For example, when engaging in the idea that H5N1 could be a health risk, the participants talked about how to keep themselves safe (a 'protection' theme) by being mindful of washing hands and using hand sanitizers (a protection sub-theme of 'hygiene').

In contrast to discourses, which can be understood as bodies of knowledge, or 'systemised wholes' (Potter et al. 1990:190), these narratives revealed patterns and topics that can be regarded as the *content* of discourses. In keeping with constructionist methodology, this analysis examined the ways in which 'events, realities, meanings and experiences are the effects of a range of discourses operating within society' (Braun and Clarke 2006:81). Additionally, for the purposes of this analysis, narrative refers to the focus group discussions that included discourse components of 'description, chronology, evaluation and explanation [as well as] questions, clarifications, challenges and speculations' (Ochs and Capps 2001:18).

The data showed several predominant themes which were categorised as central ideas or 'higher level' themes; these were Risk, Media and 'Othering'. Additionally, within these themes were sub-themes, but this is not to say that these categories were fixed and distinct, and in fact, there was a great deal of fluidity and overlap. Nevertheless, in analysing the talk between participants, it became obvious that in discussing avian influenza, the participants were consistently engaging the same three 'higher level' themes. It could be argued that the two themes of 'Risk and 'Media' were to be expected, as these ideas were present when introducing the cue article. 'Othering' however, was an unexpected and interesting finding. The following examples and excerpts from participants' conversations will demonstrate that rather than having discrete themes, the material is highly interwoven.

RISK

The risk associated with avian influenza emerged as a central issue or pivotal point around which much of the discussion focussed and served as an analytic anchor, not only for this section but for the substantive themes of 'media' and 'othering' as well. In responding to the cue article and through assessing risk in relation to the potential threat of avian influenza, the participants' discussions revealed thirteen sub-themes, which could be

further categorised as representing two minor themes: believability and manageability. Believability sub-themes revolved around participants' feelings about the risk, and the ways that they negotiated how they felt, including distancing themselves from the threat, contextualising the threat, looking at how others responded and raising questions of trust and credibility. The manageability sub-themes were primarily concerned with organisational preparedness: how this planning affected not only themselves, but also the wider community and the country in which they lived.

Believability

The participants addressed the question of personal risk directly, and engaged with scenarios proposed by the cue article:¹⁰⁰ *'I feel like it is actually a risk, so you're right, clearly I do take into account whether I think this could really happen to me or not' (Rs:1),*¹⁰¹ whereas others assessed the risk as non-existent: *'as far as I'm concerned it's gone, I don't even see it as a potential threat ... anymore' (J:1)*. This talk about risk was distinguished by the perception of risk in relation to time, as the following show:

P(1): I think I probably took it with a reasonable pinch of salt then [laughs] but I take it with a bigger pinch of salt now.

M(4): yes, we've got a higher Asian content to our population now so certainly the risk was perceived as being greater now than perhaps it was 20 years ago because there's a lot more inter-travel

The idea that the risk still seemed a chronologically far-away concept was further illustrated by discussions about when the participants would begin to worry or act in response to the threat:

B(2): I have a friend who lives in Jakarta, an old university friend and if she were to contact me and say my husband has got bird flu, suddenly it would become more of a deal

A(2): it might come here, but until it comes here I don't really have to worry.

G(3): for me there would have been nothing to worry about unless someone knocked on the door in a boiler suit and [laughter] ...a mask and...said 'get out now'

B(2): um...yeah, but I really honestly did not think... I mean, I did not think I would've worried unless it had been in New Zealand

¹⁰⁰ For cue article see Appendix III.

¹⁰¹ Participants' comments are indicated in the text by italics. Within text, the Speaker is denoted by a letter, and the focus group by a number. For example, if the excerpt is from Linda from the second focus group, it will be denoted as (L:2). At the beginning of excerpts, this will be denoted as L(2). Additionally, *?* denotes a rise in intonation, not necessarily a question – see Appendix II.

These responses show that, in assessing their personal risk from an impending health threat, these participants were relying on personal experience, personal contacts and past personal knowledge, rather than anything that they may have read, scientific or otherwise, in the media. This finding concurs with Lupton and Tulloch's (2003) assertion that people's understanding of risk is developed not only through cultural and sub-cultural membership, but also through personal experience as well (p:1). Additionally, Anderson (2006) concludes that 'family, work colleagues, friends and health professionals can influence knowledge and attitudes towards risk issues' (p.124).

Whilst the participants considered that they could be at risk from avian influenza, ideas such as the following seemed to indicate that they were not worried about it at all: *'I think I'm more likely to be run over by a car, (laughs) than to be'...* (W:4), [and] *'I still wouldn't rate it actually, even though I...I just haven't got the feeling that it's... that I'm going to get it'* (D:2).

The two sentiments above represent the opinion of most members of the focus groups however, as the participants discussed this between them, the certainty of the 'no-risk' stance was belied by debates that were clearly trying to evaluate and clarify the risk. This showed that they were a lot less certain about it:

K(2): and the consequences are so unknown that it's very difficult to really anticipate so...

J(3): when it really does then you're on your own, you really are... so that's the risk you take, you say 'oh well'... then you think... what's the chance really, you know so...

W(4): they found a swan and... in Scotland and it had it and then you think 'whoa, well, maybe it can come here'

Anxiety, Fear and Panic

The uncertainty that the epidemiology of the H5N1 virus presented was evident in many comments that illustrated another sub-theme, that of anxiety, fear and panic:

L(4): I was going to say I think this is one of the scariest things that it's not transmission from human to human that's um... or it's well, animals have suddenly become involved and I remember seeing a Time magazine article where it had a kind of um...loop and I think there was a pig in there

Rs(1): it looked like it was following that pattern you were saying about earlier, that it had started somewhere and seemed to grow from somewhere out from there which did make it more realistic and panicky

These comments indicated a level of confusion about whether scientists really know enough about avian influenza to predict a pandemic, with an implication that perhaps they should be managing (or know more about) the risk; however, there were doubts that this is so: *'well, I did heaps of research into immunisation and it was conflicting .. and it was hard, and I spoke to people who I thought um... were...um... experts and um, yeah, I just did not come out, I don't think very much wiser' (C:1)*. These comments suggest a preference for certainty or more confident scientific claims, as this group member said: *'but it says, in this article it says lots of things like 'claims', 'maybe there'll be this', um '... if possibly it mutates', there's nothing concrete, it's all maybe, possibly...so for me that was it, there was nothing like 'OK, it's here you will die in 5 days', concrete, you know? It's all sort of like 'ehh, maybe' (G:3)*. However, as previously stated in the literature chapter of this thesis, the very domain of science is characterised by uncertainty, debate and questioning, and cannot be expected to provide absolute forms of knowledge.

Assessment via others

The participants seemed to be worried about a variety of things to do with the possibility of a pandemic, with some estimating the risk by judging how worried others around them were:

*V(1): I tend to be influenced by other people to a certain degree, not over.. probably, you were saying 'oh there won't be this', I wouldn't do a lot of research on it myself *?*, so I tend to listen to other people which is probably....*

Rs(1): he sort of... became quite panicked...cause this guy's normally seems a fairly logical kind of person who doesn't panic easily... I remember it began to be quite frightening for me

J(1): but it did make me think twice because people who seemed quite rational were panicking rather than it just being people who you'd assume were wacko panickers anyway

C(1): a PhD in philosophy, and he doesn't panic and he doesn't get... but he did do this [laughs] and I don't know whether it was about being a father or about avian bird flu

Given that individuals function in society by interacting with those around them, the need to evaluate one's position or opinion about an issue in relation to someone else is not unique to these participants. As American sociologist Herbert Blumer (1969), founder of symbolic interactionism,¹⁰² stated: 'human beings act toward things on the basis of the

¹⁰² 'Symbolic interactionism' is a down-to-earth approach to the scientific study of human group life and human conduct. Its empirical world is the natural world of such group life and conduct. It lodges its problems in this natural world, conducts its studies in it, and derives its interpretations from such naturalistic studies' (Blumer, 1986: 47).

meanings that the things have for them' (p.2), but more importantly, the meanings of things arise out of social interaction (cited in Lindsmith, Strauss and Denzin 1999:11). Moreover, Palmlund's (1992) solution to effective risk communication is based on social interaction and positions all those involved in risk communication as actors, who need to consult with each other. This awareness of those around them was illustrated further by discussions that reflected a sub-theme of social responsibility, especially in regards to immunisations and antivirals:

V(1): and it's like the whole playground thing where were the parents, why did not they do this' you know, like, god forbid, if you did not have your child immunised and something happened

J(1): well, I came under huge pressure from my children, over not buying them...and everyday they keep saying...'oh so and so's mother's bought them, you're the only parents who haven't bought Tamiflu'

L(2): if you're a health professional you should have a flu vaccination as far as I'm concerned... it's irresponsible not to

L(3): I think it's important...that you will not have exposed other people to your particular flu if you had got it

These statements demonstrate that when deciding what to do about the potential risk of avian influenza the participants were indeed using 'interpersonal channels of communication' (Dunwoody and Neuwirth 1991: 12). A core question for this thesis is 'how are people assessing and evaluating risk?'; so in light of these comments that suggest the attitudes of others influence risk assessment, a more pertinent question in terms of risk communication might be: how *much* a part do others' views play?

Contextualisation

Lupton and Tulloch (2003) state that people situate risk-knowledges in the historical as well as the local (p.1). The focus group participants confirmed this premise as they compared the risk of avian influenza to common illnesses and past health scares:

Ls(4): I did not get anxious about SARS but I made a link with the the ...1918 or whenever it was

In a way to make sense of the present scare by contextualising the risk associated with it, participants talked about present and past health events (1918 pandemic, SARS, Mad Cow and AIDS) of which they had knowledge but no experience: '*from my understanding it was fed from the troops in the trenches who were in really desperate conditions*' (R:1). Illnesses of which they had experience (whooping cough, scarlet fever, cancer, salmonella, diphtheria and polio) were discussed at length, possibly to reassure themselves that as they had come through these things, they could fight off avian influenza as well: '*Well, my 19*

year old son had scarlet fever last year, well as close to scarlet fever as you could get. He was very very sick, it was, like he was hot hot sweats for weeks and weeks until a late diagnosis, a rash covering his entire body and it was only afterwards that we were told that it was probably as close as you could get to scarlet fever in today's world...but where he got it from I wouldn't have a clue' (M:4).

Joffe (1999) would say that the participants were defining themselves as 'sanitary citizens' and were positioning themselves as outside the defined risk category in order to create a sense of protection (cited in Eichelberger 2007: 1286). Personal narrative was a feature of the focus group conversations; some participants had their own stories:

Ls(4): 1918, yeah, cause I could remember my grandmother telling me stories about that and about what she did to protect my grandfather and those kind of things you know

A(2): I remember my grandmother used to talk about that cause she had it and her sister who died had it

M(2): because I know with the 1918 thing, I always remember my nanna used to say that

C(1): I, I... At the time I was pregnant and I remember um, um, not being aware of this, even though it was really topical, whatever, cause I was preoccupied, but my dad-in-law, um, went out and bought me water, and you know, wanted to stock up, [laughs] and yeah, he sort of...

These accounts have the word 'remember' in common; a factual mental verb that linguists say 'authenticates' the narrative (Chafe and Nichols 1986). This serves to make the narrative more credible and gives the story-teller authority in respect to a topic of concern (Ochs and Capps 2001:284). As the focus group were discussing an uncertain topic - a potential health risk - interspersing discussion with narratives of remembering were attempts to add certainty and make the present threat 'knowable'.

Past risk events appeared to be used as a way of 'down-playing' the severity of the risk of avian influenza; this theme of contextualisation seemed to act as a reassurance mechanism:

V(1): you know, SARS came and went, and Y2K came and went and...

