

**A CRITICAL DISCOURSE ANALYSIS OF RISK
COMMUNICATION ON RADIO FREQUENCY
EXPOSURE FROM TELECOMMUNICATION
STRUCTURES**

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**THESIS SUBMITTED IN FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY**

**FACULTY OF LANGUAGES AND LINGUISTICS
UNIVERSITY OF MALAYA
KUALA LUMPUR**

2016

UNIVERSITY OF MALAYA
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ABSTRACT

Radio frequency (RF) exposure from telecommunication structures in Malaysia is perceived by many to be a health hazard. This has led to contestation among the various stakeholders. Hence, this study examines thematically, how the social actors represent themselves and the other in the health debates on RF and, how social actions involving the exposure to RF are represented in the discourse by the various stakeholders. The research also explores ways to reduce the contestations of the various stakeholders by formulating recommendations for effective risk communication. This study plugs the gap in linguistic studies on risk as currently there is no analysis of risk on RF exposure from telecommunication structures from a Malaysian viewpoint and from a critical discourse analysis perspective. Risk has also not been researched through the lens of social actors and social actions as put forward by van Leeuwen (2008). Therefore, the premise of this research, which is a first-of-a-kind study in Malaysia, is to contribute to knowledge transfer in the telecommunication industry. The theoretical framework is based on Critical Discourse Analysis. The qualitative data comes from spoken conversations from thirty-one semi-structured interviews with representatives from seven stakeholder groups. The analytical frameworks for Research Questions 1 and 2 are based upon van Leeuwen's (2008) Social Actor and Social Action Networks. Research Question 3 employs an adapted version of Key Steps in Applying Effective Risk Communication which was initiated by Kemp (2009) to draw on the key findings from Research Questions 1 and 2 to formulate the recommendations. In the representation of the social actors, the representation of 'self' is mostly positive and differ based on the different roles the stakeholders play but the 'other' are represented usually negatively. The social actors tend to align the 'self' with the in-group that supports their own representation while they distance themselves from 'the other' or the

out-group who do not share the same beliefs and values. The self-representation is mostly congruent to the roles of the actor's organization, their political affiliation and their position in society as the discourse carries differing ideologies and beliefs based on their respective roles. The representation validates that people tend to identify themselves with their own social groupings based on common knowledge, beliefs, ideologies, norms, and often place themselves in opposition to other social groupings that have differing views. The representations of social actions examine five themes: granting approval for the siting of telecommunication structures, construction of telecommunication structures, educating the public on RF, protests by residents, and media reporting on RF related issues. The social action representations' generally corresponded with that of the self-representation of the social actors and it legitimises their role in the social practice. However, the reactions from the affected stakeholders' delegitimise these representations as they feel that there are contradictions in the social actions and self-representation of the social actors. Overall, the representations impact trust which is vital in risk communication. Therefore, the recommendations stress on transparency and the participation of all stakeholders to facilitate the building, strengthening and repairing of trust.

ABSTRAK

Pendedahan frekuensi radio (RF) dari struktur telekomunikasi di Malaysia adalah dianggap sebagai bahaya pada kesihatan. Ini telah membawa kepada pertikaian di kalangan pelbagai pihak kepentingan. Oleh itu, kajian ini menyelidik secara bertema, bagaimana pelakon sosial mewakili diri mereka dan yang lain dalam perbincangan kesihatan dalam RF dan, bagaimana tindakan sosial yang melibatkan pendedahan kepada RF digambarkan di dalam wacana pelbagai pihak berkepentingan. Selain itu, kajian ini menerokai cara mengurangkan pertikaian daripada pelbagai pihak berkepentingan dengan merangka cadangan untuk komunikasi risiko yang berkesan. Penyelidikan ini mengisi jurang dalam kajian linguistik mengenai risiko kerana buat masa ini, tidak ada analisis risiko ke atas pendedahan RF dari struktur telekomunikasi dari sudut pandangan Malaysia dan dari perspektif analisis wacana kritikal. Risiko juga belum dikaji daripada pandangan pelakon sosial dan tindakan sosial seperti yang dilangani oleh van Leeuwen (2008). Oleh itu, premis kajian ini, yang merupakan satu-satunya kajian di Malaysia, adalah untuk menyumbang kepada pemindahan pengetahuan dalam industri telekomunikasi, dan seterusnya diterjemahkan kepada tindakan dan amalan. Rangka kerja teori adalah berdasarkan Analisis Wacana Kritikal. Data kualitatif datangnya daripada temu bual lisan separa berstruktur dari sebanyak tiga puluh satu wakil-wakil daripada tujuh kumpulan pihak berkepentingan. Rangka kerja analisis untuk Kajian Soalan 1 dan 2 adalah berdasarkan rangkaian Pelakon Sosial dan Tindakan Sosial van Leeuwen (2008). Kajian Soalan 3 menggunakan rangka kerja versi yang saya telah ubahsuaikan daripada Langkah-langkah Utama Dalam Menggunakan Komunikasi Risiko Berkesan yang telah dimulakan oleh Kemp (2009) untuk mendapatkan penemuan utama daripada Kajian Soalan 1 dan 2 untuk merumuskan cadangan. Dalam perwakilan atau penggambaran pelakon sosial, perwakilan 'diri

sendiri' adalah kebanyakannya positif dan berbeza berdasarkan peranan yang berlainan yang dimainkan oleh pihak berkepentingan tetapi peranan 'yang lain' pula biasanya diwakili secara negatif. Pelakon-pelakon sosial lebih cenderung untuk menyelaraskan 'diri' dengan kumpulan dalam yang menyokong perwakilan mereka sendiri, sementara mereka menjauhkan diri daripada 'yang lain' atau kumpulan luar yang tidak berkongsi kepercayaan dan nilai yang sama. Perwakilan sendiri adalah kebanyakannya kongruen kepada peranan badan-badan pelakon, fahaman politik dan kedudukan mereka dalam masyarakat kerana wacana membawa ideologi yang berbeza dan kepercayaan berdasarkan peranan masing-masing. Perwakilan akan mengesahkan bahawa orang lebih cenderung untuk memperkenalkan diri mereka dengan kumpulan sosial mereka sendiri berdasarkan pengetahuan umum, kepercayaan, ideologi, norma, dan mereka sering meletakkan diri mereka bertentangan dengan kumpulan sosial yang lain yang mempunyai pandangan berbeza. Representasi tindakan sosial mengkaji lima jenis tindakan: memberikan kelulusan untuk menduduki struktur telekomunikasi, pembinaan struktur telekomunikasi, mendidik orang ramai mengenai RF, bantahan oleh penduduk, dan media yang melaporkan isu-isu yang berkaitan RF. Representasi tindakan sosial secara amnya berhubung dengan perwakilan diri para pelaku sosial dan ia mengesahkan peranan mereka dalam amalan sosial. Walau bagaimanapun, tindak balas daripada pihak berkepentingan yang berkenaan tidak mengesahkan perwakilan ini kerana mereka merasakan bahawa terdapat percanggahan dalam tindakan sosial dan perwakilan diri daripada pelakon sosial. Secara keseluruhan, perwakilan memberi kesan kepada amanah yang amat penting dalam komunikasi risiko. Oleh itu, cadangan-cadangan ini menekankan kepada ketelusan dan penglibatan semua pihak berkepentingan untuk memudahkan pembangunan, penguatan dan pembaikan amanah.

ACKNOWLEDGMENTS

The journey to completing my thesis has been a long one, albeit fraught with various challenges at one point or another. Nevertheless, it has been an extremely satisfying one, thanks to the wise counsel, guidance and strong support of the following people, whose inputs helped shape and strengthen the narrative of my thesis. To all of them, I would like to place on record my sincere thanks and appreciation

My supervisor Dr Surinderpal Kaur for her invaluable input. Her constructive feedback and encouragement made it possible for me to achieve my goal. I am truly grateful for her guidance.

Professor Dr Ng Kwan Hoong who believed in me and agreed to co-supervise me in this study. His impeccable credentials and stature in the industry readily opened doors for me in gaining access to various stakeholders, and that in turn, helped me immensely in my data collection. I am also thankful for his motivation and spiritual guidance which kept me on track.

My dear friend Dr. Lean Mei Li who started me on this journey. Her friendship and moral support were a source of encouragement.

Professor Dr. Kamila Ghazali, Dr. Francisco Dumanig, Dr. Fauziah Taib, Professor Dr. Ray Kemp and Professor Dr. Theo van Leeuwen, who kindly gave their time and expertise to help me improve my work.

The Malaysian Communications and Multimedia Commission for partially funding my data collection.

My siblings, brother-in-law and nephews for their love, moral and emotional support.

Finally, this thesis is dedicated to my late parents, Rocky and Regina Fernandez who I know are still watching over me. The completion of this thesis is the result of the discipline, determination and faith they instilled in me. They are and will always be my source of inspiration.

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LIST OF ABBREVIATIONS

EMBS	: Engineering in Medicine and Biology Society
EMC	: Electromagnetic compatibility
EMF(s)	: Electromagnetic field(s)
IAC	: International Advisory Committee
IARC	: International Agency for Research on Cancer
IEEE	: Institute of Electrical and Electronics Engineers
ICNIRP	: International Commission on Non-Ionizing Radiation Protection
IR	: Ionizing radiation
MBPJ	: Majlis Bandaraya Petaling Jaya (Petaling Jaya City Council)
MPPP	: Majlis Perbandaran Pulau Pinang (Municipal Council of Penang Island)
MPSJ	: Majlis Perbandaran Subang Jaya (Subang Jaya Municipal Council)
MCMC	: Malaysian Communications and Multimedia Commission
MOH	: Ministry Of Health
NGO	: Non-governmental organization
NIR	: Non-ionizing radiation
NRC	: National Research Council
RF	: Radio frequency
RF-EMF	: Radio frequency-electromagnetic fields
SSP	: State Secretariat Penang
Telco/telcos	: Telecommunication company/telecommunication companies
WHO	: World Health Organization

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CHAPTER 1: INTRODUCTION

1.1 Introduction

The key objective of this thesis is to examine discourses surrounding the controversy on radio frequency¹ (RF) emissions from telecommunication structures in Malaysia. The reason is that some members of the public consider it to be injurious to health though it is classified as non-ionising radiation² (Dohle, Keller & Siegrist, 2012; Augner et al., 2010). Non-ionizing radiation is believed to be non-carcinogenic which means that it does not have the potential to cause cancer (WHO, 2015). Nevertheless, the public's fears have been exacerbated as a result of conflicting views by both scientists and experts on RF (Johansson, 2009).

