Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

The Canterbury Tales:

An insider's lessons and reflections from the Canterbury Earthquake Sequence to inform better public communication models

A thesis presented in fulfilment of the requirements for the degree of

Doctor of Philosophy

In English and Media Studies

At Massey University, Wellington,

New Zealand.

Sara Kelly McBride

2017

Abstract

Researcher: Sara K. McBride

This research evaluates the public earthquake preparedness communication before the Canterbury Earthquake Sequence (2010-present) and examines communication learnings to create recommendations for improvements in implementation for these campaigns in future. The research comes from an "insider" perspective from someone who worked on these campaigns in Canterbury before the earthquakes. In this research I use this insider lens to analyse the Q-Files booklets, developed by the Public Education Public Information group (PEPI) and coordinated by the Canterbury Civil Defence Emergency Management (CDEM) Group, both groups in which I worked professionally before the earthquakes. These booklets aimed to communicate the geological hazards and risks in Canterbury to persuade publics to prepare. For my analysis, I developed a "best practice matrix", derived from the most relevant literature, to determine how closely these booklets aligned to best-practice academic research. I also used readability tests and word counts to triangulate the data. I interpreted that the Q-Files were overly long, jargon-laden text filled with little positive outcome expectancy messages, and would have failed to persuade most people that earthquakes were a real threat in Canterbury.

Paradoxically, it is likely these booklets created fatalism in publics who read them. While the overall intention was positive, to scientifically explain geological risks to encourage the public to prepare for these events, my analysis identified that the implementation could have been greatly improved. After summarising my findings, I shared these insights with my community of practice and found that many of my former colleagues shared with me their frustrations, concerns and disappointments with not only the Q-Files but the overall management of public preparedness communication within Canterbury. Finally, I reflect on what it means to have been part of the development of a failed risk communication campaign. I interpret that scientism was the fundamental belief system inspiring the PEPI group in Canterbury to create the Q-Files. I argue that the PEPI group created echo-chamber-like effects, supporting and reflecting their own belief systems in their public communication. The group's self-containment led to the creation of documents filled with jargon, gobbledygook and scientificism. Based on my findings, I highlight areas for improvement in strategic approaches for more successful campaigns in future as well as potential research pathways.

Acknowledgements

From this journey's beginning, people told me that the thesis is a lonely journey, one undertaken as a solitary research process. While there have been times of isolation in this process, I never felt truly alone and without support. I now thank people who made this journey possible, although this is by no means an exhaustive list.

All my supervisors played integral roles as my supervisory team and I am truly grateful to my Dream Team "Supers". I would like to thank all my supervisors who walked with me through this journey. My primary supervisor, Associate Professor Elspeth Tilley, was tireless in her support, patience and her exceptional skill as an academic. Without her tremendous support, I would not have been able to complete this thesis. Not only was she supportive outwardly, she provided me with an example of what makes a truly great researcher and academic. I also thank Dr. Caroline Orchiston for her role at keeping me positive and providing the "natural hazard science" perspective for this thesis. I also thank Dr. Julia Becker for access to her research and continued support when I felt that this thesis was not possible to complete. I thank Professor David Johnston for providing me my funding support and reminding me of the "big picture". Without his vision and trust in my ability to complete this thesis, it would not have happened. Further academic support was provided by Dr. Christine Kenney. Dr. Kenney provided mentorship and support, as well as direction in approaching sensitive indigenous issues. I acknowledge her as my unnamed "fifth supervisor" and academic mentor; without her, this thesis would lack important explorations about exclusions, silences, identities, and sociology of science.

I received a Ph.D. scholarship from GNS Science to fund this research. The organisation's funding support made this research possible. Further institutional support came from Massey University. I thank my writing support coach, Dr. Greg Gilbert, who assisted me in writing this thesis. Elizabeth Smith and the staff at Massey University-Wellington provided much-needed support with EndNote and for researching this thesis. I also thank Dr. Elizabeth Gray, Prof. Frank Sligo and the staff at the Communication, Journalism and Marketing (CJM) department who allowed me valuable office space to complete this thesis. I thank my fellow Ph.D. students who have shared their tools, insights and support at the Joint Centre for Disaster Research (JCDR) and at the PhD lab in the CJM School. I thank all the staff and scholars at the JCDR for their support.