J(3): I just assume people are over reacting and it's like... after 2000, you know with the whole... um... um Y2K stuff?**

C(3): well, somebody wrote in the paper that bird flu was just Y2K with feathers which was...

C(1): I was never convinced by Y2K.

These series of comments highlight an interesting contradiction: on the one hand, participants were dismissive of these past events *in terms of the risk not coming to pass*. However, it almost seems as if there was a disappointment or annoyance that this was so; they had been warned, some had gone 'to the trouble of preparing', others had worried about it, but ultimately, all their efforts seemed to be for naught. The following excerpts illustrate this sentiment further:

J(3): It's like Y2K, you know planes dropping out of the sky? ...it's not going to happen you know. It's not that you know but, the things people did, and plan, you know. I mean we were travelling overseas and we were on planes we...yeah... and we were actually oh we were in the UK in 2000 but um... you know when the clock ticked over but we'd been travelling and people yeah, people weren't flying you know...

Rs(1): I go 'what the hell is this now'? [laughs]

Reactance and Distancing

Reactions of annoyance and scorn are consistent with the psychological theory of reactance, first developed by James Brehm (1966). As previously explained in chapter 3, this theory assumes that there are 'free behaviours' that individuals know about, and reactance happens when there is a perception that these free behaviours are being threatened; for example J(3) explained that her family had been told they should not fly on the dates that they had planned. There was a feeling of annoyance about being 'dictated to' as these comments illustrate:

B(2): I had never been a particularly high income person, and you know... it's actually quite expensive....to go out and stock up and everything...

M(4): to set yourself up, that's quite a lot of money and sometimes you don't actually have that money... in one lump

People who exhibit reactance most often deliberately take an opposing stance. Against widespread travel advice at the time A(3) made this decision, albeit an opportunistic one:

*When SARS was... hit, it dropped all the prices to Asia and just nobody went **? so I went in 2004 cause the prices were really low **?... and there was...you know for the destruction it probably caused their economies, there was just nothing going on **?, it wasn't an event at all**?, it wasn't really there, it wasn't what I was hearing **?. Yeah, so with avian influenza I guess when that came along I was... not as concerned.*

Suggesting to participants that they spend their money in a certain way, or restrict or change travel plans are 'restrictions of freedoms' which can elicit emotional reactions. One of the main tenets of reactance theory is that when certain 'free' behaviours are threatened, people feel that more restrictions may follow, so in the light of repeated health-risk warnings about a possible pandemic that did not eventuate, both the strength and frequency of 'reactance' could increase.

Another reassurance mechanism that the focus groups used was 'distancing', where they removed themselves from the likelihood of an H5N1 outbreak by positioning themselves as living in a much-changed society to the ones that gave rise to past pandemics:

R(1): I just think the odds are, I was just wondering whether it was just something random that, by chance, but I think the odds are it probably wasn't because they were pretty extreme and nasty conditions. No...the trench warfare conditions were unusual in our history for a start... so the stress people were living with was pretty phenomenal... just the scale of living and dying... just living amongst that

Other participants had similar views:

C(1): Those people had such terrible things like trench foot and scabies and lice and all those sorts of things....

J(1): from my understanding it was fed from the troops in the trenches who were in really desperate conditions

One means of distancing was the taking of a sceptical and cynical stance, illustrated here as the focus groups speculated on the likelihood of an avian influenza pandemic:

J(3): I'm so sceptical at anything like this...I just don't take it seriously...I just assume people are over-reacting

P(3): whereas you know the chance of getting it was so remote...

(J:3): 'I just go 'OK, Yeah whatever'... and I just wait...I don't get all neurotic about it'

These comments were personal points of view, rather than based on anything they might have read. Discussion about this particular aspect of risk was often animated, and one group in particular almost seemed to try to outdo each other in demonstrating that they did not take the risk at all seriously:

C(3): I remember when it first came out thinking 'oh God, it's just SARS all over again, who gives a shit

G(3): I just saw it as another kind of... mass hysteria type thing

This last comment is one of several references to mass hysteria, and here, by talking about society's reaction as an abstract 'thing', the speaker is positioned as outside of that hysteria and therefore as sensible and rational:

J(3): I just thought 'oh yeah, it's just another craze, not craze, you know fruit loops, another hysteria sort of thing

L(3): you don't have to get alarmed, and go berserk

P(3): I knew it was a waste of time... a complete crazy crazy thing... it's really pie-in-the-sky this stuff

Like many public issues, debate around the veracity of warnings about the avian influenza became an opportunity for identity performance, where people could demonstrate that, unlike 'everyone else' they were not deceived by the rhetoric. Lupton (1995) calls this sense of self-identity 'subjectivity', which enables understanding of how 'people negotiate the imperatives of public health and health promotion' (p.6). In a society where individuals have been increasingly tasked with managing their own health, perhaps these statements are a way for the participants to show 'what sort of managers they were'. Further to these observations about irrational behaviour were comments that labelled these reactions to potential risk as '*crazy*', and '*completely over the top*'. They also placed responsibility for evoking these reactions on various groups, including pharmaceutical companies:

W(4): the cynical part of me always thinks 'how much of this panic is being engendered by people just wanting to make money?'

B(4): watched the panic increase as the pharmaceuticals got into the act

Warning Fatigue

Some of the participants were cognisant about what could happen or had happened as a result of continuing hype:

Ls(4): But what happens when it doesn't happen at the time of all the talk is that people then get that kind of 'cry wolf' syndrome happening

K(2): 'or a crisis fatigue'

R(1): they cried wolf on that one

The biggest problem that warning fatigue creates is the tendency for people to ignore future warnings, and the discussions amongst the focus group members would seem to confirm this. Embedded within the 'warning fatigue' debate are questions of rationality: what sort of reaction to a risk is rational, and who gets to judge? The discussions revealed that it really seems to depend on whether the risk materialises; those who 'reacted' to the threat are considered prudent in the event that it happened as predicted. However, when the risk passes without the anticipated calamity, those same people are often ridiculed: '*the phrase {in a silly child's voice} 'the sky is falling, the sky is falling' kept going through my mind*' (A:1) [and] '*in a silly, 'molly-coddling' voice} 'everybody's got those little bottles in their bags, don't touch the supermarket trolley*' (G:4). This last comment harks back to the discussion on reactance theory, and could be interpreted as irritation that the advertising industry strongly recommends a hygiene practice that, this participant thinks, is patently ridiculous. Others personalised the hype describing it as a sort of 'fatigue':

E(2): cause we keep hearing it. And I was horribly, you know, in Iraq, every...there's so much violence going on that when we hear that another bombs gone off and has killed 10 people, it really doesn't have that great an effect

B(2): you know, in the end I just kind of become immune to it all...

It seemed that uncertainty was underpinning many of these comments, with some of the participants wanting to eliminate the uncertainty by taking a fatalistic stance:

A(4): I'll be dead in the first wave anyway so that's OK if it hits, it hits, I'll die or survive that's not, you know, a decision I can make. It's beyond my control

M(2): the chance of you surviving is just lap-of-the-gods stuff

L(4): there's a certain sense that it's out of our control, like the cancers that we're getting and so on

These remarks are in contrast to past comments about personally experienced family health issues or sceptical views, in that they are removed and 'outside the self'. By acknowledging that the risk was so large it was out of their control, they could abdicate taking responsibility for trying to manage it, or explain why they hadn't bothered to react to it at all.

Credibility

An important sub-theme was that of trustworthiness:

M(2): it depends on the source once again the credibility, and the amount, if you're hearing it from a number of credible sources or it's just coming from one, um...

Mx(4): so who in the midst of all these things are the commentators THAT we trust

J(1): the hospital organisations lend a lot of credibility to that sort of a rumour

K(2): I think people tend to pay attention to flu's or tsunamis or catastrophes if it becomes what I call a credible threat, and credibility is lent to the threat um... if it's um... promulgated by such people as the World Health Organisation or national governments or you know, figures of leadership around the world

The concept of credibility is central to most existing risk communication literature, in that authors posit that trust and credibility are 'critical elements in effective risk management and communication' (Covello et al. 1989:132), and if the communicator is a scientist and judged as being impartial and knowledgeable, so much the better (p.142). It is interesting to see that, in terms of whether to believe a threat is real or not, credibility is viewed by the participants as an important factor. As K(2) said: 'so I sort of take [M's] view and say there are a couple of things that you can do, you can sort of listen to various local experts and say 'well if that's what their recommendation is, that seems sensible'.

Manageability

Experts and Organisations

In the introduction of this chapter, I stated that the theme of risk assessment can be found throughout all of the discussions, and even though this particular discussion is about veracity and credibility, the participants are 'sorting through' these ideas *in order to assess their personal risk* from avian influenza as reported to them by the media. For example, the comments below imply that because various organisations were involved in communicating risk about the avian influenza, then the risk must be more serious:

J(1): the feeling I got was that the health-care industry took the threat of pandemic influenza reasonably seriously

A(2): I remember thinking 'wow, they must be serious if they're actually pooling all the services together'

R(1): that health boards were taking it seriously, as in the potential, I do seem to recall going on about the risk

M(2): ... it was coming out from World Health, and they're learning all the time, but it just doesn't hit once... So I took it quite seriously, cause these people were quite linked into um... what was going on in World Health, so they were getting a lot of... and the data they were giving me was actually very serious

This sub-theme of 'authority' included 'experts', although 'expert in what' was often not clarified 'you can sort of listen to various local experts and say 'well if that's what their recommendation is, that seems sensible' (K:2). Moreover, in the participants' search for clarity, accessing expert opinion sometimes did not seem to help:

C(1): and I spoke to people who I thought um... were...um... experts and um, yeah, I just did not come out, I don't think very much wiser

Rs(1): we assume their experts disagree all the time on things, and perhaps that's at the core of it

New Zealand organisations such as Civil Defence, the Ministry of Health and local health boards, the World Health Organisation (WHO) and the United Nations were all institutions to which the focus group members attributed 'expertise' or knowledge about the avian influenza. Spokespeople, such as virologist Lance Jennings, embody expert advice, and as such are mediators between lay individuals and the authorities (Miller and Rose 1993):

L(4): and the other thing I remember was when I... we first came to Christchurch um, at the beginning of 2006 I was asked to speak at the conference, and Lance Jennings was speaking before me, and he's Mr Bird Flu, Mr Respiratory Pandemic Diseases person in New Zealand really, based in Christchurch and he did a very fascinating presentation, very scientific and he um, they're really serious about it

and the CDHB still has a large pandemic, kind of um, policy and plan and everything in place and they meet regularly because... ah it could happen.

G(3): I think he's says it's not 'if', it's 'when'

The participants not only talked about the credibility of people and the organisations that they represented, but they also questioned motivations for communicating the risk, as this conversation from the fourth focus group illustrates:

G: but who's paying for Lance Jennings

W: that's my cynical streak coming through

L: I kind-of thought that until those sorts of people started coming...

G: there's no money in it for Lance Jennings to keep saying 'yes, it's coming' is there?

W: oh no, you just need to have the behind that to keep pushing it... I mean

L: He's not a drug company though

G: no he's not but he's still out there reporting it's coming isn't he?

W: you've got to have enough money to have research ... to... to have the research financed as well

L: He's a physician as well...

M(4): The pharmaceutical companies will only come on board when there's money involved

*A(3): and the media want to sell papers *?*... they're there to make money*

The participants debated whether the organisations who broadcast the risk messages had hidden agendas, which seemed to add to their uncertainty:

P(3): I think they have to over react and then it's up to is to do what we want to do but if they under react, they will subsequently be blamed

J(3): I always think when I get that sort of stuff in the mail I just think it's government departments covering their arses

J(1): I think the the... people like the health boards, as I said earlier, I think they have to take, take things seriously, I think they'd be heavily criticised if they did not take them seriously.