Adopting van Leeuwen's (2008) framework of the representation of social actors and social actions, this study focuses thematically, on the social practices, i.e. the social actors and the social actions in the discourse on RF exposure, particularly in terms of the conflicts and contestations that occur among the various stakeholders. Van Leeuwen (2008) describes social practices as "socially regulated way of doing things" (p. 6). He elaborates that social practices can be "regulated to different degrees and in different ways" (p. 7) for example through strict prescription, traditions, influence of experts and charismatic role models, or through constraints of technological resources. Social practices essentially need a set of social actors in certain roles to perform a set of actions (see Chapter 3 sub-section 3.2.2.5). Therefore, this study focuses on examining the thematic representation of social actors and social actions of the various stakeholder groups that are directly involved in this issue.

¹ Radiofrequency (RF) energy is another name for radio waves (see Glossary: Appendix A).

² Non-ionizing radiation is the term given to radiation in the part of the electromagnetic spectrum where there is insufficient energy to cause ionization (see Glossary: Appendix A).

Different ways of representing social actors and social actions would necessarily involve different interpretations of, and different attitudes towards these representations (van Leeuwen, 2008). As such, this study will look at how the different groups involved in the RF issue represent themselves and the other groups on the perceived health risks from RF exposure. Finally, based on the analysis of the social actors and social actions, this study will explore ways to reduce the contestations of the various stakeholders by formulating recommendations for effective risk communication.

Briefly, this chapter introduces the focus of this research (section 1.1). The background of the research is explained in section 1.2. The research problem and the objectives of the research are identified in sections 1.3 and 1.4 respectively. The three (3) research questions are stated in section 1.5 and finally section 1.6 provides a summary of the seven (7) chapters in this thesis.

1.2 Background Information

There is widespread anxiety and speculation about electromagnetic fields (EMF) as it is perceived as unsafe and life threatening (Dohle, Keller & Siegrist, 2012; Augner et al., 2010). The World Health Organisation (WHO, 2009) describes EMF as something that is present ubiquitously in our environment but is unseen to the human eye and as part of the spectrum of electromagnetic radiation³ which extends from static electric and magnetic fields, through radiofrequency and infrared radiation⁴, to X-rays. Similarly, Johansson (2009) explains that EMFs “are present everywhere in our environment, and except for the visible spectrum, they are invisible to the human eye” (p. 159). The artificial sources of electromagnetic radiation have also “risen tremendously because of

³Electromagnetic radiation is a form of energy that is all around us and takes many forms, such as radio waves, microwaves, X-rays and gamma rays. (See Glossary: Appendix A)

⁴ Infrared radiation is a type of electromagnetic radiation, as are radio waves, ultraviolet radiation, X-rays and microwaves (See Glossary: Appendix A)

the ongoing needs on electricity, telecommunications, and electronic devices" (Pourlis, 2009, p. 179).

EMFs are described as radiofrequency or RF at much higher frequencies (WHO, 2009). RF from telecommunication base stations and rooftop antennas is classified as non-ionizing radiation (NIR) but it has created concerns because of its possible adverse effect on health (Augner et al., 2010; Kemp, 2009; WHO, 2009; Abdel-Rassoul et al., 2007; Schreier, Huss & Rössli, 2006).

Cox (2003) states that in NIR "the quantum of energy is much too small to break a chemical bond⁵ in the way that ionizing radiation such as X-rays⁶ or y-rays⁷ can. As such, the radio frequency radiation is expected to be harmless at low intensities..." (p. 243). On the other hand, WHO (2009) defines ionizing radiation⁸ (IR) as electromagnetic waves that carry so much energy per quantum that they have the ability to break bonds between molecules such as radioactive materials, cosmic rays and X-rays. Ng (2005) confirms that NIR unlike IR "does not have sufficient energy to cause ionization" (p. 2) and therefore IR "is more capable of causing health effects than non-ionizing radiation due to the ionization process" (p. 3). In addition, there is no conclusive evidence that exposure to levels of RF below the published guidelines can cause any adverse health effects (WHO, 2009).

Cox (2003) asserts that the area of concern for RF emission is the level or intensity at which harm is likely to occur. He adds that to address this anxiety, the National

⁵ Chemical bond refers to the forces holding atoms together to form molecules and solids (see Glossary: Appendix A).

⁶ X-ray is a [type of radiation](#) that can go through many [solid substances](#) (see Glossary: Appendix A).

⁷ Y-Ray is a gamma ray which comes after x-rays in the electromagnetic spectrum (higher frequency) (see Glossary: Appendix A).

⁸ Ionizing radiation carries enough energy to free electrons from atoms or molecules, thereby ionizing them (see Glossary: Appendix A).

Radiological Protection Board and internationally, the International Commission on Nonionizing Radiation Protection (ICNRIP) have come up with guidelines stipulating limits within which RF exposure should fall. But scientists, medical experts, politicians, journalists, and mobile telecommunication company specialists are involved in an active debate on whether people are “immune” to RF or if “we are gambling with our future” (Johansson, 2009, p. 157).

Generally, the public is at ease with modern technology but there is growing concern that exposure to RF from these telecommunication base stations and rooftop structures may have an adverse effect on the health and wellbeing of the public (Dohle, Keller & Siegrist, 2012; Rösli, Moser, Baldinini, Meier, & Braun-Fahrlander, 2004). The jury is still out given the differing views and inconclusive answers on RF from a wide range of medical and scientific research perceptive. For example, Blackman (2009) highlights that some published laboratory studies over the past forty years have cited that electromagnetic fields may cause changes in processes associated with cell growth. He states that “EMF effects have been reported in gene induction, transmembrane signalling cascades, gap junction communication, immune system action, rates of cell transformation, breast cancer cell growth, regeneration of damaged nerves and recalcitrant bone-fracture healing” (p. 206).

However, Cox (2003, p. 243) argues that numerous epidemiological studies that have examined incidences of cancer among residents living near telecommunication structures have indicated that the residents are not in danger. Furthermore, WHO has discouraged studies of base stations that link RF to cancer “because retrospective assessment of RF exposure was considered difficult” (Kundi & Hutter, 2009, p 132). As a result, Augner et al. (2010) state there are a large number of studies dealing with

effects associated with using mobile phones but that “the number of publications on possible influences of base stations is still comparatively small” (p. 199).

Adding to the public controversy and media hype, in May 2011 the WHO’s International Agency for Research on Cancer (IARC) classified RF emissions as “2B” “Possibly carcinogenic⁹ to humans” (as opposed to 2A “Probably carcinogenic to humans” or 1 “Carcinogenic to humans”) (see <http://monographs.iarc.fr/ENG/Classification/index.php> attached as Appendix B). This classification is based on limited and hotly debated epidemiological evidence and as such, it has attracted severe criticism from the scientific community who are intensifying the call for precautionary measures (Wiedemann et al., 2013). Furthermore, ambiguity in important information like this makes the public more anxious as the news is difficult for the layperson to comprehend. Hence, Renn (2010) expresses that risk communicators in the field of health and environment need to “explain the concept of probability and stochastic effects” (p. 80) which implies that the authorities should give information that cannot be guessed. However, Juanchich and Sirota (2013) rationalise that there is a tendency for speakers to “moderate the risk they are communicating to serve face-management goals” and therefore, the classification by WHO may be a “face-management” strategy for “introducing uncertainty” or “moderating the degree of certainty” (p. 1268).

There is also confusion internationally as different RF standards are adopted by many developed countries (see Table 1.1: Limit for General Public Exposure to RF Fields). The table highlights that countries like United States and numerous countries worldwide have adopted a standard which is in line with the science-based standards set by Institute of Electrical and Electronics Engineers (IEEE) and ICNIRP. It also draws attention to the fact that Russia and China have set a standard which is as much as

⁹ Carcinogenic means having the potential to cause cancer (see Glossary: Appendix A).

hundred times lower and identifies this standard as science-based too. Additionally, it shows that Switzerland on the other hand follows the lower standard adopted by Russia and China and justifies this as “precautionary”. All these countries claim that the adopted standards are based on expert evaluation of scientific literature and research.

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Table 1.1: Limit for General Public Exposure to RF Fields

Country	Limit for general public exposure to RF fields (2000 MHz) for extended periods of exposure, W/m ² (applies to far-field exposure, extended duration)	Basis
ICNIRP (adopted in numerous countries worldwide)	10	Science-based
U.S. Federal Communications Commission (FCC) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Washington DC 1997. Generally follows IEEE C95.1-1999 with some modifications	10	Science-based
China UDC 614.898.5 GB 9175 –88	0.1	Science-based
Russia Sanitary Norms and Regulations 2.2.4/2.1.8.055-96	0.1	Science-based
Switzerland Ordinance on Protection from Non-ionising Radiation (NISV) of 23 December 1999	0.1	Precautionary

Note: Adapted from *Exposure Limits for Radiofrequency Energy: Three Models*, by K. R. Foster. Retrieved from http://www.who.int/peh-emf/meetings/day2Varna_Foster.pdf

Such contradicting precautionary approaches can be interpreted as a signal of possible risk associated with RF (see Barnett, Timotijevic, Shepherd, & Senior, 2007, Timotijevic & Barnett, 2006; Wiedemann, Thalmann, Grutsch & Schütz, 2006; Wiedemann & Schütz, 2005). This on-going debate about the scientific basis of the public exposure guidelines has progressed to challenges to the authority, and the independence and accountability of ICNIRP itself (Bioinitiative, 2012). The uncertainty in the science, the debates between scientists, the poor quality of science

communication and health risk information are contributing to public health scares about base stations and telecommunication antennas, and reinforces negative risk perceptions and distrust among many members of the public and key stakeholders (Beecher, Harrison, Goldstein, McDaniel, Field, & Susskind, 2005).

Additionally, the conflicting scientific evidence pertaining RF exposure makes the issue of communicating to the public rather challenging (Beecher et al., 2005). This is echoed by Wiedermann & Schütz (2008) as they maintain that the public's anxieties and fears on radiation from base stations and antennas have become socially amplified resulting in problems in risk communication. Many experts feel that this misconception among the public on RF exposure is the result of "limited, false, or inadequate information" (Plough & Krimsky, 1987, p. 7).