I also thank my community of practice who participated in my member checks. Their feedback and insights provided further depth to this thesis that I had not anticipated.

In Canterbury, I want to thank the members of the Canterbury Civil Defence Group, particularly James Thompson, Jude Lathey and Jessica Petersen for their assistance in gathering documents for my research. I also give special thanks for Helen Jack, who has been my communication partner from the beginning; I could not have done this without her. Bill Simpson and Wilma Falconer, my professional mentors, provided me with support during this time. Jon Mitchell, as my former manager and friend, also provided important discussions to this thesis. At the Wellington Regional Emergency Management Office, I thank Jason Paul, Dan Neely and Kerry McSavaney for engaging in many important discussions. I also thank Elizabeth McNaughton at the Department of Prime Minister and Cabinet for inviting me to share my lessons and insights in the Lesson Learned Project for Canterbury. I thank Dr. Ken Gledhill, Kevin Fenaughty, Caroline Little, Sara Page, Dr. Geoff Clitheroe, Dr. Natalie Balfour and all the staff at GeoNet who supported me to complete this thesis. I thank my colleagues and friends at GNS Science, particularly Dr. Graham Leonard, Dr. Natalia Deligne and Dr. Wendy Saunders, for their support.

I also thank all the members of the Wellington Footlights Society, a musical theatre group. They allowed me to play and take a break from the intensity of the thesis.

To my partner, Martin, who supported me in too many ways to mention but I could not have done this without him. I thank Dr. Ronald Miller, at BYU-Hawai'i for providing lifelong mentorship and advice. Thanks to my brothers, Clark and Chris, and their families. I thank all my family members for their support. I want to acknowledge Professor Dominique Van Hooff, my aunt, who was the first woman in my mother's family to receive a Ph.D. She was a guiding light for me and is sorely missed.

Finally, to my parents, the McBride Foundation, who provided me with both roots and wings to complete this research. Thanks, Mom and Dad!

This thesis is dedicated to the people of Canterbury, who have endured so much.

I will continue to work on your behalf.

Table of Contents

Chapter 1: The Outside Insider *1*
A Disastrous Childhood *3*
My life and work in Canterbury *6*
Motivation, relevance and challenges of this thesis *12*
Narrative Structure *15*
Research Questions *16*
Methodology and theoretical perspective *17*
The human history and demographics of Canterbury *19*
Governance and relevant legislation *22*
National Preparedness Communication Campaigns and Canterbury Emergency Preparedness Programmes (pre-2010) *24*
Public perceptions and emergency preparedness before the Earthquake Sequence *28*
The Geological Setting of the Canterbury Region – the multiple perspectives *30*
Key Terms *35*
Thesis Structure *36*
Summary *37*
Chapter 2: Bridging the Literature *39*
The review process *41*
Communication and Emergency Management: twins separated at birth? *43*
Disaster preparedness communication – the status of knowledge *44*
Communication, Public Relations, Media Relations and Marketing *46*
Chronicling and exploring contemporary communication theories *49*
Persuasion and propaganda *51*
Risk Communication *53*
Emergency Management *57*
Public education and public information *59*
Civil defence preparedness campaigns: Historic and contemporary case studies *61*
Best-practice Matrix *66*
Source *67*
Messages *74*
Channel *81*
Publics *85*
Setting *89*
Summary *93*
Chapter 3: Research Pathways *95*
Research Position *97*
Epistemological Position: Social Constructivism *99*
Theoretical Perspective: Interpretivism *100*
The Insider *102*