Rs(1): I just assumed it was just to cover their arses though...like I remember thinking, oh, they just have to say this for...in case... If anything goes wrong, they have to show they've done everything possible, I assumed was the case

Public Health and Governmentality

With the creation of the very first Public Health Act (1872),¹⁰³ an organised system of public health was first introduced in New Zealand. This means that over five generations of New Zealanders have lived within the framework of public health, been subjected to state interventions and health promotions and have conformed to the government's health imperatives and practices. As Lupton (1995) points out, the institution of public health has

¹⁰³ For a brief overview of Public Health in New Zealand see Appendix VII

'served as a network of expert advice...directed at improving individuals' health through self-regulation' (p.10). The notion of self-regulation is central to the concept of governmentality; Dean (1991) states that governmentality includes 'forms of treatment, relief, discipline, deterrence and administration' (p.9), which is perhaps why some of the participants showed that they had responded in 'recommended ways' to the idea of managing their personal risk from avian influenza:

M(2): I take these, sort of civil defence stuff quite seriously

E(2): because I mean I took a little bit of notice of things um...public health...civil defence things, you know

*G(4): I've a big box in our garage which I've completely waterproofed and earthquake proof and in the box is about 50 bottles of empty 1.5 litre fizzy bottles which have been sterilized and filled with water right to the top ** and um...canned fruit and baked beans and...*

E(2): and you have these...you know...whatever they are, these infomercials that tell you to get ready and its like 'ooh', I don't quite know what I was supposed to get ready for, but I did actually go and buy some baked beans

Other participants did not seem to be worried about 'what they should do', and demonstrated an expectation that large social institutions such as the government or civil defence would handle any health crisis. These following comments are entirely logical in light of New Zealand's long-standing and omnipresent public health system:

B(2): I very much grew up with that Social Welfare mentality, you know...that if things went wrong... 'oh well, that the government would look after you'

R(1): yeah that's right, There's a civil defence unit that prepared for it all the time

C(3):Yeah, I guess, I guess, because of when I grew up and everything there's always that little thing of thinking 'oh well, the government will come and save me'

Therefore, when the media are warning individuals about risk from avian influenza, the participants' conversations revealed that there was an assumption that, in governmental organisations such as civil defence, the health threat of avian influenza had already been taken care of.

Related to organisations and institutions that 'take care of everyday life' are large-scale infrastructures, such as hospitals, local city councils, police and utility companies: 'you have to recognise that you're not going to be able to rely on the same number of people as you would normally...that people are either going to be locked...whether they're locked down because of a pandemic or...you might not be able to go to hospital (Mx:4). The groups that engaged with the potential risk of avian influenza, extrapolated out the consequences of a large-scale pandemic and hypothesized about possible scenarios. After discussing the

possible breakdown on infrastructures like rubbish collection and health care, one participant (who was to an extent, self-sufficient, owning her own septic tank, water supply and having a large garden) commented:

D(2): so a health thing would affect me more than a national disaster, I hadn't really taken that on board

Additional concerns about infrastructure failure included:

K(2): or things like the electricity fails, and it's in the middle of winter

A(2): mass graves, you know the details of documenting, burying people

A(4): I mean you can have 8 rubbish bags piled up outside one house you imagine if those aren't collected for even just one week...

These comments were in contrast to other dialogue, in that they were an acknowledgment that they (the participants) were part of a wider community, and despite some of the earlier bravado rhetoric - 'I live in a 'she'll be right land' (B:2) [and] 'I'm bulletproof' (K:2) - people began to realise that, in the event of a pandemic, they could be vulnerable:

M(4): look you know, one out of every eight people will be unable to function, doctors won't be available, 'cause nursing staff won't be available, 'cause hospitals will be compromised and you won't be able to go to them because of the fear of infection and you're thinking...

B(2): and you watch out for raw sewage...

E: I can't see clearly a plan because people would be dying not from the bird flu but from lack of... there'd have to be some sort of supply police coming round and volunteers

A(2): but in that situation money wouldn't do you any good...because there's nothing to buy, there's no-one to pay

Organisations and the effectiveness of infrastructures, whilst talked about in risk mitigation terms, were also part of the preparation and preparedness theme.

Preparation, Preparedness and Protection

L(4): So as you say, if it's not about 'if', it's 'when', we have to be prepared with isolation techniques....

As mentioned earlier, in relation to the public health system, there was almost a 'taken-for-grantedness' amongst the participants that the large organisations would have prepared for the possibility of a large-scale pandemic, and participants who had stockpiled in the event of emergency were in the minority.

One such person explained:

M(2): I actually took it very seriously, I was one of those people who did get the kits... I bought certain things they were sort of like 'why have we got all of these' you know, candles and batteries and torches and all these things... then I put them into backpacks so that they could sort of take them if they wanted to

Most participants treated such preparation as an over-reaction to the risk, and they wanted to distance themselves from similar actions as described above:

B(2): the thought of stocking up on stuff because there might be a disease just never occurred to me

D(2): I'd probably just get some Nurofen...and put a cross on the door...

C(3): I went and bought a few cans which are still rolling around in the bottom of the pantry

It was interesting to note that, without exception, those participants who professed to taking stocking up seriously were the ones who still had dependent children: 'yeah, if you've got someone whose dependent on you... um more concerned about looking after your own health (B:2):

Ls(4): if people start getting really sick then I might kind of do a bit of a lock down here and I was imagining this sort of scenario with my kids who are young teenagers, or in their 20's and don't take that sort of thing at all with the anxiety like I might do and imagining myself kind of getting into situations where I'd have to talk that through with them, how would I do that and that sort of thing, so I must have gotten pretty... I must have thought about to quite an extent to get into that...

V(1): I've got a radio so I can find out what's going on, I've got candles, I've got a torch, I've got stuff because if the kid is in bed...

M(2): I just made light of it with the kids, this is what we should do to make sure you can cope with what's never going to happen

V(1): I've got friends who are husband and wife are both doctors at the hospital and I remember her talking about it saying...like...not having made any great plans but they had talked about if... there was some sort of outbreak that one of them would step down and stay home with the children and..

One mother of four had thought through 'being prepared' very seriously:

G(4): but if you've got a stockpile, you need a gun... yeah, your neighbours will know you've got the stockpile so they'll come round to get it, so you'll need a gun as well

The group members with dependent children engaged in risk scenarios and hypothetical situations, and, as the comments above illustrate, had considered different possibilities before discussing them in the focus group situation. The difference between comments

from participants with close family members, and those who lived on their own was quite marked, and raises questions whether a 'one size fits all' model of risk communication could ever work effectively.

Geography/Proximity

Discussion about the protection of oneself and one's family, often led to wider themes of protection, that of guarding New Zealand's geographic boundaries.

B(2): I've always had this perception that we watch our borders really really diligently

Mx(4): I remember reading, one of the other advantages for New Zealand was that we are one of the few countries, 'a)' likely to be affected, but 'b)' able to shut down our borders

M(2): we're always so vigilant anyway that it probably won't get here

Whilst this could be seen as another way to justify why there was no need for personal protection processes, it does indicate a change in focus, from the personal (me, my family) to a much wider conceptualization of identity: that of someone *as part of* the community that is New Zealand. This indicates that there is a strong sense that there are other things 'outside of oneself' that, in a pandemic situation, could work to protect or hinder. For this reason perhaps, proximity and geographic isolation were sub-themes that appeared frequently in the focus groups discussion. The fact that New Zealand was 'quite isolated geographically' (E:2), seemed to lessen the anxiety about the risk:

W(4): I think my first thoughts were 'it's very far away, it's Asia, and you think 'ah, it's not really likely to come here

J(3): it won't affect it...you know you'll be safe down here'

L(4): New Zealand's just a tiny speck and our population could either go like that or we could remain isolated from the whole thing

Additionally, there was an acknowledgment about New Zealand's lack of proximity to other (reassuringly) faraway places:

G(3): we aren't that worried because it's 'over there'

B(2): and I think for me bird flu was something that happens to people 'over there'

More often than not however, the 'proximity sub-theme' highlighted the relative safety of New Zealanders compared to other people:

J(3): it's because we can sit in New Zealand and it probably won't be us

Mx(4): you know people are immigrating all the time because they think we're safe down here

Proximity discussions included talk about the advantages of New Zealand being ‘the last people to get anything that comes along’(G:3):

J(3): it wouldn't be too bad if the pandemic started somewhere else...you'd be able to see what happened elsewhere and then tailor your responses

Preparation and protection themes enabled talk about practical stockpiling and geographical distancing, and was also evidenced in sub-themes of vaccinations, antivirals and expert medical advice.

Pharmaceuticals and Science

The preparation sub-theme - who is preparing for and/or getting worried about avian influenza - was linked to a personal ability to confront and cope with problems associated with avoiding or dealing with avian influenza. An assumption that ‘science’ or medical expertise will be at the forefront of combating an avian influenza outbreak was expressed in other comments and was part of a ‘risk-reducing’ rationalisation:

M(4): it's not going to happen again, medical science will stop that

K(2): I mean the advances in medical sciences in the last 100 years has been phenomenal

W(4): you seem to think in today's day and age that medical science will stop it spreading

Here, the last comment refers to science as a kind of agent, as something that will act ‘on behalf of them’; additionally, in the same vein, comments that society had benefited greatly from scientific and medical advances in vaccines and antivirals were not questioned: ‘well, we should be glad for pharmaceuticals’ (L:4). However, in relation to ‘medical’ protection from or mitigation of the effects from contracting avian influenza, participants were sceptical:

C(1): well, I did heaps of research into immunisation and it was conflicting

L(4): But I've had this conversation with nurses and a lot of them are very against the flu vaccination

The talk about immunisations and vaccines often progressed to discussions about specific antivirals promoted by pharmaceutical companies and health departments as effective ways to combat avian influenza. However, this was not in order to increase knowledge about antivirals, and as the conversation from the third group below shows, there was uncertainty as to whether Tamiflu worked. The conversations revolved around availability and efficacy:

P(3): and how much of it's driven by the, you know, the pharmaceutical companies making millions and millions of dollars on some [oh, that's a very different story]

J(3): yeah, all that Tamiflu

P: yeah

J(3): how much did the government spend on that stuff

[oh heaps]

P(3): it's scary and nobody knows if a generic thing like Tamiflu even worked

J(3): exactly, cause if it mutated as it would need to do, to actually do some serious damage to the population in New Zealand, then yeah, who knows if Tamiflu would even touch it

P(3): there were a lot of studies, well yeah articles in the paper were saying 'well, it wouldn't make any difference', it would make a difference for a certain percentage but overall it may not be effective

R(1): the department was putting out a huge budget for buying this Tamiflu tablets, and then new evidence came out that it wasn't even very effective

A(2): they made it sound like Tamiflu was the God didn't they?

Mutation

The following comments illustrate a sub-theme of scientific information where the participants used the word 'mutate' to talk about the scientific rationale for concern about avian influenza:

Ls(4): it was when they started to talk about it mutating, shifting to human-to-human contact

C(4): all it will take is a minor mutation in the flu virus for it to be transferable from human-to-human

'Mutate' was used to flag the seriousness of the risk, and would often change the tone of the discussion from light-hearted to more considered: *'and to me it's the potential of what it could be, you know, looking at it scientifically, you know, it could mutate, it's theoretically possible'* D(2). The possibility of mutation had a sobering effect on the participants' conversation, and in these discussions the outcome appeared less certain. The word 'mutate' was a key linguistic signifier, without which many of the newspaper articles that suggested that avian influenza was a significant risk, would have been unremarkable: *'but the... this whole point about this particular bug is that it mutates'* (L:3) [and] *'I thought the genetic make-up was such that it was of a higher risk'* (C:3).