1.3 Research Problem

There has been a significant increase of exposure to radio frequency electromagnetic fields (RF-EMF) over the past two decades "due to the introduction of new technologies, especially technology related to mobile communication" (Frei et al., 2009, p. 779). According to Pourlis (2009) "a spectrum of high frequency emissions are incorporated in many aspects of telecommunications" to cater to these new technologies and as a consequence, there is a lot of interest about the possible effects of the radiation emitted from the base stations and transmitters (p. 179). Regardless of this uncertainty the global rise in the use of mobile telecommunication devices has also created an impact in Malaysia as the broadband penetration rate increased from 67.1 percent in 2013 to 70.2 percent in 2014, while the cellular telephone penetration rate rose from 143.8 percent in 2013 to 148.5 percent in 2014 (MCMC, 2014). According to M. Hakim of MCMC (personal communication, February 22, 2012), the steady rise in the number

of users requires an increasing number of telecommunication structures to ensure optimal coverage, especially in developed urban areas. This has resulted in a growth of telecommunication structures in the environment, such as base stations and antennas on roofs, or such structures placed inside or near public premises.

M. Hakim of MCMC (personal communication, February 22, 2012) states that many residents and activists groups in Malaysia are campaigning against the construction of these structures in residential areas and sensitive areas like schools. The residents also want the RF limits to be lowered to the precautionary and science based levels adopted by China, Russia and Switzerland as they fear that RF emission from these structures is harmful to health. The telecommunication companies (telcos) on the other hand require the construction of these structures to keep up with public demand and to provide good service and less dropped calls. Both MCMC and the telcos have assured the public that the radiation levels are acceptably low and within the international public exposure guidelines set by the ICNIRP and IEEE. However, these assurances are being rebuffed by a sizeable segment of the population.

Wiedermann et al. (2013) state that the public's anxieties and fears on radiation from base stations and antennas are unfounded and exaggerated, and are merely communication problems, more precisely, problems of risk communication. Therefore, risk communication on RF in Malaysia needs to be better addressed and disseminated to manage the public's perception on RF. However, risk communication initiatives can only be effective if the knowledge, value and practices of all stakeholder groups are taken into account to develop better understanding and trust. This is because risk assessment is influenced by the risk assessor's values, education, experiences, and even,

stake in the outcome and, also by psychological, social and political factors (Slovic, 1993, Slovic, 1999, Slovic 2000, Slovic, Finucane, Peters, & MacGregor, 2004).

So the various stakeholders view RF exposure through different lenses and an examination of the social practices and the discourses on RF exposure will provide valuable insight for effective risk communication. Besides, risk communication can be effectual only if the reasons behind the conflicting views are identified. Cvetovich and Lofstedt similarly observe that current research in risk assessment and management shows an understanding that “judgments of risk are not limited to assessments of physical processes. . . [but] are also reflections of the understanding of social systems and the actors playing roles within them” (cited in McComas, 2006, p. 76). Hence, there is a need to study the underlying reasons behind the health debates and this can be undertaken by examining the way people talk about this issue, and by the way they view the other stakeholders in this contestation.

1.4 Research Objectives

In line with the problem, the overarching objective of the study is to investigate the ways in which the social practices (see van Leeuwen, 2008) on health issues pertaining to RF exposure from telecommunication structures are discursively constructed among the stakeholders, particularly in terms of contestations and challenges. Van Leeuwen’s (2008) description of social practices is provided in Chapter 3 sub-section 3.2.2.5.

The study therefore focuses on the following specific objectives:

- i. To investigate the thematic representation of social actors and social actions in the discourse on RF exposure from telecommunication base stations and roof top antennas in Malaysia; and
- ii. To identify potential means of reducing the contestations among the stakeholders for effective risk communication on RF.

1.5. Research Questions

Consistent with the objectives, the study addresses the following research questions:

Research Question 1:

How are the social actors involved in the health debates on RF exposure from telecommunications structures represented by the various stakeholders?

Research Question 2:

How are the social actions involving the exposure to RF from telecommunications structures represented by the various stakeholders?

Research Question 3:

How can the analysis of social practices improve risk communication on RF exposure from telecommunications structures in Malaysia?

Research Question 1 looks at the thematic representation of the social actors, specifically what kind of roles the groups and organisations play in the health debates. These actors can be represented positively or negatively, or as ‘us’ versus ‘them’ or, as part of an ‘in-group’ or ‘out-group’ (see van Dijk, 2009; Wodak & Meyer, 2009). Research Question 2 looks thematically at social actions particularly if the actions are

performed in a sequence because not all actions follow a regulated pattern. Some social actions may be fixed, some may be flexible and some do not allow or follow certain choices (see van Leeuwen, 2008). The social actions belong to a social practice and therefore these actions can be legitimised or delegitimised (van Leeuwen, 2008; Wodak & Meyer, 2009). Finally, Research Question 3 applies the findings from Research Questions 1 and 2 to improve current risk communication initiatives, addressing the contestations in the health debates on RF.

1.6 Thesis Outline

Chapter 1 frames the problem under investigation and presents the research questions that guide this study. The chapter briefly explains in the introduction the context of the problem that is being researched, but the subsequent chapter (Chapter 2) further elaborates the issues on risk communication in general and on risk communication on RF specifically. A brief explanation of the research questions is also provided and the chapter concludes by providing an overview of all the chapters in this research.

Chapter 2 covers literature review in two areas: risk communication and current linguistic studies on risk. In the first section, the literature review covers risk communication in general and addresses the concept of trust: a vital component in risk communication. Trust or the lack of it plays a pivotal role in either making or breaking risk communication initiatives. The section also looks at risk communication on RF and highlights the pressing problems faced by risk communicators in the telecommunication industry. The second section of this chapter specifically looks at current studies on risk and highlights the gap that this research fills in the area of risk communication and linguistic studies.

Chapter 3 has three (3) sections: the first section explains the theoretical framework while the second part explains the analytical frameworks and finally the third part describes the methodology. The theoretical framework draws from selected concepts in CDA, namely discourse, representation, ideology, power and social practice. The analytical frameworks for Research Questions 1 and 2 are based on van Leeuwen's (2008) network for the representation of social actors and social actions respectively. Research Question 3 uses the researcher's adapted version of the Keys Steps in Applying Effective Risk Communication. The rationale for the changes to the original framework is provided in this chapter. The third section describes the data and the collection/analysis procedure used in this research.

This research uses qualitative data from spoken conversations. The data is collected through a purposive sampling method using semi-structured interviews with relevant stakeholder groups. A total of thirty-one face-to-face interviews have been conducted with representatives from seven (7) stakeholder groups namely government department/agencies, telcos, residents, activists, politicians from both the ruling state government and the opposition, experts and representatives from the media. The data is analysed based on selected classifications from van Leeuwen's social actors and social action categories and these categories have been derived from a pilot study conducted on samples of the data.

Chapter 4 covers Research Question 1, which is the representation of the social actors in the health debates on RF, specifically on how the various stakeholders represent themselves and the other stakeholders. The various social actors i.e. the seven (7) stakeholder groups are analysed and discussed based on van Leeuwen's (2008) Social Actor Network categories. The selected categories surfaced from a pilot study

conducted on samples of the data from each stakeholder group. The analysis for each stakeholder group is divided into two (2) sections: the representation of self and the representation of the other. The representation of the other are classified in three (3) broad themes that focus on the others' levels of credibility, knowledge and motivation as these themes recur constantly in the analysis of the data. The chapter concludes with a summary of the analysis and discussion.

Chapter 5 looks at Research Question 2 i.e. the representation of social actions in the discourse of the various stakeholders on RF exposure and its impact on health. The social actions are analysed based on five (5) prominent and recurring themes: granting approval for the construction of telecommunication structures, construction of telecommunication structures, educating the public on RF, protests by residents and media reporting on RF related issues. The analysis and discussion of the social actions are based on van Leeuwen's (2008) Social Action Network categories. The analysis in each theme looks at the action of the main participant(s) and the reaction to that particular action by the affected social actors. The chapter closes with a summary of the analysis and discussion of the social actions that appear in the five (5) themes.

Chapter 6 answers Research Question 3. The findings from Chapters 4 (representations of social actors) and 5 (representation of social actions) are applied on the researcher's adapted version of Key Steps in Applying Effective Risk Communication framework to formulate effective risk communication strategies to address the health debates on RF. The chapter is divided into two main sections: the first section applies the findings to the adapted framework to identify the hindrance in effective risk communication, and the second part focusses on recommendations for successful risk communication. The chapter concludes with a summary.

Chapter 7 provides a synopsis of this study and restates the research questions that guided this thesis. The chapter highlights the main concerns of the study and provides a summary of the findings for each of the research questions, and a final discussion. The chapter also looks at the contributions as well as the limitations of the study. The chapter concludes by addressing the implications for future research.

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CHAPTER 2: REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter aims to provide a comprehensive explanation of two (2) areas: risk communication and current linguistic studies on risk. Sub-section 2.2 provides an explanation on risk communication both in general and specifically on RF, and sub-section 2.3 focuses on current linguistic studies on risk to establish the gap in this area of research that this study intends to fill. Finally, sub-section 2.4 provides a summary of this chapter.

2.2 What is Risk Communication?

According to Boudier (2010) and Löfstedt (2010), risk communication belongs to the area of multi-disciplinary research rather than independent disciplines and has its roots in risk perception, a field developed by Gilbert White at the University of Chicago in the 1940s. They add that risk communication gained prominence when it was first applied to natural hazards and that this paved the way in the 1970s for Baruch Fischhoff, Paul Slovic and others to explore technological hazards. Boudier (2010) and Löfstedt (2010) also highlight that the studies by these now prominent figures in risk communication reveal that the public perceive certain risks differently than others for a number of reasons, such as degree of control, catastrophic potential, and familiarity. With growing interest in risk communication, the National Research Council (NRC) came up with a formalised definition in the 1980s:

Risk communication is an interactive process of exchange of information and opinion among individuals, groups and institutions. It involves multiple messages about the nature of risk and other messages, not strictly about risk, that express concerns, opinions, or reactions to risk messages or to legal and institutional arrangements for risk management. (1989, p. 21)

Fischhoff, Bostrom and Jacobs-Quadrel (1993) and Löfstedt (2005) affirm that in line with this definition by NRC, risk communication needs to study the nature of the risk under consideration and then understand the attitudes and mental representations of those involved in the two-way communication process. Leiss (1996) states that risk communication involves “the flow of information and risk evaluations back and forth between academic experts, regulatory practitioners, interest groups, and the general public” (p. 86). In the same way, Covello (1993) describes risk communication as “the exchange of information among interested parties about the nature, magnitude, significance, or control of a risk” (p. 18).