Methodology *105*
Research Goal One: Identifying Best-practice from the Literature *107*
Research Goal Two: Identifying the Lessons *109*
Readability Tests *115*
Member Checks *117*
Research Goal Three: Interpreting the Lessons *120*
Ethical considerations and procedures *120*
Summary *122*
Chapter 4: Analysing the Q-Files *123*
Methods and Processes of Coding *125*
The Q-Files *135*
First Coding of the Q-Files *138*
Second Coding Phase *145*
Findings *157*
Messages: the prevailing theme *161*
Channel *174*
Source *179*
Publics *185*
Setting *189*
Readability Tests *191*
Assessment of the Q-Files *194*
Summary *200*
Chapter 5: Reflections from the Community of Practice *203*
About my member checks *205*
Using SurveyMonkey *206*
Reflections from the members *230*
Findings from Member Checks *241*
Summary *243*
Chapter 6: Discussion and Reflections *245*
Answering the research questions *246*
Source: Persuasion *248*
Source: Scientism *249*
Echo Chambers *252*
Messages: Scientificism *256*
Messages: Gobbledygook *258*
Messages: Jargon and technospeak *259*
Messages: Fear/Threat appeals *261*
Channels *266*
Publics *268*
Publics: Exclusive Narratives *268*
Setting *275*
Summary *276*
Chapter 7: Conclusion and Futures *279*

Solutions - The power of reflection ***283***
Solutions - Participatory communication strategies ***286***
Solutions - Including other disciplines and narratives ***286***
Limitations ***287***
Future Pathways ***289***
Learning the Lessons ***289***
Emergency management – exploring identities and philosophies ***290***
Extreme preparedness: Preppers ***292***
How prepared are "experts"? ***293***
Natural Hazards: Scientists as responders ***293***
Operational Earthquake Forecasting and Early Earthquake Warnings ***293***
Persuasion and Science ***294***
Updating readability tests ***294***
Communication research: new approaches to preparedness campaigns ***295***
Supporting future insider researchers: insider research is tough ***296***
Final Thoughts ***298***
REFERENCES ***300***
Appendices ***342***
Appendix 1: The Best-Practice Matrix ***343***
Appendix 2: Public Education and Public Information (PEPI) Strategy 2009 – 2012 ***355***
Appendix 3: Literature Review Table (sample) ***359***
Appendix 4: Social media from 04 September 2010 ***363***
Appendix 5: SurveyMonkey Survey from Member Checks ***364***
Appendix 6: Ethics Documents ***379***
Appendix 7: The Q-Files ***384***

FIGURES

FIGURE 1.1:PHOTOGRAPH OUTSIDE CHRISTCHURCH CATHEDRAL WITH EARTHQUAKE DAMAGE TO SPIRE *1*
FIGURE 1.2: PHOTOGRAPHS OF DAMAGE FROM SEPTEMBER 2010 – 22 FEBRUARY 2011. *10*
FIGURE 1.3: RESEARCH GOALS AND METHODS *18*
FIGURE 1.4: CANTERBURY REGION WITHIN NEW ZEALAND *23*
FIGURE 1.5: CANTERBURY REGION WITH TERRITORIAL AUTHORITY BOUNDARIES *23*
FIGURE.1.6: TECTONIC SETTING OF NEW ZEALAND, 2015. *31*
FIGURE 1.7: NATIONAL SEISMIC HAZARD MODEL FOR NEW ZEALAND: 2010 UPDATE *32*
FIGURE 2.1. RESEARCH GOALS AND METHODS *41*
FIGURE 2.2:PUBLIC RELATIONS FAMILY TREE *48*
FIGURE 2.3: SOURCE, MESSAGE, CHANNEL, PUBLICS MODEL OF COMMUNICATION *49*
FIGURE 2.4: THE 4 RS *59*
FIGURE 2.5: THE HYDROGEN BOMB *63*

Figure 2.6: Grunig's (1992) Nested model of Segmentation *86*
Figure 2.7: A model of community resilience *91*
Figure 3.1: Research Goals and Methods *97*
Figure 3.2: Research position *98*
Figure 3.3: Q-Files booklets during the first coding, with coloured tabs illustrating the first interpretation of themes in their content *111*
Figure 3.4: The HyperResearch Interface during coding of the Q-Files *113*
Figure 4.1: The Original Spire and the Damage done by the Earthquake op Sept. 1, 1888. ..... *123*
Figure 4.2:Research goals and methods *124*
Figure 4.3: Overview of the processes used for the coding process *125*
Figure.4.4: Front cover and images from the Q-Files booklets *137*
Figure 4.5: Liquefaction process *175*
Figure 4.6: The Canterbury Map of Faults and Earthquakes from the Q-files Brochure 2008. ..... *176*
Figure 4.7: ChristChurch Cathedral *177*
Figure 4.8: Ethnic groups in the Canterbury Region, 2006 Census *189*
Figure 5.1. Research goals and methods *205*
Figure 5.20: Barriers to communicating *231*
Figure 6.1: Building blocks of an echo chamber *254*
Figure 6.2: The Echo Chamber in Canterbury *254*
Figure 6.3: Foronda's (2008) model of concept analysis of cultural sensitivity *274*
Figure 7.1: Photograph from The Press, 16 March, 1932 ..... *279*