The likelihood of the H5N1 epidemic or pandemic revolves around the possibility of the virus mutating from an avian-bound virus, to one that could cross over from birds to humans and then from human-to-human. Brown and Crawford (2009) describe a discourse of patient vulnerability and drug resistance, where the responsibility for protection from infection has shifted from the hospitals to the immune-compromised individual. This rhetoric communicates to the public that they are now constantly susceptible to the 'Darwinian

processes of microbe mutation that evades all human attempts at elimination' (p:508). In the presence of the word 'mutate', words like 'potential', 'could', 'maybe', and 'if' somewhat lose their effect as linguistic caveats, but the following participants' comments purposely drew attention back to these words:

C(3): the virus could pass if it mutates and those are big 'ifs', and it just hasn't happened so... yeah

R(1): But first you've got to prove that it's actually going to mutate in a form that we've got no protection against so it still that...

G(3): what's their evidence for the mutation, and there was none

A(3): it could mutate but it doesn't mean it's going to mutate into a dangerous virus, it could mutate a hundred times and still be safe

Hygiene

Accessing and using commercially developed drugs was discussed as a way of taking responsibility for protection against getting sick. These conversations often developed into debates that demonstrated another sub-theme: that of hygiene - 'But it seems to me that there are things you can do so that you don't have to use pharmaceuticals' (B:2), and was an idea that resonated with several of the participants. Focus group members saw hygiene as necessary 'we've got quite stringent hygiene practices' (A:2), but they saw it also as something that had contributed to the agreed problem of lowered immunity generally: 'and they're not eating dirt and they're not washing their hands like we all used to' (M:4). Media representations of contagion and hygiene in the form of television campaigns came in for particular ridicule:

M(4): it does and on the ad, on TV, you see children drawing with their crayons or their felt pens or something and then it shows ...the focus goes on the jar of felt pens and then all of a sudden there's these fluorescent germs all crawling all over the felt pens and she comes with her aerosol can of Dettol... and sprays all the pens

C: you might as well be wiping the place down with a bit of raw chicken [laughs]

This derisive attitude towards media over-simplification of infection is a good example of the difficulty that the disciplines of science and medicine have with communicating complex concepts of disease. As Allan, Anderson and Petersen (2005) note: 'the preferred models of the scientist do not translate easily into the reportorial strategies of the journalist anxious to convey their meaning to the intended audience' (p.169). Moreover, Miller (1986) asserts that even people who are interested in scientific concepts find them hard to understand. He calls these people 'the attentive public', (a category into which most of the focus group participants fall), but notes that most of the lay public do not pay

attention to medical matters, which makes the communication of important scientific and technological information, such as health risks, problematic.

Part of the risk assessment discussions were about how people and nations other than New Zealand were preparing, and how they were contributing to the global health risk of avian influenza. Whilst this talk was part of the way the group constructed risk, it was a narrative that was distinct, and so warranted being analysed as a major theme.

OTHERING

Crawford (1994) and Joffe (1999) state that individuals and groups may project the risk of infection and death onto an 'Other' in order to reduce the powerlessness experienced during a deadly epidemic. This observation was useful when analysing various and overt 'othering' devices that were used by the participants during their discussion. In groups where consensus about a topic has been reached, there was little or no debate about statements such as '*very little point in doing anything because they are all so crowded they're all going to be killed off in one hit anyway*' (M:2). Van Djik's (1992) claims that when there are no opposing views, overtly stigmatizing or racist comments can be expressed more strongly. I think this phenomenon played a part in some of these conversations.

The identification of a risk group is part of a 'boundary maintenance' that creates and legitimizes the stigmatization of already marginalized populations, resulting in their identification with a disease (Goldin 1994). The media's role in this identification is key, as it promulgates a framework by which potential health risks can be understood by distant 'often unaffected' populations (Ungar 1998), pronouncing attribution and causation, as well as using 'a vocabulary of risk and responsibility' (Eichelberger 2007:1285).

'Us and Them'

The use of othering words such as 'They', over-'There', 'Those' and 'Them' were significant in the discussions by the focus groups; in the excerpts below 'they' indicates Asians, and 'them' signifies chickens:

J(3): seeing how badly [laughs] they prepare meat and the way it's stored and the way it's left open out in the sun and things and I thought 'well'

J(1): those other countries that...as you say...they sort of have their faces up against them... living with them... rolling in them just about

The participants discussed the health threat through a 'cultural lens' in ways that were reflective of a positive positioning of New Zealand culture:

B(2): But I know that, I don't know, we do seem to have a sort of thing culturally where we're into toughing it out?**

D(2): we don't talk about the kiwi 'she'll be right' thing for nothing. We're like 'ok, we'll just, you know, we can fix it with number eight wire'

and negative positioning of other cultures:

C(4): that case in Turkey came on the news they were speaking about his family and I think the son had died and the father was unwell, but they wouldn't kill the chickens

J(3): in China they all have their own chickens they all have you know

M(4): but it will be people in Asia and Africa and India and things that will cop it and we'll be like 'oh well'...

R(1): Asian people, you know, cheek-by-jowl with chickens, and handling them and living with them... all these villages of people handling chickens...Asian people handling chickens

There was an identification with other Western cultures and, despite being geographically closer to Asian cultures, there seemed to be an assumption that New Zealanders would be more at risk if cultures similar to its own were to have an avian influenza outbreak:

J(1): and as you were saying if it was in America or France we'd look at it and think 'oh well, it's happening to them, it could happen to us'

Mx(4): the fact that it had spread to Europe was somehow worse for us...

When talking about other countries, the participants speculated as to why those countries had outbreaks of avian influenza. Inferred in these discussions but not explicitly stated, were the reasons that New Zealand did not have it. These comments have overtones of suspicion:

P(3): ...I couldn't trust the China authorities...I suspect the real number is ten or hundred times to what they're actually admitting.

A(3): well, we're probably not getting the truth because the Chinese authorities aren't declaring the true numbers

Whereas these following comments seemed to imply that the reason for infection originated from the citizens themselves:

R(1): they often showed shots of Asian people, you know, cheek-by-jowl with chickens, and handling them and living with them

C(4): you sort of make a, small ... a few small leaps from 'OK, this guys not going to kill his chickens and you know, what's the chances that the rest of the village um... becoming infected'... um

L(4): and you go just a couple of steps on from that and you think 'well, that's pretty stupid' and before you know it there's going to be loads of people really sick and....

Or the conditions in which they lived:

M(4): it like a lower socio-economic...a 'village-y' sort of situation, people would've probably be dying of this that and the next thing...

W(4): but they talked about the conditions they lived in and how chickens lived in stacks and other food was underneath and stuff like that and if those conditions weren't changed and they probably wouldn't be because China used a very cheap labour force and those who got infected often went back to the countryside where they come from

Mx(4): people who live with their poultry...that was the thing that was coming through that Indonesia and so on who have them under the house or in the house or...

As mentioned previously, discussions about 'they' and 'them' and 'those people' seemed to function as another distancing device, between 'them and us' or 'they and we'. Interwoven within the conversations that juxtaposed 'they' with 'we', was a presumption that, in the eventuality of H5N1 coming to New Zealand, the New Zealanders' 'way of life' would somehow be a mitigating protection mechanism:

B(2): that was a lot of what people were saying the whole time was the way we live and interact with our bird life is so totally different to those other countries that...

D(2): also we did not live in those hugely public places, you know we get on a bus and there is usually 6 inches between us and the next person...so we have that luxury

J(1): I think we do tend to take the attitude that our lifestyle is so far removed from those people... that is probably won't happen to us in the same way

Eichelberger (2007) claims that 'in this process of othering, disease origins and risk of infection are explained through moralizing metaphors of cultural superiority so as to locate risk and responsibility among marginalized populations' (p.1283). The 'othering' discourse was also evidenced in a 'not-in-New Zealand' sub-theme:

A(2): and I think for me bird flu was something that happens to people 'over there'...and it hadn't affected anybody that I knew and so it was just this kind of 'thing'

W(4): that it wouldn't be too bad if the pandemic started somewhere else

A(3): I mean I felt like I was fine over in New Zealand...and I sort of think well yeah, it's because we can sit in New Zealand and it probably won't be us

J(3): ...it won't affect us...yeah, I've heard people say that sort of thing and that's the reason they come down here...

L(4): we do have a thing here I think though about being away from everything...I don't know if it's a protected thing or a safe or an isolated

'Death by plague' a natural process

In the cue article, Dr David Nabarro of the World Health Organisation warned that the number of people that could be killed from an avian influenza pandemic 'could be anything between 5 million and 150 million'. In responding to that prediction J(3) said 'we won't be the 150 million' which is a sentiment also found in this comment: 'and they're very very poor people, and you just think 'ooer...' {doubtful sound} still not really affecting us' (W:4).

The idea that large numbers could die as a result of the possible pandemic was explored in one group in particular which resulted in an exchange of ideas about the merits of losing a large body of people, and was couched in terms of it being a good and natural process:

P(3): as hugely populated as it is, something has to change and something has to give and for instance, 'natures way'. At some point something's gotta bring the population down – we can't do it well, nature will do it... so I don't see it necessarily, in the big scheme of things, a bad thing

C(3): as you were saying, there's a natural cycle to things and it wouldn't be bad if you know, a few million died anyway

P(3): to me I don't see it as necessarily a bad thing if it killed 150 million people around the world

In order to emphasise this point, this comment cited evolution and recent New Zealand history:

G(3): well it could just be an evolutionary thing where um...if we did succumb to it we would eventually become immune to it...like when Europeans brought croup to the Maori, and a lot of them were wiped out

Focus group 3 was not the only group to discuss this in this manner, with China once again named as a country that 'could afford to lose a few':

C(4): I was going to say if they were all Chinese you wouldn't bat an eyelid [laughs]

M(4): I mean it's ghastly, but they can have 180 thousand people killed in a decent earthquake, can't they

These comments that reflect what Farmer (1992) calls a tendency to 'label the sick as wilfully dangerous and inferior' (cited in Eichelberger 2007: 1293), where the process of stigmatisation enables the stigmatised to be thought about, not as human beings who have feelings, family, friends, but almost as an abstract concept. Once this happens, then regarding loss of life on a grand scale as a natural event, which 'is needed now and again', becomes morally acceptable.

Othering and the positioning of one's self in relation to 'the other' is a form of racism, which serves to privilege the dominant view, in this instance the New Zealand western

first-world view, over that of the third-world Asian 'negative other'. This sort of talk enhances group membership, contributes to a sense of belonging, which was evident in the group¹⁰⁴ which had more examples of this type of talk than the other groups.

During one of these 'othering' discussions, one of the focus group members offered a contrary comment:

J(3): 'oh well you know, China can stand to lose a few million people, they've got lots' and I'm like um...yes, but they all have children and they have mothers and they have fathers and they've got lives and they're as valid as we are [laughs] so just because they live in a big country doesn't meant they are less value'

Although this comment seems in contradiction to the discussion that went before, van Dijk's (1992) theory of denial of racism makes sense of this comment. He argues that: 'language users who say negative things about minorities are well aware of the fact that they may be understood as breaking the social norm of tolerance or acceptance' (p.89). The above comment by (J:3) is a defence device that is part of a strategy of impression management and serves as a face-saving mechanism. 'Othering' should not be regarded as just a cognitive racial response, but as a way of thinking that can have real and lasting consequences; as Eichelberger (2007) suggests, 'othering' can contribute to the way a health risk is socially constructed, and in the event of a pandemic eventuating, can 'hamper the containment of contagion and shape further responses to a disease' (p.1293).