Scheer, Benighaus, C., Benighaus, L., Renn, Gold, Roder, and Bol (2014) add to the definition of risk communication by describing it concisely as communication that “centres on the interactive exchange of assessments, estimations, and opinions on hazards and risks between various stakeholders involved” (p. 1270). They clarify that “hazard is associated with the intrinsic ability of an agent or situation to cause adverse effects to a target such as people, environment etc.” while “risk in contrast, takes the probability and the scale of damage into account that a harmful event will occur” (p. 1271). Risk is also defined as the “things, forces, or circumstances that pose danger to people or to what they value” and has a likelihood or probability of loss occurring (Stern & Fineberg, 1996, p. 215). Succinctly, risk communication is an interactive exchange of information among individuals, groups, and institutions related to the assessment, characterisation, and management of risk (McComas, 2006).

The definitions stress on the presence of various interested parties that risk communicators need to interact with. The interested parties in risk communication are identified to be government agencies, corporations or industry groups, unions, the

media, physicians, scientists, professional organisations, special interest groups, communities and individual citizens (Ruddat, Sautter, Renn, Pfenning, & Ulmer, 2010, p. 262; Boholm, 2009, p. 336; McComas, 2006, p. 77; Covello, 1993, p. 18). As such, the merit of risk communication lies in its ability to support specific goals of an organisation challenged by a potentially hostile environment in which the various actors are vying to achieve their own interests and objectives (see Wardman, 2008, p. 1622).

With such diverse stakeholders, Löfstedt (2003a) describes the ideal interaction in risk communication as “not a top-down communication from expert to the lay public, but rather a constructive dialogue between all those involved in a particular debate about risk” (p. 417). Powell and Leiss (1997) agree that risk communication has moved away from a paternalistic top down mode where risk experts have the leeway of communicating probability estimates of risk events to a two-way dialogue which allows understanding of public fears and correction of their knowledge gap, if any. However, despite all these efforts, risk communication initiatives are largely met with resistance because of public’s skepticism towards the motives of politicians, scientific advisors, regulators, and the industry (Petts, Horlick-Jones & Murdock, 2001). This is because all parties in health debates have mobilised experts to back up their position and the public are torn between these conflicting claims of evidence (Ruddat et al., 2010, p. 262). This has caused major irritations and often frustrations to the public, and as a result, they are demanding for transparency and inclusivity in decision making (see Faulkner & Ball, 2007, p. 73).

Consequently, Löfstedt (2005) and Fischhoff et al. (1993) affirm that the level of trust conferred on critical actors and organisations by the public is also an important criterion in risk communication as the interaction involves multiple parties. O’Donnell

(2011) states that stakeholders make judgements about risks based on their own perceptions of those risks, and that such judgments may be attributed to existing differences in values, needs, assumptions, concepts, and concerns between the relevant parties. Hence, he suggests that to maintain trust it is critical “to ensure that the risks that are identified for the process or item under study are communicated to decision makers, stakeholders, and other interested parties, in a way that minimises misperception” (p. 84). He elaborates that information that is ambiguous, complex, unpredictable, probabilistic or when it is unavailable or inconsistent creates uncertainty and as such the public tends to rely on their own judgement to assess risk. Thalmann and Wiedemann (2006) also hold similar views that the public rely on affective heuristics when issues are complex and uncertain.

Besides “factors such as gender, race, political worldviews, affiliation, emotional affect, and trust are strongly correlated with risk judgement” (see Slovic, 1999, p. 692). Assessing risk encompasses both objective and subjective qualities and therefore risk judgments are to some degree, a by-product of social, cultural, and psychological influences (see McComas, 2006; Kasperson & Kasperson 2005; Kasperson, J, Kasperson, R., Pidgeon & Slovic, 2003). Social, cultural and psychological factors condition people to notice and value certain interactions, relationships, and objects. These factors thus can lead individuals to trust or distrust messengers of risk communication initiatives.

Therefore, trust is regarded as a crucial concept for understanding societal communication as it is strongly “connected to issues of complexity, contingency and control” conveyed by a messenger on a specific risk (Quandt, 2012, p. 9). Trust is vital

in creating a bond between the various stakeholders when exchanging assessments, estimations, and opinions on hazards and risks.

2.2.1 Concept of Trust in Risk Communication

Leiss (1995) stresses that trust is important for successful risk communication. He explains this in the context of seeking consensus from the various stakeholders on matters of health and environmental risk controversies because based on historical experience parties mistrust each other in such contestations. This mistrust stems from incidents in which “risk promoters have concealed or ignored relevant risk data or simply have sought to advance their own interests by selective use of such data” (p. 685). He highlights that all participants in a contestation “have particular interests to advance and that each will employ tactics and strategies (including “dirty” ones) calculated to maximise its own interest” (p. 686). Thus, Leiss recognises the importance of trust and credibility among social actors for effective communication, as he believes that all parties in a contestation have very good reasons for mistrusting each other.

In support, Twyman, Harvey, and Harries (2008) clarify that trust is determined by trust in motives and trust in competence. They elaborate that trust in motives which is also known as social trust involves “the motives of the trustee (benevolence, integrity, honesty, fairness)” while trust in competence relates to “the competence of the trustee (ability, competence, expertise, knowledge)” (p. 111). Also, Siegrist, Gutscher, and Earle (2005) in their model of trust highlight that trust in motives is usually higher in advisors whose values are similar to those of the participant. In addition, Bakir (2006) says that the nature of social group relationships affect trust and this has an impact on the responses to risk communication as it is common now for risk issues to be drawn

into the agenda of social and political groups. Similar views are echoed by Cormick (2011) in his five key lessons on risk perception in which he quotes that one of the key lessons is “that people most trust those whose values mirror their own” (p. 14). The other four lessons are:

- i. When information is complex, people make decisions based on their values and beliefs rather than on facts and logic;
- ii. People seek affirmation of their attitudes (or beliefs) – no matter how fringe – and will reject any information or facts that counter to their attitudes (or beliefs);
- iii. Attitudes that are not formed by facts and logic are not influenced by facts or logic;
- iv. Public concerns about the risk of contentious science or technologies are almost never about the science – and scientific information therefore does little to influence those concerns.

These five key lessons are related to Covello’s views on trust and perception in risk communication (see Cormick, 2011). Covello (2010) states when people are stressed, their perceptions and decisions are affected by a wide range of factors but that technical facts are often the least important (worth less than 5%). He also highlights that under stress, people have difficulty hearing, understanding and remembering information as they are distrustful of others and that they focus more on negative than positive information.

Furthermore, Covello (1993) indicates that in terms of trust, physicians are deemed to be most trustworthy, while the government and industry participants are believed to be the least trustworthy though they are acknowledged to be knowledgeable. In terms of environmental risk communication, the ratings of confidence in the government have eroded considerably in the last thirty years and this is a barrier in risk communication

efforts (see Riedlinger & Rea, 2015; Peters, Covello, & McCallum, 1997). As a result of low credibility, most risk messages from government authorities are viewed with suspicion (McComas, 2003, p. 169). This view is supported by Frewer et al. (1996) and Mitchell (1992) as they highlight that the public feels that these authorities have vested interests in risk messages. A study by Markon, Crowe and Lemyre (2013, p. 319) on risk communication corroborates that the public has low trust in government authorities and as a result, demands a more democratic and responsible governance free from political and economic intervening motives.

Because of low credibility, the government uses blame-avoiding strategies to evade the backlash from the public (Wenzelburger, 2014). Blame-avoidance strategies are commonly practised to avoid responsibility and liability. As such, Hansson (2015) is of the view that “blaming and denying are strategically planned and serve positive self-presentation and negative other-presentation” (p. 299). However, blame avoidance involves matters of rightness and wrongness. Hence, Wyatt (2012) asserts that blame has a “moral component, which involves judging” (p. 157) and that leads to an estrangement, “a shattering of a previously held connection” (p. 156).

Therefore, social trust needs to be established by government departments and agencies managing risk and this can be initiated by consensual agreement and co-operation in decision making. However, managers of environmental risk have different responsibilities and accountabilities, obligations and options which contribute to conflicting interests (Boholm, 2009, p. 341). In addition, Clarke, Chess, Holmes, and O’Neill (2006, p.160) highlight that inter-organisational departments and agencies “involving law enforcement, public health, and clinical medicine which manage risk have become major battlegrounds” (p.160) because their responsibility, power and

authority are unclear. Such situations are not conducive in risk communication as Clarke et al. (2006) advocate that there must be rhetorical consistency to avoid public confusion and over-reaction. They affirm that policy makers must have interagency coordination so that the government can read from the same script and speak with one voice. This requires the assertion of power by the various government social actors and such exercise of authority leads to conflicts.

Peters, Covello, and McCallum (1997) elaborate that “as public trust in institutions has declined, public trust in citizen groups has increased” (p. 43). Equally trust in media and public authorities are also shrinking as many studies reveal that the public feel that they are part of a “staged” reality and are being manipulated specifically by the media (see Quandt, 2012, p. 7). Besides, the media is powerful in influencing the public and the media slant can contribute to either an overestimation or underestimation of risk.

Slovic (1993) proves the fragility of trust through the trust asymmetry principle, where he explains that negative risk information reduces trust more than positive information increases trust. Further, White, Pahl, Buehner and Haye (2003) affirm that negative information reduces trust in all individuals and that this impact is more pronounced in those with pre-existing negative attitudes. They add on the other hand positive information on trust increases trust only in those with pre-existing positive attitudes. The value of risk communication is therefore understood instrumentally according to how it might support the particular aims of an organisation faced with a potentially hostile environment in which different actors vie to realise their own interests and ambitions. Therefore, “trust in institutions responsible for risk management and communication is an important determinant for risk acceptance and perceptions (see

Kleef, Fischer, Khan,& Frewer, 2010, p. 1004). For this reason, the concept of trust plays an important part in risk communication.

As for this study, it involves many stakeholders and the basic understanding of risk differs within institutions, societies and lay people (Hampel, 2006). In addition, Boholm (2009) and Clarke et al., (2006) p.160 highlight that agencies managing risks have become major battlegrounds because they have different responsibilities and accountabilities, obligations and options which contribute to conflicting interests. Hence, there is reason for the stakeholders in this study to view the 'other' with suspicion as they have differing interests and agendas.

2.2.2 Approaches in Risk Communication

According to Covello (2010), risk communication is based on four theoretical models: risk perception, mental noise, negative dominance and trust. These four models provide explanations on the processing of risk information, the formation of risk perceptions and the basis for making risk decisions.