TABLES

Table 1.1: Canterbury pre-earthquake preparedness studies *29*
Table 2.2: Summary of the more significant historical Canterbury earthquakes and their impacts (modified from Potter, Becker, Johnston, and Rossiter (2015) *33*
Table 2.1:Definitions of propaganda, persuasion and education *52*
Table 4.1: The Best-Practice Matrix *127*
Table 4.2: Phase One Codes *138*
Table 4.3: First coding analysis *139*
Table 4.4: Different messages from the booklets about earthquake actions *145*
Table 4.5: Differing definitions of natural events, natural hazards, natural disasters, and risk from the 2001/2008 Defining Moments in Nature Booklets *152*
Table 4.6: Final coding frequencies, BP=Best Practice, PP=Poor Practice *158*
Table 4.7: Frequency of Coded Themes *161*
Table 4.8: Messages Subtheme coding *162*
Table 4.9: message: locality with examples from coding *164*
Table 4.10: message: science information with examples from coding *165*
Table 4.11: Examples of message: outcome expectancy with examples from coding *166*
Table 4.12: Message: mitigation with examples from coding *167*
Table 4.13: Examples of best-practice and poor practice of message lengths *167*
Table 4.14: Examples of ideal messages *168*

Table 4.15: Examples of best-practice and poor practice of counterarguments *169*
Table 4.16: Examples of message: guilt with examples from coding *169*
Table 4.17: Examples of message: propaganda with examples from coding *170*
Table 4.18: Message: acronyms with examples from coding *171*
Table 4.19: Message: fear with examples from coding *172*
Table 4.20: Message: jargon with examples from coding *173*
Table 4.21: Channel Subtheme coding frequency *174*
Table 4.22: Examples of Channels: online presence with examples from coding *178*
Table 4.23: Examples of Channels: printed material with examples from coding *178*
Table 4.24: Examples of Channels: face-to-face with examples from coding *179*
Table 4.25: Examples of best-practice of entertainment *179*
Table 4.26: Source Subtheme coding frequency *180*
Table 4.27: Powerful subtheme with examples from coding *181*
Table 4.28: Multiple agency subtheme with examples from coding *182*
Table 4.29: Source: spokesperson: personal stories with examples from coding *183*
Table 4.30: Examples of Source: Spokespeople with examples from coding *184*
Table 4.31: Publics Subtheme coding frequency *186*
Table 4.32: Examples of Publics: involvement in planning about response *186*
Table 4.33: Examples of Publics: two-way with examples from coding *187*
Table 4.34: Examples of Publics: resilient community with examples from coding *188*
Table 4.35: Examples of Publics: diversity examples in the coding *189*
Table 4.36: Setting Subtheme coding frequency *190*
Table 4.37: Examples of Setting: resilient community with examples from coding *191*
Table 4.38: Age equivalency from the U.S.A. to New Zealand school systems *192*
Table 4.39: Readability scoring based on tests; includes age/grade equivalency *193*
Table 4.40: Assessment of the Q-Files *195*
Table 5.1: Question One *207*
Table 5.2: Question Two *207*
Table 5.3: Question Three *208*
Table 5.4: Question Four and Five *208*
Table 5.5: Question Six *209*
Table.5.6: Question Seven *210*
Table 5.7: Question Eight *210*
Table 5.8: Question Nine *212*
Table 5.9: Question Ten *214*
Table 5.10: Question Eleven *216*
Table 11: Question Twelve *218*
Table 5.12: Question Thirteen *219*
Table 5.13: Question Fourteen *221*
Table 5.14: Question Fifteen *222*
Table 5.15: Question Sixteen *224*
Table 5.16: Question Seventeen *226*
Table 5.17: Question Eighteen *228*