There is no doubt that without the mass media, fast and efficient communication about health risks, especially in the event of a potential pandemic, would not be possible. Nonetheless, the media can frame and endorse misleading discourses about risk, adding to already established notions of prejudice and stigma. The focus group participants referred to instances where the media was their source of information about avian influenza:

R(1): they were saying that, you know, OK, once it started there, they were saying people living with chickens could have it mutated and they would catch it and it would spread there

B(4): I just watched the newspapers to see who was dying where and then began to monitor when...

M(4): gave you an inside view, turned it inside out a bit more to what the media was saying and some of the facts and figures we had and I actually learnt from that that it came from Southern China, and how the people had got there and you're talking about it being spread virally.

Mx(4): we were hugely bombarded by the media. It was on every news and if you watch news, it just kept coming up and coming up...

¹⁰⁴ Focus group 3

The substantive theme of 'othering' shows how some of the participants expressed these ideas of intolerance, which may have been cultural reflections of the society in which they lived, or personal views influenced in part, by what was printed in the media. The last section 'media' explores the participants' general impressions of the media, and in particular what they saw as good media reporting of health risks, and what they felt was lacking, or needed in order for them to understand and respond to risk messages in a way that helped but not hindered them.

MEDIA

Individuals rely on the media to provide their main source of information about science and environmental-related risks, as these risks are often not directly experienced (Allan 2002; Signorielli 1993; Ader 1995; cited in Dudo et al. 2007:430). 'Media' constituted a substantive theme, quite possibly because all participants had personally experienced 'instances' of media reporting of avian influenza, and had expectations of the role they thought the media should play in mediating between them and risk issues about which they had no experience. Additionally, I had introduced the focus group sessions by providing them with a cue article from the New Zealand media, which gave the discussions a specific focus.

Opinions and Views

The first part of the media theme section reflects opinions and views of the participants about various aspects of the media. These descriptions are important as they show the different ways the participants engaged with the media, and how they perceived the way the media reported risk. The 'media' referred to in the focus group transcripts was predominantly print media, however there were a few references to the internet and television. In the following analysis of the focus groups views on the media's reporting of avian influenza, references to 'they' by the participants refers to the media or journalists, unless stated otherwise. In reading through the comments, I found few positive references to the media; for example, the following rationales for why the media was printing stories:

R(1): well I don't think they're doing it deliberately, but they genuinely think it's a story, well there's something in it, you know

Rs(1): they follow up stories and they'll create stories in order to...um.. sell papers.. to have something interesting that people want to buy it for

Some participants were entirely dismissive of the value of print or television media for anything useful: *'on any night you can get a 30 second sound bite... about the most...what you would hope to be the appropriate information but that wasn't probably the case... so you get, at best 30 seconds with 5 seconds interview with somebody and that would it for the night... um... in the papers you probably get possibly a better um... (G:3). J(3) finds a*

solution for poor television reporting in another type of mass media: the internet: *'I find trawling the internet way more useful... if you've got the time you can actually find so much more from all sorts of different sources'*. Ironically the sites they were accessing were probably newspapers from other countries: *'I'll go to the internet and I'll look at British stuff and I'll look at American papers'* (A:3). The following question embodies one of the most significant conundrums about the role of the media:

M(4): to what extent does the media report the news and what extent does the media create the news?

In attempting to answer this question, some participants speculated where the story about the risk might have originated, or who was originally responsible for bringing it to the public attention: *'my picture of the scenario was that, this organisation generated the initial reports, the media picked it up because it was a story'* (R:1) [and] *'how did it get to the media, was it the health organisations organising it?'* (M:4). However, others were unequivocal in why stories were printed, which linked into the earlier sceptical discourse:

J(3): the media decides an issue and it doesn't matter how crazy it sounds

V(1): they want to be the first, they wanna get out there and so they just grab it and... and...run... whether it gets blown up or not...and then, it gets dealt with later

J(1): they want to breed the whole story so that people will keep on reading it every day, and keen for the next fact about it

There were also references to hype and scaremongering, which, in line with the social amplification of risk framework (SARF), is seen as originating from the media:

A(2): I just thought it was a huge media hype

M(2): I agree it was hyped, it was scaremongering

K(2): if you look at this article, it starts off with 150 million people could die, I mean that's, call it scaremongering but what it is

J(3):... I guess I'd dismissed it as kind of over, you know it was you know, media hype

These statements reflect what Brown (2003) observed, when he said that cynicism, disengagement and a decline in trust in science and science-based policies result when there are too many early warnings. Sandman (1993) also agrees that the exaggeration of risk can cause an undermining of trust, which the following comments confirm:

A(3):so...you know it's pretty hard to trust what you're actually reading...or hearing

Rs(1):... like, you know, nothing happened with SARS, nothings going to happen to me, it's all a load of shit'

P(3): ah, I think it diminishes credence cause it...ah... adds to the scaremongering ah... thing. They're not there to give you information on the... it wasn't given there to provide information it was there to scare you, into thinking you should do something

The overall tone of the comments about the media was negative with the following typical:

R(1): I guess I regard the media as um ... as... ah... pretty fallible... which is always um... sort of inflammatory, it's always like 'oh my God'...

C(1): I do get the feeling I should just stop reading the paper to be honest [laughs], because you just don't know how much of it is drivel...

G(3): I only watch TV, maybe one programme a week, possibly, but the news I haven't watched for a couple of years

*C(3): it is very negative,
[agreement]*

J(3): fluffy dogs always win out

L(3): the quality of the news here is terrible, that what really... soft

M(2): I don't find the media very intelligent on the whole

These and other comments confirmed that the media was not well regarded, and instead of clarifying issues, added to the uncertainty:

Rs(1): I've noticed that too, that the reporter will include lots of different facts but put their interpretation on it but then include in the facts for you to put another interpretation on it?**

P(3): a lot of these articles are discussing those points of view, you know, arguing whether it's likely to happen or not. But you know, just to throw out something like that doesn't...it's meaningless

Ways the media reported H5N1

Once a story had been 'broken' by the media, the way in which it was reported in the media was discussed at length:

B(2): every other thing you pick up in the media these days is 'wahhh' {sings a high note} drama about something

E(2): you know, I do seem to think the way it was reported, it sort of gave you no hope

Descriptive phrases such as 'beating/ratcheting/bombarded/hyping it up' were used by the participants, and there were accusations of sensationalism and the use of emotive language:

L(4): it's the way the media grabs it, sensationalises it and presents it, cause we find that with the press about lots of things

J(3): I mean the media drops things... as soon as they're not sensational – boom – onto the next thing

D(2): this was on the radio, there was exactly that, using emotive language and...

J(3): yeah, the sensational headlines do the sell the papers

Implicit in some of these conversations was that the media held a kind of power, and were able to change or influence what people thought about, or paid attention to:

R(1): when they were beating up um... patriotic sentiments, really manipulating public opinion

B(4): but unless we saw it in the media that was the only time it became real

B(2): because you don't hear about it anymore you don't tend to think about it anymore

Perhaps this comment explains why some people think the media can influence: 'the public take whatever they are presented with, they accept it uncritically and they don't look into things'(C:1), but J(3) cautions: 'you take it verbatim that it's true... but you should check it out'. By stating these views, the participants were positioning themselves as not engaging in this type of behaviour, and as critical and discriminating. Through their discussions, they wanted to stress that they had substantial knowledge of how the media operated, especially as some of the participants declared that they did or had worked within the media field:

Rs(1): Yep, yes, I've sent things off myself to the media... that have not been checked and printed verbatim... I'm like... well, hey, I could just write up anything... and you're going to print it? Cool, thanks!

B(2): what I find interesting about this, as a person who used to be a journalist, is that knowing that all of these paths can be chopped off anytime at the bottom, but the one at the bottom, which could've easily been whipped off, but the one at the bottom stayed there

R(1): I've known from personal experience how they distort and get things wrong and how they're biased

J(3): well if you think about reporting. I mean coming from the media [laughs], I have in my week, have to deal with 20 different issues... I don't know about any of them, I'm just a journalist so I have to rely on the people I talk to... you know, and... work out and hope they know what they're talking about and often I don't have time to go and talk to 4 different people to find out if it all marries up and they're all about the same therefore it must be kinda true, because you've got deadlines and you don't have time and you do the best you can and it is about... I mean for me... but and it's also the pressure...

What the participants wanted from the media

In order to make sense of the criticism that the media was not doing a very good job, it was important to find out what the participants wanted from the media. For example, were there explicit ways that the participants wanted the media to behave, or ways of communicating that were preferable to others? Certainly, the criticisms underscored ways of communicating that the participants did not like which implies that there must be approaches that the participants prefer. The remainder of this section addresses this sizeable sub-theme:

C(3): cause I find often that reporters don't... they don't always understand what they read, then they can't impart the information exactly and even, like even reasonable reporters, you often find they've got the wrong end of the stick, they've not understood this point, they've not understood that point

A(3): overview that um...like a journalists not trained in all these branches of science that you need to be

J(3): yeah, they should be trained to analyse, I mean I'm not, I'm not but you know... to analyse or to... you know, not just take things at face value

This observation about the lack of expertise shown by reporters when communicating information, showed that these participants acknowledged the complicated interrelation between the scientific community and journalistic reporting which sometimes manifested in a lack of expertise, poor understanding of the issue and limited ability to 'impart the information'. Implicit in these comments is that there may be a way of demonstrating understanding and expertise, of communicating well and of not 'getting the wrong end of the stick'. The following excerpts illustrate that the participants had very definite views on what they did not like about the media reporting, and through the following negations, a series of preferences can be identified. These are in bold:

*R(1): there was **no facts** linking this scenario to a real threat so... I thought, whatever's going on, you know there's no **basis** for it*

*V(1): and they're **very chatty** and they... you **don't learn** very much*

*C(4): alot of times they get things wrong because they don't **investigate** very well*

*C(1):...finding out **details, facts**, and then giving that **information to the public** rather than just responding in an **overreaction or under reaction***

*R(1): they have people who don't seem to be able to **get behind the surface of things**, you know, even in their... um... investigative pieces, in their features? They're **very superficial** in what they say about things*

*M(4):... how they **distort** and **get things wrong** and how they're **biased***

*P(3): it wasn't given there to **provide information** it was there to scare you, into thinking you should do something*

*Rs(1): the papers, but they would **rarely follow it up***

*A(3): they're not actually there to **get it absolutely right***

To paraphrase the above comments into a coherent 'wish list', the participants wanted to see the following from media reporting: facts, background and basis for speculation, good investigative 'behind the scenes' journalism and a follow-up of stories relating to previous articles, details, clear, correct and unbiased information, and as-near-as-possible verifiable evidence. In terms of the reporting of avian influenza, this 'wish'-list' raises an important question: can the intricacies and scientific concepts of the H5N1 virus be easily understood in terms of 'clear and correct facts and details'? Does this mean that a certain level of scientific literacy, as described by Ziman (1991) and Friedman et al. (1986) is a prerequisite for understanding about risk?

I would assess the scientific literacy of the focus group participants as high;¹⁰⁵ most of them had a tertiary qualification and several worked within health disciplines, yet clearly they had frustrations around understanding the risk issue of avian influenza and found, by their standards, the media to be a poor communicator. By recognising that the public is 'not a single homogenous entity but rather a complex structure of segments defined mainly by interests, and knowledges' (Miller 1986:57), does the media need to report risks in ways that acknowledge these diversities? This could mean that within a story about a health risk for example, information for a range of scientific knowledges is provided.