The risk perception model looks at different factors that affect how a particular risk is perceived. The factors do not look at the risk *per se*, but they concern the moral and emotional responses of an individual towards risk. The common risk perception factors are: controllability, understanding, uncertainty, trust in institutions and human origin. Hence, Bohlin and Host (2014) highlight that the risk perception model implies that risks that are “perceived to be under the control of others, are poorly understood, have uncertain dimensions, associated with institutions lacking in trust” (p. 2).

The mental noise and the negative dominance models relate to how individuals perceive risk information, while being in a state of stress or anger. The mental noise

model highlights that an individual will not be able to process information effectively and practically when under stress or anger. As such, Bohlin and Host (2014) state that there “is a need for visualised risk communication material that is easy to comprehend and which builds on what the individuals already know” (p. 2). Negative dominance suggests that an individual will pay more attention on losses and negative information when they are in a state of anger. Hence these models emphasise the importance of positive or solution oriented messages when communicating with the public.

Finally, the trust determination model looks at the need to establish public trust in order to make risk communication efforts more readily acceptable. This model hinges on the fact that individuals are likely to trust authorities less when they are distressed. As such, the model proposes that trust must be established before an actual crisis event occurs. Bohlin and Host (2014) explain that “there has also been a move toward theories stating that risks and threats are sociocultural processes rather than objective factors” (p. 2). They add that “such theories often emphasise the importance of public trust in the messenger of a risk for how the risk is perceived and acted upon” (p. 2).

The models indicate that trust is a social and communicative concept which is aimed at specifically connecting two or more actors. Hence, trust is regarded as a crucial concept for understanding societal communication, as it is strongly “connected to issues of complexity, contingency and control” conveyed by a messenger on a specific risk (Quandt, 2012, p. 9). Trust is therefore central in risk communication as it vital in creating a bond between various stakeholders when exchanging assessments, estimations, and opinions on hazards and risks.

2.2.3 Contestations in Risk Communication Studies on RF

In recent years, the nature of risk has shifted considerably to environmental and health risks, and this change is attributed to the rapidly increasing pace of scientific and technological development. Renn and Benighaus (2013) point out that technology shapes all aspects of our life and contribute to our well-being but there is growing concern that “production, use and processing of technologies” (p. 293-294) are harmful to human health. Correspondingly, Beck (2006) highlights that modern society is “increasingly occupied with debating, preventing and managing risks that it itself has produced” (p. 332). As such, studies on risk communication pertaining to RF have identified several contributing factors for the contestation. These factors are explained in sub-sections 2.2.3.1 to 2.2.3.5.

2.2.3.1 Siting of telecommunication structures

People generally enjoy the convenience of mobile communication but are opposed to having mobile phone base station sites near their neighbourhoods and they prefer these telecommunication structures to be located far away from living areas (see Cousin and Siegrist, 2010a, 2010b; Dohle, Keller and Siegrist, 2010). Hence, the construction of base stations has become a bone of contention in many areas where people live or work. This is supported by Dohle, Keller and Siegrist (2010) as they state the “selection of a new base station often results in conflicts between providers and public authorities, on one hand, and residents on the other” (p. 825).

Dohle, Keller and Siegrist (2010) explain that from a technical perspective, for uninterrupted network coverage, it is necessary to construct the telecommunication structures in the vicinity of places where people want to use the phones. They add that the construction of telecommunication structures outside of living areas results in

unstable mobile reception and an increase in the radiation level to the maximum for the mobile phone user. Cousin and Siegrist, (2010a) add that centrally located base stations reduce the mobile phone user's radiation exposure because mobile phones and telecommunication structures are connected entities and thus radiate less when the distance between them decreases. Further, WHO (2000) confirms that levels of RF exposure inside or to the sides of buildings with telecommunication structures on their rooftops are normally very low.

The residents object telecommunication structures for two reasons: aesthetic-cultural reasons and health risks reasons (see Dohle, Keller & Siegrist, 2012; Cox, 2003; Law, McNeish, & Gray, 2003). The aesthetic-cultural objections are based on the visual obstruction and intrusion that these "unpleasant looking tall" structures create in the surrounding landscape while the health risk objections are based on the public's fear of radiation and their sceptical attitude towards scientific competence (Cox, 2003, p. 241).

Hence negative emotions especially fear and anger play a more important role than positive emotions in this contestation. Dohle et al. (2012) state that fear and anger reactions in the context of siting of base stations are "based on three appraisal dimensions: control, certainty, and fairness" (p. 436). Dohle et al. explain that the public have no control over the siting of base stations and RF exposure. They are uncertain of the health risk and they feel that they are at the receiving end of manipulated outcomes by the authorities who are powerful in this contestation. Then again, the telcos are convinced that they should inform the residents on siting decisions of telecommunication base stations and antennas but they have been accused of providing incomplete, biased and misleading information. So to combat these claims, commonly accepted procedures in consultation with affected residents must be developed and

implemented if telcos plan to erect telecommunication structures (see Ruddat et al, 2010).

Law et al. (2003) highlight that “the most intense controversy concerning the siting of base stations has been generated in urban settings by their spatial proximity to 'sensitive' built structures, such as hospitals, schools and residential estates” (p. 323). Therefore, it is believed that the health fears are intimately tied up with geography rather than technology per se and as such a more geographically-sensitive approach to the siting of these telecommunication structures may seem like a plausible solution (see Kleef et al., 2010, p.1005).

2.2.3.2 Uncertainty of perceived risk

Dohle et al. (2012, p.436) explain that people are uncertain about the degree of risk associated with telecommunication structures as “it is a relatively new technology and that many people (including experts) are uncertain about its impact on individuals”. This is despite WHO’s (2000; 2009) assurance that it is unlikely that high-frequency RF-EMF pose a severe risk to human health within 10 years of exposure. This is because little is known about the long-term health effects of RF from these structures. As such, Renn and Benighaus (2013) say technologies tend to polarise society because people who live within the vicinity of technical installations or are exposed to these hazards are concerned about the potential harmful side effects though they use these technologies in their daily life and have taken the benefits for granted. They add that on the other hand “other stakeholders, such as industrial and engineering associations, emphasise these benefits and like to leave the impression that all risks are under control” (p. 294). This they say has given rise to serious contestation about the evaluation of risk.

A series of hazardous incidents like the Bhopal chemical plant and the Chernobyl nuclear plant tragedies, and the recent Fukushima Daiichi nuclear disaster have pressured governments and regulators to reduce or control risks. Thalmann and Wiedemann (2006) also state that descriptions of terrifying diseases like lung cancer, leukaemia, skin cancer, tumours, and so forth that are supposedly caused by exposure to RF have influenced information processing and a layperson's appraisal of risk. Generally, it is believed that concerns about RF may have also intensified firstly because of its negative emotional association to the word "radiation", and secondly, due to the invisible nature of RF-EMF and its technical properties that can only be understood by science (see Kleef et al. 2010; Soneryd, 2007).

This unclear and unknown risk about RF has contributed to the negative emotional response which has impacted the layperson's information processing and risk appraisal. Additionally, according to studies on the RF-EMF debate undertaken by Wiedemann and Schutz, Yaguchi et al., Slovic, Frewer et al., Peters and Slovic, Vaughan, Eagly and Chaiken and Dake it has been ascertained that concerned people appraise the RF-EMF risk as being higher than unconcerned people (cited in Thalmann & Wiedemann, 2006, p.464). Kleef et al. (2010) also explain that people's perception of risk is lower only when they feel that they can exercise control over the amount of risk to which they are exposed to. They also add that "the level of perceived risk is closely related to the perception of unknown consequences of a technology" (p. 1004).

2.2.3.3 Conflicting views of the scientific community

Yasui (2013) highlights that the Fukushima crisis gives rise to immense debate over the potential health effects of low-dose radiation exposure. He ascribes this to the "confusion among the general public because some experts have argued that low-dose

exposure has serious health risks, while mainstream experts explain that epidemiological studies are unlikely to detect any increase in the risk of cancer or other serious diseases” (p. 937). Markon et al. (2013, p. 314) validate this argument as they state that scientists themselves are engaged in a controversy over the potential health as conceptualisations of uncertainty in health risk differ across scientific disciplines. As a result, Yasui (2013) adds that the public are confused as to which statement is trustworthy as they lack the knowledge to validate the arguments from both sides. If this confusion cannot be resolved by the scientific community then it “reduces the strength of confidence” the public have in the cause and effect chain of RF from telecommunication structures (see Renn, 2010, p. 92).

Moreover, Juanchich and Sirota (2013) draw attention to the reasons behind the uncertainties in risk communication messages as they affirm that the speakers on risks tend to moderate the dangers they are communicating “to serve face-management goals” (p. 1268). They explain that there are two categories of face-management employed in risk communication: “one directed toward the hearer, to soften a threat and to smooth social interaction and the other directed toward the speaker, to avoid blame in case the predicted outcome does not occur” (p. 1269). The public is torn between these contradictory and ambiguous information and claims when such differing confirmations are echoed by representatives of politics, science, industry, the media and the civil society.

To add to the confusion and frustration of the public, the parties in this contestation “have mobilised experts to back up their position” (see Ruddat, et al., 2010, p.262). In addition, Kortenkamp and Basten (2015) emphasise that individuals find it hard to ignore information that is given to them but later disconfirmed because it simply leads

to confusion and lack of trust. Faulkner and Ball (2007) also add that “science translates poorly in complex socioeconomic contexts” (p. 74) because of the increase in vulnerability caused by increase in population, wealth and poverty. Therefore, the interpretation of the conflicting information on RF’s impact on health in a challenging socioeconomic environment has created confusion and division in the people’s risk perception of RF. So, Slovic (1999, p. 689) says that “risk management has become increasingly politicised and contentious” as it is riddled with “polarised views, controversy, and conflict”

2.2.3.4 Controversy over the role of the media

Wilkinson (2010) indicates that studies on risk tend to assume that the media is “a source of exaggerated public anxieties surrounding particular types of risk” (p. 21) because they are particularly prone to sensationalise the most negative aspects of technological hazards. However, the media is also described as playing a significant role in correcting the misperception of RF because the media and the press is the primary source of science information that shape the public’s perception of risk (Trumbo, 2012; Dunwoody, 2008; Wakefield & Elliott, 2003). Bohlin and Host (2014) add that the print media specifically “newspapers have a significant influence on readers’ behaviours concerning health risks as well as on public trust in local health care actors” (p. 2). So risk communicators find the media a useful tool to rectify the public’s misperception on RF. Wilkinson (2010) highlights that the problem of managing public opinions about risk depends on finding and securing the appropriate channel to transfer correct information. He explains that if the right information is made available to individuals and if the experts are given adequate time and space to get their message across through mass media, then “it will be possible to discipline people’s attitudes and responses to risks” (p. 22) to more readily conform to expert guidance and advice.