Some participants seemed to suggest that media risk-reporting is more about sensationalising text in order to sell newspapers, suggesting that verifiable scientific content is of secondary importance to more commercial priorities. Whilst the participants may indeed have this view, lack of scientific content is more likely to be a constraint of economics, where papers simply cannot afford to have journalists who are specialists in just one field. The participants verbalised that, when reading about potential health risks, they wanted concrete and certain substantiated facts. However, framing a potential risk in a way that eliminates uncertainty is paradoxical; as Anderson (2006) points out 'the concept of risk deals with speculation about what might happen a long way into the future and is in conflict with news schedules that emphasize the here and now (p.118).

¹⁰⁵ See characterisation of focus groups – Appendix VIII

Specific suggestions

Apart from the specifics of information, some of the participants suggested some practical ways to report risk in relation to 'doing' something about the reported risk. Once again the particular suggestions are in bold:

B(2): if you **personalise** it, you **make it immediate**, you make it **current**, and you provide those, those things, those **practical things that people need to do**.

P(3): if you **make it about a person that you love**, if you make it a person, ahm, that's a different thing to 50 million people could die

E(2): but if someone said, 'OK it might affect us and **here's five things you can do that...you know, would help**' and they're not like major things that are going to really disrupt your life,..then.... that would be...

Rs(1): if you had access to **information of constructive things you could do** that might help, that would be more interesting than hearing this scaremongering where you think 'well, if it's going to hit, it's going to kill us all...

G(3): we...if it was a real threat, they would have **ads on saying 'buy Panadol** – it could save your life from the bird flu'...where were those **ads giving us that information?**

These kinds of constructive comments illustrates the level of engagement evident in thinking about how avian influenza had been reported in the media. It suggests two priorities as to how the media communicate health risks; the media should directly link risk information to personal circumstances, and offer symptom information and self-protection advice. Obviously, the suggestions also show that the participants would like more from the media by way of less sensationalism, how the risk relates to everyday life and how imminent the risk might be.

Several of the recommendations fall into what I see as a 'need for control' theme, something that risk communication theorists have identified as crucial. Covello et al. (1989) state that 'controllability' is important to the public in evaluating risk; not only do the public have the right to know about potential risks to which they may be exposed, but that they need to feel that they can 'participate in decisions that affect their lives' (p.6). Sandman (1993) also acknowledges controllability as key, and argues that this need for participation along with the perception that they have no control over the amount of their participation is why members of the public react with 'outrage': largely ignoring the hazard and concentrating on the emotional reaction towards that risk.

Sandman asserts that in trying to manage or communicate risk events, the government and other interested agencies say two things to the public: that they have the authority and expertise to manage the risk, and that (because of this) the public should not worry.

However, these messages 'disempower and reassure' simultaneously, and 'the reassuring message gets lost in the outrage provoked by the disempowerment' (p.39). The way to solve this disempowerment would be to share the control, which, in the avian influenza context, would mean (amongst other things), giving the public ways to actively keep themselves safe and avoid infection. Comments from the participants confirm this: '*ads on saying 'buy Panadol', 'information of constructive things you could do', 'here's five things you can do'*'. As many of the comments from the participants have demonstrated, there is a real emotional component to their discussions, which is puzzling at first glance: why should something that is communicated by various organisations in order to warn, help and prevent harm, be responded to antagonistically by those the warnings are intended to protect? Perhaps the controllability element of risk communication answers this question.

The following chapter returns to the core questions and aims of this thesis and, through theorising and interpreting the analysis of both the newspaper articles and focus group data, seeks to address them. It will also highlight issues and questions that emerged in response to the analysis and discuss implications for the discipline of risk communication with suggestions for further research.

7. DISCUSSION AND IMPLICATIONS

Discussion

The discourse of risk begins where our trust in our security ends and ceases to be relevant when the potential catastrophe occurs. The concept of risk thus characterises a peculiar, intermediate state between security and destruction, where the *perception* of threatening risks determines thought and action [italics in original] (Beck 1999:135).

Risk is a concept, a potential danger, an invisible uncertainty which can be made visible through the media. Moreover, as a result of risks 'becoming real' (van Loon 1999), evaluations and decisions are necessary. In relation to the communication of the health risk of avian influenza, the understanding, perception and mediation of risk has served as the orientation for this thesis, and has directed its theoretical, methodological and analysis decisions. This thesis was written due to a perceived gap in the empirical literature on the question of the relationship between what the media is producing in terms of health risk communication, and how the public are interpreting this risk information. If a pandemic occurs, public health authorities 'will be dependent on the willingness and ability of the public to adhere to recommendations formulated to protect both the individual and the wider community' (de Zwart, Veldhuijzen, Elam, Aro, Abraham, Bishop, Richardus and Brug 2007:290). Knowledge about public perceptions about the risk of avian influenza is limited (Lau, Yang and Kim 2003; de Zwart et al. 2007; Anderson 2006), but officials need to be confident that the public will respond to their health warnings in a timely manner.

A motivating concern for the conceptualisation of this thesis was how the media *communicated* the health threat of avian influenza and how the lay public of New Zealand perceived that threat as mediated by newspaper reporting. The core research questions were twofold: are there ways of reporting that help or hinder this process, and are there cultural and social implications to reporting that impact upon the public's understandings and behaviours? This thesis used a mixed-method methodology to explore these questions, which allowed for a comprehensive approach to analysing and interpreting about both the quantitative and qualitative data. A constructionist epistemology underpinned the theoretical concepts that encompassed discourse, textual and thematic analyses, (and did not include assumptions or hypotheses), which allowed for a rich reading of the data.

Early risk and risk communication theorists have chronicled approaches and problems with communicating risk, and have identified problematic gaps between different 'actors': risk generators and audiences (Palmlund 1992), scientists and journalists (Dunwoody, 1992), the 'knowledge-rich' and 'knowledge-deficit' (Ziman 1991), journalists and scientists (Friedman et al. 1986), and media and the 'lay public' (McCombs and Shaw 1972; Kasperson 1988; Lewenstein 2003). Beck (1999) raised questions of objectivity and subjectivity, rationality and irrationality, and it could be argued that Peter Sandman (1993) answered these questions in his interpretation of risk as the combination of 'hazard' and

'outrage'. He claimed that a 'disconnect' exists between how experts and the community estimate risk: the experts focus on the hazard but ignore the outrage,¹⁰⁶ yet the public do the opposite, focussing on the outrage at the expense of understanding the hazard. Certainly, this 'outrage' was demonstrated in many of the responses from the focus group participants, and Sandman's theory partly explains these responses. Nonetheless, the media's role in amplifying or attenuating risk messages cannot be ignored; therefore, one of the implications for further research that this thesis raises is: how *much* of a role does the media play?

In his article 'Mass Media and Environmental Risk: Seven Principles',¹⁰⁷ Sandman asserted that journalists are in the news business, not the education or health business. However, when the media writes articles about a potential health risk such as avian influenza, using scientists or doctors as primary sources and providing information intended to help readers protect themselves from infection, journalists are undoubtedly in the 'business' of both health and education. More importantly, past risk communication literature claims that in framing risk events in certain ways, the media play a crucial role in how the public perceive such threats.

The New Zealand media framed the potential pandemic of H5N1 virus similarly to the U.S. media: episodic framing¹⁰⁸ was the dominant frame that the New Zealand media used to report the avian influenza with most major indexes of sensationalism represented more than in the U.S. media. Thematic framing¹⁰⁹ of avian influenza stories was shown to be used infrequently, appearing in less than a third of all stories. Iyengar's (1991) theories of framing and attribution have certainly been useful in understanding how the New Zealand media represented the potential health risk of H5N1, and as the findings show the focus group participants seemed to respond to the effects of newspaper framing, criticising the media for its 'hyping-up' of the H5N1 issue, and wanting much more in the way of concrete facts and helpful details. There were similarities between what the participants wanted from health risk reporting and what defines a thematic frame. The participants criticised the media for the lack of this type of information '*...finding out details, facts, and then giving that information to the public rather than just responding in an overreaction or under reaction*,¹¹⁰ and stated that they would pay more attention if the media gave them specific advice on what they could do to mitigate the influenza's worst effects.

Parallels can also be drawn between the templates that the media used to report avian influenza stories and the themes that were evidenced in the focus group discussions:

¹⁰⁶ 'Outrage' - the nontechnical component of risk which includes notions of voluntariness, control, responsiveness, and feelings of trust and dread

¹⁰⁷ www.piercelaw.edu/risk/vol5/summer/sandman

¹⁰⁸ Episodic framing includes concepts of sensationalism, emotionally 'loaded' language, contextualisation and references to past pandemics.

¹⁰⁹ Thematic framing demonstrates more generalised reporting with contextual and scientific information as well as symptoms and protection advice.

¹¹⁰ Participant (C) in focus group 1.

for example those of 'othering'. The discourse of the 'deviant other' was evident in both the newspaper reporting and focus group discussion, with the media implying that Asian countries were to blame for not containing the H5N1 virus: *'It's not really surprising in countries like Indonesia that there are possibly unrecognised pockets of infection still bubbling away'*.¹¹¹ Whether the participants were reproducing attitudes voiced by the media or reflecting more deeply held cultural mores, some viewed people from other countries as problematic, and dispensable: *'I was going to say if they were all Chinese you wouldn't bat an eyelid'*.¹¹² Both the media and the participants also 'othered' those within the New Zealand society who did not act in ways that were deemed acceptable, but they did it in different ways; the media constructed the notion of 'the good citizen' by reporting in praiseworthy terms ordinary New Zealanders who were stockpiling and preparing *'I feel that with three young children it is my responsibility to make sure their welfare is taken care of... I'm going to store water in airtight containers and I will get masks next'*.¹¹³ The participants, however, ridiculed those who were stockpiling, positioning themselves in the (sensible) majority, and as rational citizens who were not *'you know... fruit loops'*, did not act neurotically, overreact or run around as if *'the sky is falling, the sky is falling'*. Constructing the avian influenza in terms of 'protagonists and antagonists' (Eichelberger 2007:1293) has implications for how communities respond to, and contain infectious outbreaks. The media, as conduits of health risk information, need to be cognisant of blaming populations or individuals for disease outbreaks or contagion control.

Conclusions about the effect of one upon the other cannot be drawn too sharply and I suggest that public perception of risk needs to be situated within considerations of community and culture. As Mary Douglas (1992) points out: 'there is no way of proceeding with analysing risk perception without typifying kinds of communities according to the support their members give to authority, commitment, boundaries, and structure' (p.47). Additionally, Scott (2000) explains 'othering' in reference to Douglas's cultural theory of risk: *'at the level of collectivity there will be scapegoating and blame of already vulnerable individuals and groups'* [italics added] (p.40). Focus group examples of 'othering' highlights the difficulties of attributing risk construction and perception, which suggest that taking a media effects approach is too simplistic. Whilst the media brought the issue of avian influenza to the public's attention, suggesting that, for a while at least, this topic should be more salient than other issues, its role can be seen as more a mediator of risk information, leaving the public to negotiate this risk in the context of the many considerations raised in this thesis; within the imperatives of public health and governmentality to name but two.

¹¹¹ The Press, 02 August, 2006

¹¹² Participant (C) in focus group 4

¹¹³ The Press, 29 October 2005

Lupton and Tulloch (2003) state that negotiating risk is made all the more difficult because the public are reliant on experts' knowledges 'to warn and inform about risk' (p.3), and the newspaper analysis showed that the media not only relied upon expert sources for information about H5N1 but also privileged some voices, whose expertise was uncontested, over others. The focus groups participants, however, were not passive in their evaluation of 'expert' information; there was debate about trust, authority and motivations, which showed that they were not bound by the media's approach.