Cookson (2010) reveals that many scientists misunderstand the role of the media in risk communication, and hence expect journalists to play a kind of educational or health promotion role which is quite alien to media's independence. He affirms that an important attribute of journalism is "to investigate and present news that established authorities would rather not see published" and that "journalism in a free society should challenge authority" (p. 112). Cookson also believes that the primary role of the media is to entertain, interrogate, expose and ultimately sell papers and he acknowledges that in a risk society scare stories sell newspapers. These scare stories may shape the reader's perception regarding RF in a negative way. Flynn, Peters, Mertz, and Slovic (1998), Frewer, Miles and Marsh (2002), Hill (2001), Lofstedt, (2003b); McInerney, Bird and Nucci (2004) agree that constant media attention contributes to the social amplification of risk. As such, Kasperon et al. (2003) and Eiser (2004) concur that the media, in a bid to sell papers, is interested in highlighting disasters and this in turn amplifies the perception that environmental hazards (like exposure to RF) as common occurrence which needs to be addressed.

However, Yasui (2013) draws attention to the fact that journalists in general are not knowledgeable about complex scientific topics like RF. He highlights that journalists have tried "to present critical questions to the experts and clarify points of controversy, but in most cases, journalists simply release the reports of both sides because they lack expert knowledge" (p. 943). Cookson (2010) admits that news editors are likely to regard science "as a ghetto subject that is too much trouble to cover properly" (p. 111). However, Cookson admits that this line of thinking is slowly changing as the scientists are moving away from "a culture of complaint about the media towards a more sophisticated understanding of how to influence risk stories and to use the opportunities provided by media attention to get their messages across" (p.113). He also

acknowledges that the media is becoming more sophisticated about risk communication concerning science and health.

2.2.3.5 Lack of knowledge transfer

A study by Ruddat et al. (2010) and Covello (2010) involving experts from politics, media and science acknowledge that the confusion on RF's impact on health can be addressed effectively by improving knowledge transfer. Their findings suggest the use of a multi-channel media approach to reach out to the public so as to better target the various groups like school children, young adults, the senior citizens, concerned citizens, unconcerned citizens etc. through the use of their preferred media and targeted information packages. In support, Ruddat et al. (2010) and Covello (2010) highlight the need to use easy-to-understand messages to reach the public. The industry has also been advised to be more proactive in engaging with the public to gain more credibility.

Overall the studies show that trustworthiness and the credibility of the risk communicator are the most important attributes for an effective communication strategy. Ruddat et al. (2010) and Covello (2010) believe that knowledge transfer should start with early education of students so that young people know how to judge risks and to shape their lives accordingly. As highlighted in sub-section 2.2.3.3, science translates poorly in complex socioeconomic situations, so the challenge for risk communicators is to assist stakeholders specifically the public to understand risk-based decision so that they can make informed choices (Renn, 2010). The difficulty for risk communicators is to base judgements on sound science, responsible values, and responsible policy which goes against the norm and to communicate that information to the public who often have inadequate capability to understand, and appreciate complex messages (Heath & O'Hair, 2010, p. 7).

The public considers ambiguous information on RF of no help, and thinks such messages are bias and skewed to make the impact of RF exposure look insignificant. As such Ruddat et al. (2010) and Covello (2010) suggest that risk communication messages must be neutral and represent all sides in the debate. They infer that this approach builds trust and allows participatory decision making for siting of telecommunication structures. They also affirm that the communication efforts must be coordinated for effective knowledge transfer.

2.3 Gap in Risk Communication Studies

Risk communication pertaining to RF exposure ultimately requires public participation and dialogue, transparency and trust between stakeholders (see Wiedemann & Schütz, 2008, p. 526). Hence, it is pertinent to understand the representation of different opinions and reactions of the actors involved as the discourse on RF carries different communicative and informative intentions based on each stakeholder's different contextual references. This is supported by Markon et al. (2013) as they attest that the public "evaluate risks based on other sets of criteria and values, in the context of their daily lives" (p. 315) and this also validates Slovic's (1993; 1999; 2000) views that social, cultural, and psychological influences play a role in public's perception of risk.

Therefore, risk communication is complex and far from being straight-forward. The contradictions on a specific perceived risk create tensions and conflicts. As such, it is crucial to recognise that risk communication does not just involve representation of different opinions but it also carries different communicative and informative intentions based on the stakeholders' different contextual loci. Therefore "in conjunction with the schemata, operations and cognitive formats of those affected, risk gives rise to an

intersubjective experiential context filled with concern and developing social relations” (Strydom, 2008, p. 8). This possibly explains the increased interest in research in risk communication from a linguistic perspective.

Strydom (2008) adds that risk communication is a “central component of the communicative-discursive process where society – in this case, the ‘risk society’ – is constituted and organised” (p. 7). He explains that this process of constitution is typified by a non-linear social dynamic. This is in reference to the diverse opinions and beliefs that are carried and promoted by the various agents like the government and corporate institutions, the experts, NGOs, the public and the politicians based on their differing risk perceptions and risk communication cultures. Strydom adds that these agents “entertain different communicative and informative intentions in accordance with their distinct modes of engagement with the world” (p. 7). As such he says that “risk communication is socially shared, creative cognition or a creative collective cognitive process whereby a community forms and shapes a world for itself” (p. 7).

Also, Breakwell states “that the social representations of risk that emerge are generally purposeful and shaped by the social polemic that takes place between different actors with the intention of furthering self-serving interests” (cited in Wardman, 2008, p. 1631). As such, Wardman (2008) explains that risk communication is basically influenced by powerful discourses, each with its own separate content as well as internal and external power/knowledge dynamics. He also highlights that to understand discourse on risk, one needs to consider how social, economic, or political forces help to shape and define a particular risk problem. This is in line with CDA’s goal to make opaque aspects of discourse on social practice visible to the public because the

ideologies and relations of power which are the sources of discourse are often unclear to the lay person (see Fairclough, Mulderrig & Wodak, 2011, p. 358).

CDA hence challenges risk communicators to look beyond seeing language as abstract as it advocates that words (written or oral) are used to convey a broad sense of meanings and the meanings conveyed are identified by the immediate social, political, and historical conditions. Furthermore, Slovic (2000) highlights that these factors have an impact on the way people perceive risk communication. Therefore, I argue that CDA aids in better understanding the social practices in risk communication specifically from the representation of the various social actors and social actions directly involved in the risk. The representation of the various social actors and social actions facilitate in identifying the reasons behind any contestation on a perceived risk and allows remedial strategies to be undertaken by risk communicators to address the problem. Hence, this study applies CDA as its theoretical framework and the use of CDA in this study is explained in in Chapter 3 sub-section 3.2.

2.3.1 Linguistic Studies on Risk

This section examines recent linguistic studies on risk. These studies are not the only investigations on risk. However, they are chosen to highlight the different approach and focus of each study so as to establish the gap this study aims to plug in this area of research.

A study by Maesele (2015) examines the discursive strategies and processes in media discourses that facilitate or impede democratic debate and citizenship in techno-environmental controversies in Belgium. The data for this study comes from 1385 articles on agricultural biotechnology from five Belgian newspapers published between

1998 and 2007. The paper applies “Carvalho’s (2007, 2008) innovative analytical framework of critical discourse analysis (CDA) as a qualified framework” (p. 279) to examine the underlying ideological conflicts in the debates on genetically modified agricultural produce. The analysis shows discursive strategies and practices of one ideological culture aiming at eliminating any space for ideological conflict (and consequently, democratic debate), while the discursive strategies and practices of the other are aimed at opening or safeguarding this space for democratic debate.

Maseele (2015b) also authored an essay on public discourse on risk controversies. He argues that storylines on climate change and genetically modified food are based on invalid assumptions pertaining to nature and science. He states that disagreements about the environment are ideological and reflects the presence of opposing values and interests, social identities, intellectual traditions, and interpretations on sustainable environment. He also highlights that the ideological differences results in adversarial democratic debates between social actors with irreconcilable political demands contributing to a struggle between what is right and wrong. Maseele’s (2015b) analytical framework is based on risk conflicts perspectives, and he evaluates mediated public discourse in terms of its contribution to democratic debate and citizenship, and democratic politics.

Another study on risk and technology by Tollenson (2013), uses CDA to analyse the discursive representation of the Fukushima nuclear disaster in *The Daily Yomiuri*, the largest daily newspaper in Japan. His study adopts van Dijk’s socio-cognitive framework of critical discourse analysis and Chilton’s approach on ‘legitimation’. The analysis reveals that Japanese national identity and the ideology of technoscience are reproduced through two discursive constructions: a diminished ‘risk’ from

Fukushima radiation and citizens' national duty in the nuclear crisis. Within these two constructions, 11 major techniques are identified by which *The Yomiuri* discursively mitigates the risks from Fukushima and calls Japanese national identity into the service of the nuclear industry.

In terms of health risk, Makoni (2012) takes a discourse perspective to investigate how language, ideology, and power are expressed in family planning pamphlets that were used in a Zimbabwean family planning campaign in the early to mid-1980s. Drawing from CDA, the study uses Systemic Functional Grammar and, Kress and van Leeuwen's multimodal discourse analysis as theoretical frameworks to establish how language interacts with visual images to convey meanings in the pamphlets. The findings in this study show that pregnancy prevention is discursively constructed in terms of both risk and surveillance and that women as contraceptive users are constructed "as an at-risk 'other' needing protection" (p. 419) and as subjects of powerlessness.

Similarly, Kwauk (2012) looks at the problem of obesity among Pacific Islanders and examines the discursive strategies used by three international health and fitness documents that guide policies and physical education-based intervention strategies in the Pacific Islands. The purpose of this research is to aid the international community to problematise and to govern the lifestyles of the islanders. The methodology for this study is influenced by Foucault's approach to the relationship between discourse, knowledge and power and the CDA methods used by Fairclough and Greene. The study discloses that the discourse strategies in the texts reinforce and naturalise the ideological stance towards the ideal size (not obese) and health (not obese) of the productive body ignoring local knowledge about health and locally informed perceptions of the body.

Marko's (2010) research also explores the discursive construction of lifestyle risks by examining the interaction of health, lifestyles and risks from a CDA perspective using corpus analytical tools. He uses his own version of CDA based on three levels of discourse namely form, meaning and socio-cultural significance and this perspective is a modified version of Fairclough's approach. The corpus is 16 self-help books that focus on cardiovascular diseases and the study examined frequency and lexical variation through keyword analysis and collocational patterns. The analysis reveals that there is problematically one-sided view of health and disease as exclusively a medical problem and as an individual responsibility.