When considering protection and manageability issues around avian influenza, the focus group participants talked at length about New Zealand's geographic proximity to reported incidents of avian influenza. There was a consensus that New Zealand would be 'the last place to get it' and that government protective measures such as border control and existing pandemic preparedness meant that any threat from the H5N1 virus was low. This confidence also meant that individuals did not personally take preparing, in terms of stockpiling food or having emergency kits ready, seriously. It could be assumed that the higher sensationalism demonstrated in the media articles might have penetrated the public's apathy, but as shown by the participants' response to this 'hyping-up' of the avian influenzastories, this approach did not work. Analysis of the focus group data showed that the participants reacted strongly to elements of sensationalism in the reporting of avian influenza, which resulted in criticism of the media, and a disregard for the risk messages. As a result of what the participants perceived as over-hyping and scaremongering, they declared that they had grown tired of persistent warnings that did not eventuate.

This effect has been referred to by researchers as 'warning fatigue' or 'cry wolf' syndrome, which Sandman claims is weak¹¹⁴ because he argues that people intuitively know that it is better to endure false alarms than to not have been warned at all. This statement may be applicable for industrial or environmental crises, but I suggest, not with regard to health risks such as global pandemics. SARS and the 1968 Hong Kong influenza epidemic, for example, were at the time worrying, but did not kill people in the numbers predicted; my reading of the focus group data suggest that the effects of warning fatigue may well be cumulative and more damaging than Sandman implies. The strength of participants' feelings about over-warning and over-predicting indicate that future health risk warnings, such as those about the present swine flu pandemic, may be largely disregarded and ignored. Combine the resultant apathy with the level of distrust also displayed by the participants,¹¹⁵ and 'warning fatigue', as a phenomenon, could be potentially more problematic than previously thought.

A theme evident in the textual analysis of the newspaper articles was that of medical or scientific language and one word in particular, 'mutate', appeared in many of the H5N1 articles, and had a noticeable effect in the focus group discussions. 'Mutate' appeared to change the tone of the discussions, initiated in-depth debate about the

¹¹⁴ 'The dangers of excessive warnings ... and of over-reassurance' (Sandman, 2008).

¹¹⁵ See chapter 6 sub-theme of 'credibility'.

seriousness of the health risk and showed, in this instance, that its use had a strong agenda-setting effect: influencing not only *how* the threat was explained, but constructing avian influenza as something *more* dangerous because of this medical uncertainty. It could be assumed that these scientific terms were used to explain the seriousness of the threat however, as the participants discussions showed, they added to, rather than alleviated the uncertainty. The participants were almost all tertiary educated and were 'scientifically literate' with at least seven working in either public health or the fields of human sciences. One would expect that understanding of the medical and scientific implications of the avian influenza pandemic would have resulted in a higher than normal uptake of advice amongst the participants; for example, stocking up on emergency supplies and antivirals. This was not the case however, with just one of 25 of the participants actively preparing as the health authorities had recommended. What does this mean for risk communication theorists who posit that without better scientific literacy, risk communication will continue to be ineffective? My research shows that despite having a high 'scientific literacy', the participants had difficulty assessing the magnitude and seriousness of the threat of H5N1.

Experts and organisations were not only used by the media as primary sources of information, but were important indicators for the participants in assessing personal risk in relation to avian influenza. Whilst the media reporting did not question the credibility of these authorities, the participants debated motivations and integrity, revealing that trust and credibility were important factors in their assessment of health risk messages. This finding aligns with risk communication literature (Covello et al. 1989; Sandman 2003; Lakoff and Johnston 1981; Brown 2003), and according to the focus group participants, integrity needed to be evident across all risk communication stakeholders: the health authorities, governmental organisations, local councils and the media. Despite debating the reasons for these organisations' risk messages, '*I think they have to over react...but if they under react, they will subsequently be blamed,*¹¹⁶ organisations' pandemic and preparedness plans, as reported in the media, served as a reassurance mechanism for the participants, and they had good knowledge of the major authorities involved: civil defence, health departments and local city councils. This feeling of confidence that the health threat was 'in hand' revealed a contradiction: although organisations were urging the public to prepare, the participants did not feel the urgency to *follow* the advice of these organisations, that is, to take individual responsibility for protection and containment: '*I very much grew up with that Social Welfare mentality, you know... that if things went wrong...that the government would look after you.*¹¹⁷ This highlights another facet of the problematic relationship between risk messages and risk reception, and suggests that further research is needed to enable organisations to design risk communication campaigns, that will confidently achieve their stated objectives.

¹¹⁶ Participant (P), focus group 3

¹¹⁷ Participant (B), focus group 2

Implications

In their case-study of media reporting of avian influenza over a six-year period in the United States, Dudo et al. (2007), concluded that assessment of avian influenza coverage outside of the United States was needed, and Anderson (2006) has noted that there have been 'few comparative studies of media reporting across countries (p.126). It is hoped that this thesis, whilst not exhaustive, is a substantive and comprehensive attempt to address these concerns. Whilst this thesis compares New Zealand media reporting of avian influenza with results from the US media, neither country experienced an avian influenza outbreak inside their borders. Further research relating to media reporting of health risk may determine how the media's reporting changes as a result of an actual outbreak: does it become more factual, less sensational? Will more overt mechanisms of social control (implementation of health quarantine measures for example) be contested or complied with, and will positioning of the 'deviant other' or the 'good citizen' become more obvious? More importantly, in what ways do these factors affect the public perception of personal risk?

During the process of writing this thesis, and in discussing the topic of avian influenza, with not only the focus group participants, but also colleagues and peers at Canterbury University¹¹⁸ and conferences, the spectre of a possible pandemic elicited strong emotional responses. These responses often included annoyance with the media and health organisations for reporting health warnings, even though these warnings were circulated in order to pre-empt major problems of contagion and disease control. It seemed as if, at some level there was disappointment that, as had happened before, the predicted outbreak had not come to pass. This scepticism was used as a rationale to justify belittling organisations who had warned and prepared, and individuals who had heeded those health risk warnings. These emotional reactions may be simply what Sandman (1993) has termed 'outrage', but I think that they are more to do with how the public, in times of crisis, conceptualise and operationalise risk in relation to the notion of uncertainty.

The reporting of avian influenza and the interpretations and perceptions of this reporting illustrates a paradigmatic case of how risk is managed in contemporary society. The focus group participants engaged with the notion of avian influenza as a potential health risk enthusiastically, and debated it in many ways including its possible severity and impact. There were a variety of views, and when talking about some topics, some strong opposing opinions were evident. There was however, one sub-theme about which there was absolute agreement: the media were not reporting health risk events in a way that communicated to the participants what they wanted to hear. As previously discussed in this thesis, analysis of focus group data suggest that 'the public' want health risk messages to be clear, concrete and factual, and many of their comments highlight two important notions: those of controllability and empowerment. Sandman (1993) points out that health

¹¹⁸ www.canterbury.ac.nz

risk officials often put out risk messages that simultaneously reassures '*we have the risk under control*' and disempowers '*you don't need to worry*'. This is problematic as the participants demonstrated that they wanted to take an active role during any health risk crisis which meant receiving and acting upon advice about constructive, practical, immediate and personally relevant things they could do.

A desire for messages that communicate certainty about risk, which is by definition inherently *uncertain*, raises questions about the very nature of risk communication, whether effective risk communication is possible, or whether partial effectiveness is all that can be hoped for. In light of this expressed desire for certainty, I suggest that future risk communication research should not focus so much on how the media are reporting health risks, but rather on how the public conceptualise risk, construct it in times of crisis and evaluate their ability to control it. At the time of writing, as countries all over the world come to terms with the impact of another animal-to-human virus, the global H1N1 pandemic, these implications for health risk communication merit further research.

APPENDICES

Appendix I: Coding Schema for analysing newspaper articles

Variables	Colour
Sensational:	
▪ Loaded words	Pink
▪ Loaded phrases	Purple
▪ Worst-case scenario	Orange
Risk Information:	
▪ Qualitative	yellow
▪ Quantitative without a contextual denominator	<u>yellow</u>
▪ Quantitative with a contextual denominator	<u>green</u>
Self-Efficacy:	
▪ Symptom Information	green
▪ Personal Protection information	green
▪ Public Understanding of Science	blue
Risk Comparison:	
▪ Other (SARS, Hong Kong flu)	Circle with red
▪ 1918	Circle with red

Appendix II: Focus group data transcribing Conventions

%%%	Indicates when something is said but the transcriber cannot understand it
<i>Italic</i>	The person emphasis this word
BOLD	The person speaks loudly
‘ ’	The person is quoting either herself or someone else
(2)	Parentheses indicate a pause and how the number denotes how many seconds it was
{ }	A note from the transcriber explaining what is happening at that time in the group
...	Indicates a small pause
[agreement]	Denotes a murmuring assent, not necessarily words
[]	Within text denotes what someone has done. Example [laughs]
[]	On a separate line denotes something someone from the group as said, but cannot be ascribed to a particular person
[overtalking - 3]	More than one member of the group is talking and the transcriber cannot discern who is saying what. Sometimes followed by a number, indicating how many seconds it lasted
[laughter]	Denotes that the group laughed
?	Denotes a rise in intonation , not necessarily a question
.	A full stop indicates a fall in intonation, but not necessarily the end of a sentence
,	A comma indicates a continuing intonation, not necessarily a clause boundary

(Ochs & Capps, 2001, xi-xii)

Appendix III: Cue article used for Focus Group Discussion.

Bird flu could kill 150m, says UN

330 words

1 October 2005

New Zealand Herald

English

(c) 2005 The New Zealand Herald

The UN has appointed a co-ordinator to counter a human influenza pandemic

A TOP United Nations public health expert warned yesterday that an international influenza epidemic could come at any time and claim millions of lives unless action is taken now to control an outbreak in Asia.

The number of people killed "could be anything between 5 million and 150 million," said Dr David Nabarro of the World Health Organisation.

He was speaking after his appointment as the new UN co-ordinator to lead a global drive to counter a human **flu** pandemic.

"We expect the next influenza pandemic to come at any time now, and it's likely to be caused by a mutant of the virus that is currently causing **bird flu** in Asia," he said.

The WHO has confirmed another fatal human case of H5N1 **avian** influenza in Indonesia.

The patient, a 27-year-old woman from Jakarta who had contact with diseased chickens, developed symptoms on September 17, went to hospital on September 19 and died on September 26.

The woman is the fourth laboratory-confirmed case of H5N1 infection in Indonesia, three of them fatal. The virus does not pass from person to person easily, but experts believe this could change if the virus mutates.

Dr Nabarro said with the almost certainty of another influenza pandemic soon, and with experts saying there is a high likelihood of the H5N1 virus mutating, it would be "extremely wrong" to ignore the serious possibility of a global outbreak.

"The **avian flu** epidemic has to be controlled if we are to prevent a human influenza pandemic," Dr Nabarro said.

He was appointed by UN chief Kofi Annan, as the agency moved to intensify its battle plan against **avian flu**.

The 1918 influenza pandemic killed more than 40 million people, and there were subsequent pandemics in 1957 and 1968 which had lower death rates but caused great disruption, he said.

Appendix IV: Focus Group Questions/Prompts

Opening questions/prompts

- ◆ 'Think back to the time when you were first aware of the spectre avian influenza or bird flu'
- ◆ What were your reactions to this? "did anybody react differently to this"
- ◆ what did you *do*? - ex: rush out and buy bottled water/get on the internet/nothing

Main questions

- ◆ What do you think about the way organisations were putting out the messages? (if group doesn't respond, use examples as follows): were they 'in control', 'out of control', over-reacting, being sensible, credible
- ◆ How do you think the health organisations have handled the communication of avian influenza issues? (if group doesn't respond, use examples as follows): seem well prepared, public are well informed, too much info too soon
- ◆ How do you respond to the idea the pandemic planning and implementation of any plan would be left to the 'officials' at either national or local government level? (if group doesn't respond, use examples as follows): wanted to have more control than that / make your own pandemic plan
- ◆ Do you think that the official organisations are doing enough about the threat of avian flu
- ◆ What did you think about the information that you were getting about avian flu? Ex: necessary, hype, true, alarming, just another media story, too much
- ◆ What do you think about the risk of avian influenza *now* - Ex: over it, tired of hearing about scary stuff, problem sorted

Follow up questions

- ◆ 'somebody mentioned the word 'worry' (or concern or panic), what was worrying', 'the most worrying'
- ◆ Where did you get most of your public health information? - Ex: tv, newspapers, talking with friends....
- ◆ Are there any other health risks that worry you - Ex: 245T, skin cancer, global warming, vaccinations
- ◆ Do they think that avian influenza is as much or more of a threat than these other health risks
- ◆ Have you changed what you do since first hearing about bird flu (in regards to future planning)? - Ex: would not normally stockpile canned goods but do now

****Remember****

- ◆ Silences are OK - don't elaborate or try to fill in the gaps
- ◆ Don't be directive, open-ended questions with as few concepts as possible
- ◆ Its 'their' voices I want on tape, not mine and use *their* words to direct discussion - *restate* what they have said - Ex: "does anybody have a response to that/ a different view"
- ◆ Debate is great!

Appendix V: Focus group information sheet



Health Risk Reporting: Avian Influenza Coverage in New Zealand Newspapers 2002-2008

This discussion group forms part of research by Brenda Mackie, gathered for a University of Canterbury Masters of Arts thesis in Sociology. The purpose is to explore opinions and perceptions of media reporting about health scares, using the avian influenza as a case study.

[This project has been reviewed and approved by the University of Canterbury Human Ethics Committee]

Dear Participant

By meeting together to discuss the topic of the Avian Influenza, it is hoped that data will be generated that will contribute towards understanding the relationship between media representations and the way that the public of New Zealand interpret those representations. This research aims to explore and understand views on how the media have reported avian influenza, through analysing ideas, issues and themes that emerge out of the group discussions. Core to this research paper is to understand how this reporting has contributed to the construction of particular ways of thinking and talking about avian influenza .

These discussions will probably last no more than 90 minutes, with other participants whom you may know informally through friendship networks. At any time prior to the analysis of the data, you will be able to withdraw, and data pertaining to your involvement will be destroyed.

If you are interested in the outcome of this research, or want more information, please feel free to contact the researcher or her supervisor via the contact below:

Brenda Mackie: bam33@student.canterbury

Dr Victoria Grace (Supervisor): victoria.grace@canterbury.ac.nz 03 364 2692

PLEASE NOTE: By signing the attached form, you are giving your consent for data gathered from group discussions to be used as part of this MA research and may be published in the form of papers for conferences and journals

Appendix VI: Consent Form



Department of Sociology and Anthropology
University of Canterbury

Consent Form
Health Risk Reporting: Avian Influenza Coverage in New Zealand
Newspapers 2002-2008

November 2008

I understand that I am participating in a group discussion about avian influenza and I have read and understood the information sheet. On this basis, I agree to be a participant in the discussion group, and I consent to publication of the results of the data with the understanding that anonymity will be preserved. I am aware that all information I provide is confidential and that at any time prior to the analysis of the data, I may withdraw from the project, including the withdrawal and deletion of information I have provided. I also understand that the group discussions will be recorded and that I can, on request, review the audiotape/transcript. I note that the project has been reviewed and approved by the University of Canterbury Human Ethics Committee.

NAME (please print): _____

PHONE: _____

SIGNATURE: _____

Demographic Information

AGE: 20-29 30-39 40-49 50-59 60 & over

GENDER: Male/Female

ETHNICITY: New Zealand European Maori Pacific Islander

Chinese Indian Korean

Other (specify) _____

OCCUPATION: _____

HOUSEHOLD COMPOSITION: (number of) Adults _____ Children _____

Appendix VII: Overview of Public Health in New Zealand (1872 – present).

History of Public Health in New Zealand

An organised system of public health was first introduced in New Zealand by the passing of the Public Health Act (1872), and by 1876, each province had been allocated its own Local Board of Health. For the first fifteen years, the only thing public health was seen to be responsible for were quarantine matters, but with the first case of the world-wide pandemic of bubonic plague occurring in Auckland in June 1900, a Department of Public Health was established and a new Public Health Act (1900) was passed by Government. The department was staffed with full-time salaried Government officers who had expert knowledge in public health.

After the First World War and the influenza pandemic of 1918, the role and function of the Department expanded rapidly, and in addition to 'maintaining a sanitary environment', it oversaw many activities which were grouped together under the designation of "Social Medicine".

Under the Health Act (1920) the Department of Health became responsible for the supervision of hospitals, charitable institutions, private hospitals, and for the control of nurses and midwives. In 1921 the School Medical Service and the School Dental Service were transferred to the Health Department from the Education Department; the Department of Mental Hospitals was added in 1948.

The enactment of the Social Security Act 1938 introduced a range of treatment benefits, and in 1946, the supervision of health hazards in factories and other places of work was added to its responsibilities.

According to The Health Act of 1956, The Department of Health is required to:

- promote and conserve health:
- prevent, limit, and suppress infectious and other diseases
- advise local authorities in matters relating to public health in so far as they are charged with the care of public health
- promote or carry out researches and investigations concerning public health and the prevention or treatment of disease
- publish reports, information, and advice concerning the public health
- organise and control medical, dental, and nursing services.

Other related acts which the Public Health Act covers are: the Tuberculosis Act (1948), the Food and Drugs Act (1947).

As of May 2009, there is a bill before Parliament to update and amend the 50 year old Health Act: to expand health emergency provisions, take account of changes in international travel patterns, (and threats such as SARS and pandemic influenza), manage health border controls and introduction of new guideline provisions aimed at reducing risks of non-communicable disease.

<http://www.moh.govt.nz/moh.nsf/indexmh/summary-public-health-bill> [and]
<http://www.teara.govt.nz/1966/M/MedicalServices/PublicHealth/en>

Appendix VIII: Characterisation of the focus groups

The study consisted of four focus groups, numbering five to eight participants with 25 New Zealand-European adults ranging in age from 30 to 69. The majority of them were women (n=20), and only two participants did not have a tertiary education, with several having advanced degrees. The duration of the focus group session lasted between 52 minutes and 1 hour 30 and all participants chose to stay and have supper. One group continued talking for a further hour.

Each focus group had its own emphasis depending on how many of the participants knew each other or how much they discovered they had in common. This 'commonality' really helped with the communication within the groups, and established an atmosphere of trust. In one group for example, two participants discovered that they knew each other because they were both lay ministers in the Methodist church. Others had papers that they had taken at the local university in common, and were able to chat about the content and the lecturers.

Each group engaged with the focus group topic and the cue articles, albeit in different ways. One group reached a consensus within 5 minutes that the cue article was sensationalised 'media-hype', which led to strong opinions but opinions that were not debated. This also may have led to opinions that were stronger than if they had not been contested. I have wondered about why this was so, and have concluded a couple of reasons: the group consisted of six people, two in a relationship, two others who were starting relationship and two separate others. Without exception, the 'couples' did not disagree with each other - they agreed with each other's statements, built upon their comments and one man in particular, seemed to take exception to any comments that contradicted his partners, vociferously questioning any such contrary statement. It made for a very united and strongly expressed group. In other groups where there were established couples, this 'unity of voice' did not happen.

One other group had one person who was particularly opinionated, and voiced her opinion at every possible chance. I was initially worried about this, but the group negotiated around her, and it did not stop them from saying what they wanted to say - they just had to wait a bit longer!

Despite some quirks of personality, I got some terrific data, and in hindsight, would change little about the make-up of the groups. If I ran focus groups again, I would definitely make sure that each participant knew at least one other person, I think this helped tremendously. I would possibly be aware of the 'couple' dynamic, and maybe would not necessarily avoid it, but make sure that my group either had couples whom I knew to be independent thinkers, or did not have too many in one group.

Appendix IX: New Zealand Ministry of Health 'Get Ready for a flu pandemic' postal campaign letter to households and brochure



133 Molesworth St
PO Box 5013
Wellington
New Zealand
Phone (04) 496 2000
Fax (04) 496 2340

Dear householder

While there is currently no influenza pandemic, you, your family / whanau and friends have been sent this information to help you prepare for whenever one might come in the future.

The enclosed brochure outlines some practical steps people can take to prepare, like remembering basic hygiene and putting together an emergency supplies kit. Please take the time to read it and talk about your plan with family, friends and neighbours.

It is also worth considering who you might need to contact and who may need to contact you in a flu pandemic. Think about how you might help a neighbour or relative living alone, or who you might be able to call for help if you get sick.

Along with the brochure, we have also enclosed a magnet with details about where you can get further information, including the Ministry of Health website and free phone number.

To ensure we are as well prepared as we can be, New Zealand is following the advice of international agencies, such as the World Health Organization and the Centers for Disease Control. The Ministry of Health has secured extra medical supplies and developed resources for health professionals to help deal with a pandemic.

A range of agencies from central government to District Health Boards and community groups are all working to make sure New Zealanders know what they can do.

We don't know when a pandemic will occur but we are doing everything we can to prepare for one.

Yours sincerely

Dr Mark Jacobs
Director of Public Health

Appendix X: New Zealand Ministry of Health 'Get Ready for a flu pandemic' postal campaign brochure

Hygiene - keeping clean

- Washing and drying your hands properly is one of the best ways to prevent you from passing on germs. Wash hands for at least 20 seconds with soap and water. Don't rub. Dry by patting or blowing.
- Wash with 60°C water
 - Before preparing food and eating
 - After using the toilet
 - After coughing or sneezing
 - After touching things that people share
 - After touching things that people share
- Keep your cough and sneeze covered. Use a tissue, your elbow or a sneeze cloth. Dispose of tissues in a plastic bag.
- Try to stay away from other people to reduce the spread of germs.

If you work from home or run your own business

- You need to think about how to keep your business running. You will find conditions in the Business Continuity and Recovery Planning Guide for Business Continuity Planning. It's available on the Business Continuity Planning Guide.
- You may want to talk to your insurer to provide about your cover.

Getting ready for a flu pandemic

More information on how to get ready for a flu pandemic is available on www.moh.govt.nz/pandemic/flu/pandemic or you can call 0800 286 358

How a plan

Setting up your emergency kit

Hygiene - keeping clean

And other things you can do...

MINISTRY OF HEALTH
www.moh.govt.nz

Getting ready for a flu pandemic

When a new flu virus infects many people around the world, it is called an influenza pandemic.

Health experts and governments around the world are worried that the flu virus H5N1 affecting birds (avian influenza or bird flu) could change into a virus that easily affects people. If this happens, and the new virus enters New Zealand, many of us could become very sick.

There are a few simple things you can do now to prepare

Have a plan

Develop a plan to get you and your family ready for what you need to do at home for weeks. Make a plan with your family and friends so you can help each other.

- Who could help with food and supplies if you and your family are ill?
- If you have any pets, make sure you have a plan for them during your plan so that you will be able to care for them.
- How many people are in your home? Do you have any pets? Do you have any elderly or disabled people? Do you have any people with chronic health conditions?
- Do you have any people with chronic health conditions?
- Do you have any people with chronic health conditions?

Build up your emergency supplies kit

- Have a supply of food and drink for at least a few days. Make sure you have some water and fresh fruit and vegetables.
- Have a supply of first aid kit for at least a few days. Make sure you have some water and fresh fruit and vegetables.
- Have a supply of first aid kit for at least a few days. Make sure you have some water and fresh fruit and vegetables.

Flu jabs

- Get your doctor to check you and your family for a flu jab. The jab is only for people aged 65 and over, and people with certain chronic health conditions.

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