Separately, a study by Rasmussen (2013) investigates "how dilemmas emerge as employees in safety-critical workplaces name, reproduce and negotiate particular occupational health and safety risks and protective measures" (p. 89). The research analyses 46 interviews that have been conducted on employees from three chemical factories by combining Foucault's theory of governmentality with a discursive psychology approach. The findings reveal that the behaviour-based safety training programme introduces a new generation of concepts which place risk responsibility on workers. At the same time, an older generation of behaviour-driven naming conventions still exist based on scientific discourse or popular discourse. The study also highlights the existence of a welfarist discourse of environmental health and design as a result of the development of welfare structures, and due to medicine and engineering knowledge, from the nineteenth and twentieth centuries. Finally, the findings infer that environmental health and design measures have also been particularly struck by a dilemma that had to do with negative cost-benefit calculation.

Linguistic studies have also been done in the other areas of environmental risk. For example, a study by Lorente and Alonso (2014) uses textual analysis to examine the discursive strategies involved in the treatment of environmental information published in four Spanish newspapers regarding the renewal of the Kyoto Protocol. Their research investigates the discourse on climate change with a view to reduce tensions and conflicts in the risk management of environmental issues. The findings infer that the discursive strategies used frame the natural phenomena to the public in the worst of the predicted scenarios. This indicates that the public requires expert technical rationality as they do not possess the knowledge to understand the natural phenomena.

Similarly, Hunka, Palmqvist, Thorbek, and Forbes (2013) have conducted a study on the obstacles facing ecological risk assessment professionals in presenting scientific information to the public in an understandable manner. This research uses the discourse analysis framework of Gee (2005) to examine the sociolinguistic aspects of the language and the major perspectives of three stakeholder groups namely the regulators, industry representatives, and academics in the European Union. The data comes from thirty interviews conducted on representatives from the three stakeholder groups. The research reveals that ecological risk assessment is highly specialised and as such the information is difficult to comprehend by the layperson. It also highlights that there is a flaw in the communication flow among stakeholders as they are not included in the communication process and that this poses a challenge to effective communication.

Another study by Smith and Kain (2010) applies narrative analysis to examine discourse on hurricane risk and emergency communication in a high-risk county on the United States of America's south eastern coast. The data comes from 76 face-to-face, semi-structured interviews with residents and by journalists. The researchers analyse

the narratives to understand how the respondents perceive weather-related danger and how they make judgements about it. The analysis highlights that the residents access information, filter its potential meaning for them personally, and make their own individual perceptions of risk according to direct personal experience or familiarity with the experience of others.

Relatedly, Buttney (2009) examines Wal-Mart representatives' oral presentation at a public hearing on their site plan and Draft Environmental Impact Statement. This public hearing is to address an ongoing contestation over Wal-mart's proposal to build a Super Center close to a commercial strip. He examines Wal-Mart representatives' efforts to mitigate risk and how these claims get strategically constructed through various practices. The data is a videotape of a public hearing. He uses discursive constructionism as the study's aim is to describe the practices Wal-mart's representatives' use as well as the social, or natural, realities that are constructed in the discourse. The findings reveal that the representatives present themselves mainly as both technical experts and trustworthy partners. The analysis also reveals three main strategies from the Wal-Mart presentation which are circumscribing the relevance of residents' comments to the Draft, Environmental Impact Statement, providing technological solutions to the residents' concerns, and wanting to develop a working relationship with the residents through communication.

Likewise, a study by Saint (2008) explores the discourses and discursive practices involving corporate environmental harms by drawing from the ideas of Michel Foucault. He examines how modernity and capitalism have encouraged environmental destruction and also how the media, lobby groups and governments publicise the discourses of corporate environmental harm. The research finds that there are a number

of different discourses of corporate environmental harm, but that these discourses work together in different ways to reproduce existing power relations.

Finally, a study by Hamilton, Adolphs, and Nerlich, (2007) uses corpus linguistics to look at the meaning of 'risk' from the perspective of a noun and a verb. Their motivation for this research has been to gather more empirical support for assertions in social science about the meaning of risk. Their findings suggest that 'risk' both as a noun and verb represents 'actions, agents or protagonists, and bad outcomes' (p. 178). Their findings infer that 'risk' has a negative connotation and that it is used more often as a noun than as a verb and that it appears in the context of health and illness.

2.3.2 Gap in the Analysis of Risk

The current linguistic studies on risk encompass a wide range of topics from management to lifestyle and environment risks. However, there is a gap in the analysis of risk from RF exposure from telecommunication structures firstly from a Malaysian perspective and secondly from a linguistic, specifically from a discourse analysis perspective. Besides in the intra-disciplinary linguistic fields, many kinds of risk have been studied from various qualitative approaches, from quantitative aspects using corpus linguistic and, from textual and narrative analysis but not from a social actors and social actions viewpoint as subscribed by van Leeuwen. CDA is an attitude towards research and I would argue that the use of CDA can help uncover certain patterns in the social practises of risk communication.

This study aims to fill the gap in linguistic studies as firstly, the way social actors and actions are represented and formed helps identify particular attitudes, ideologies and worldviews which are encoded through language. Van Leeuwen's sociosemantic

categories are helpful in analysing these cultural, social, and psychological aspects of the diverse social actors and social actions in a social practise (see Chapter 3 sub-sections 3.3.1 and 3.3.2 respectively). Secondly, to date no studies on risk have analysed the role of all the stakeholders involved in a particular risk which this study attempts to do. Hence, such intrinsic and comprehensive understanding of the all the stakeholders paves the way for formulating effective risk communication strategies

Further, Fairclough (2013, p. 18) states that CDA provides explanations of the causes and development of any contestation and can therefore help identify possible ways of mitigating its effects and coming up with a more socially just solution which is the intention of this study. In addition, Hampel (2006, p. 9) highlights that the scientific concept of risk like in the case of RF is only accepted within scientific communication because there are enormous differences in the understandings of risks between lay people and experts. He says risk communicators can reach their goal in communicating effectively if they appreciate the public' understanding of risk as this will help in building trust and mutual understanding. Hence, the critical discourse analysis of the social practices in the health debates on RF, in particular the representation of the all the stakeholders involved in this issue will offer a clearer picture of the complexities behind the contestations on RF exposure from telecommunication structures. This is because CDA serves as a conduit to examine the practices and customs in society, both to discover and describe how they work and also to provide critiques of those practices (see Bloor & Bloor, 2007, p. 2).

2.4 Summary

The chapter provides information on risk communication in general, risk communication specifically on RF, and provides an overview of current linguistics

studies on risk. It concludes by identifying the gap in linguistic studies that this research aims to fill.

The first part of this chapter provides definitions of risk communication from NRC and various experts in the field. The definitions highlight that risk communication is an interactive form of communication among involved stakeholders on a real or perceived risk. As such, a top-down flow of communication is no longer appropriate as the public or the beneficiaries are demanding to be included and heard in risk communication initiatives. This is due to loss of trust in agencies entrusted in the management of risk as they are perceived to have vested interest. Trust is therefore expressed to be a vital ingredient for effective risk communication because it helps in creating a bond among the stakeholders based on mutual respect and understanding. Trust aids in creating a congenial environment for formulating and implementing risk communication initiatives.

This chapter also examines literature on risk communication pertaining to RF exposure from telecommunication structures. There are five (5) major challenges that risk communicators face in this area of communication. Firstly, there is disagreement between the public and the telcos/authorities on the siting of base stations and telecommunication antennas because the public feel that they are not included in the decision making process. The public is also of the view that these structures are harmful to health and hence should not be located near sensitive areas like schools and residential buildings. Secondly, people are skeptical about the long term impact of RF exposure from these structures because this is a relatively new technology. This is exacerbated by the public's negative association to the word "radiation". Thirdly the conflicting views from the scientific community on the impact of RF has made the

public more cautious and to take a “better safe than sorry” attitude. Fourthly, the negative media reporting on RF exposure is considered to be another stumbling block to risk communication as the media is a powerful tool in shaping the public’s perception on RF. It is inferred that in a bid to increase circulation, the media amplifies the perception that environmental hazards like RF is harmful and this creates anxiety among the public. Finally, the public’s negative perception on RF is attributed to a lack of proper knowledge transfer. It is felt that the industry should be more proactive in educating the public but the challenge for risk communicators is to make scientific information simple for the public to grasp.

The second part of this chapter looks at the gap in risk communication studies. The literature indicates that risk communication does not just involve representation of different opinions. It also carries different communicative and informative intentions based on the stakeholders’ different interpretations of social, political, and psychological situations that linguistic studies, specifically CDA can help understand. As a result, there is an increase in linguistic studies on risk. The chapter then looks at some recent studies on risk and acknowledges that there is a dearth in linguistic studies on risk on RF exposure from telecommunication structures, specifically from a Malaysian perspective using van Leeuwen’s social actor and social action frameworks. In addition, no studies on risk have analysed the role of all stakeholders involved in a contestation which this study aims to do. Hence, with the use of CDA in this study certain patterns in the social practises of risk communication on RF exposure can be uncovered, and this aids in formulating effective risk communication strategies.

CHAPTER 3: THEORETICAL AND ANALYTICAL FRAMEWORKS, AND METHODOLOGY

3.1 Introduction

This chapter covers three main (3) sections which are the theoretical and the analytical frameworks, and the methodology that are used in this study. The theoretical and analytical frameworks, and the methodology are aligned with the objectives and research questions that guide this study. The overarching objective of this research is to investigate the ways in which social practices on health issues pertaining to RF exposure from telecommunication structures are discursively constructed among the social actors, particularly in terms of contestations and challenges, and how these impede effective risk communication. In line with the focus, the following are the research questions:

Research Question 1:

How are the social actors involved in the health debates on RF exposure from telecommunications structures represented by the various stakeholders?

Research Question 2:

How are the social actions involving the exposure to RF from telecommunications structures represented by the various stakeholders?

Research Question 3:

How can the analysis of social practices improve risk communication on RF exposure from telecommunications structures in Malaysia?

Section 3.2 and the subsequent sub-sections look at the theoretical framework which draws upon various critical theoretical concepts from Critical Discourse Analysis (CDA). Section 3.3 looks at the analytical frameworks used for Research Questions 1, 2

and 3. The thematic analysis for Research Questions 1 and 2 uses categories from van Leeuwen's (2008) Social Actor Network and Social Action Network frameworks respectively. Both these frameworks and a brief description of the selected categories used in the analysis are explained separately in sub-sections 3.3.1 (Social Actor Network) and 3.3.2 (Social Action Network). Sub-section 3.3.3 explains the analytical framework for Research Question 3 which is the adapted version of the Key Steps in Applying Effective Risk Communication. Section 3.4 explains the research methods. It describes the research design, the data and its collection and analysis procedure. Finally, a summary of this chapter is given in Section 3.5.

Figure 3.1 illustrates the theoretical and analytical frameworks used in this research. The theoretical framework that guides this study is based on various critical theoretical concepts in CDA. The thematic analysis for Research Question 1 and 2 uses categories from van Leeuwen's Social Actor Network and Social Action Network which are situated within CDA. The frameworks are the only comprehensive structures to examine how the social actors (Research Question 1) and social actions (Research Question 2) of social practices are represented in discourse. The findings from Research Questions 1 and 2 are then applied to the Adapted Key Steps in Applying Effective Risk Communication to formulate risk communication recommendations (Research Question 3).

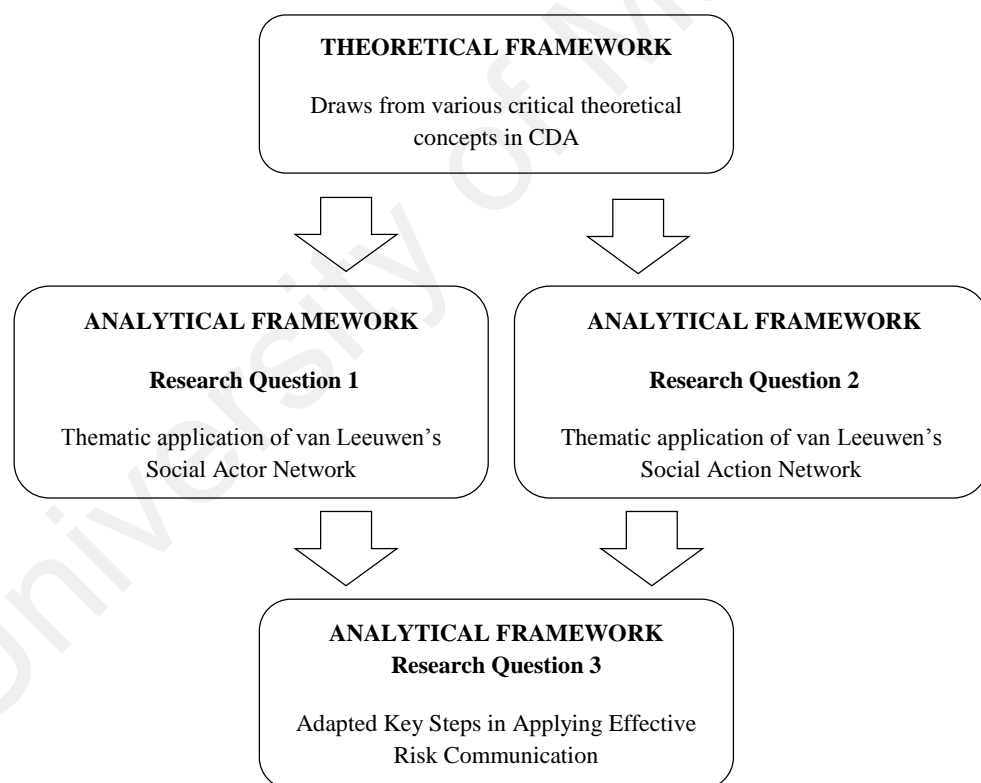


Figure 3.1: Theoretical and Analytical Frameworks Used in the Study

3.2 Theoretical Framework

The theoretical framework for this study draws from various critical theoretical concepts from CDA, and mainly from Fairclough's, van Dijk's, Wodak's and van Leeuwen's approaches to CDA. CDA is relevant to risk communication as Sarangi and Candlin (2003, p. 116) confirm that studies on risk communication require discourse analytical work to understand the meaning behind the discourse as well as the accountability and motives of the stakeholders and their role-relationships and ideologies. Thus, CDA is specifically meaningful in the present study as the motives of the stakeholders in risk communication are driven by social, political and economic intentions (Slovic, 1993; Slovic 1999, Slovic, 2000, Slovic et al., 2004). Additionally, the socially recognised contexts in which the discourse on RF takes place among the various stakeholders differ based on their different social roles, dissimilar social identities and varied levels of knowledge (see Markon et al., 2013; Covello, 2010; Renn, 2010; Heath & O'Hair, 2010). Within each stakeholder's discourse domain, there are certain recognised social practices and conventional genres (Bloor & Bloor, 2007, p.8) and CDA helps reveal these inconsistencies within and between discourses (Jager & Maier, 2009, p.36).

In risk communication, socially shared knowledge is needed to ensure mutual understanding and in its absence, there is communication breakdown (Heath & O'Hair, 2010; McComas, 2006). As such, each stakeholder group's different opinions about RF contribute to contestations which then lead to serious misunderstandings. Hence, CDA aids to examine and shed light on the controversy on RF emissions from telecommunication structures in Malaysia as the discourse from various stakeholders can be analysed to help reach a consensus on how "the situation could be improved" (Bloor & Bloor, 2007, p. 3).

Similarly, Fairclough (2014) adds that the essence of CDA is not solely the critique of discourse but the explanation of how discourse associates with other elements of the existing reality. He explains that this principle contributes positively to social science as it supports the aim of CDA to change and improve existing societies. He acknowledges that change and improvement can only take place with a good understanding of the problem, “including how discourse figures within them” (p. 5) because then there is basis for knowing whether a situation can be changed and in what ways, or how. This encapsulates the aim of this study which is to investigate the ways in which the social practices on health issues pertaining to RF exposure are discursively constructed among the stakeholders, particularly in terms of contestations and challenges.

An explanation of CDA, and its various approaches, its commonalities, and the concepts of CDA that are applied in this study are explained in sub-sections 3.2.1 and 3.2.2 respectively.

3.2.1 What is CDA?

Fairclough, et al., (2011, p. 357) attest that CDA is a well-established field in social sciences which is a “problem-oriented interdisciplinary research movement”, that incorporates a variety of approaches with different theoretical models, research methods and agenda. They also assert that these differences are united by a “shared interest in the semiotic dimensions of power, injustice, abuse, and political-economic or cultural change in society”. They add that CDA is unique in, firstly, its interpretation of the relationship between language and society, and secondly, its critical approach to methodology.

Similarly, Bloor and Bloor (2007) explain that CDA is interested “in the way language and discourse are used to achieve social change” (p. 2) and that it recognises the advantage that can come from a multi-disciplinary approach which can reveal such incidents. They elaborate that “CDA examines practices and customs in society both to discover and describe how they work and also provide critiques of those practices” and as such, they contend that CDA is used to “identify and study specific areas of injustice, danger, suffering, prejudice, and so on, even though the identification of such areas can be contentious” (p. 3). Consequently, Jaworski and Coupland (1999, p. 6) highlight that critical discourse analysts need to see themselves as being politically involved and working along with marginalised social groups.

Critical discourse analysts also share the same view with Halliday and critical linguistics that the “choices made by speakers (regarding vocabulary and grammar) are consciously or unconsciously principled and systematic, and that they are ideologically based” (Todolí, Labarta, & Dolón, 2006, p. 9-10). This suggests that our words are never neutral because they convey how we see ourselves based on our identity, knowledge, values and beliefs (Fiske, 1994). This is supported by Van Dijk (1998) who attests that discourse can be politicised without us being aware of it because the interests of those who speak are reflected in the communication. CDA hence is concerned with studying and analysing written and spoken texts to uncover the discursive sources of power, dominance, inequality and bias.

Therefore, it is believed that critical discourse analysts take an overt socio-political stance when examining an issue. Fairclough and Wodak (1997) state that “CDA sees itself not as a dispassionate and objective social science” (p. 258) but as an engaged and committed form of intervention in social practices and social relationships. Because of

this, CDA analysts' affirm that discourse always involves power and ideologies and hence their intention is to explore often opaque relationships between discursive practices, texts and events. So CDA is concerned with the ideological assumptions hidden in the structures of language in order to aid people to oppose and overcome various forms of power abuse both in discourse and over discourse. Fairclough (1995) condenses this definition of CDA as an:

... analysis which aims to systematically explore often opaque relationships of causality and determination between (a) discursive practices, events and texts, and (b) wider social and cultural structures, relations and processes; to investigate how such practices, events and texts arise out of and are ideologically shaped by relations of power and struggles over power; and to explore how the opacity of these relationships between discourse and society is itself a factor securing power and hegemony (p. 132-133).

Briefly, CDA aims at making transparent the influences between discourse practices, social practices, and social structures that might be opaque to the layperson. Critical analysts are concerned to uncover the ideological assumptions hidden in the structures of language to help people resist and overcome various forms of power abuse. CDA thus pays a specific interest in the relationship between language and power, and is used prominently in "gender issues, issues of racism, media discourses, political discourses, organisational discourses or dimensions of identity research" (Wodak & Meyer, 2009, p. 6).

However, Wodak and Meyer (2009,) explain that there are various approaches to CDA like dispositive analysis, sociocognitive approach, discourse-historical approach (DHA), social actors approach and dialectical-relational approach. But they clarify that CDA does not represent a definite empirical methodology but "rather a bulk of approaches with theoretical similarities" (p. 27).

Therefore, the concepts and principles in CDA that guide this research are explained in sub-section 3.2.2.

3.2.2 Concepts and Principles in CDA Used in this Study

Luke (1997) states that, the approaches in CDA are shaped by three broad theoretical orientations. He says that firstly, it draws from the poststructuralist view that discourse functions laterally across local situations of local institutions, and that texts have a constructive purpose in creating and shaping human identities and actions. Secondly, he reveals that CDA draws from Bourdieu's sociological assumption that actual textual practices and interactions with texts symbolise cultural capital that exchanges value in particular social fields. Finally, he adds that CDA draws from the Neo Marxist cultural theory the belief that discourses are produced and used within political economies and therefore they produce and convey broader ideological interests, social structures and movements within those fields.

Fairclough, van Dijk, Wodak, and van Leeuwen play an important role in shaping CDA as their frameworks are “best established” and used as guidelines in most CDA studies (Waugh, Catalano, Al Masaeed, Do, & Renigar, 2016, p. 75). As such, the theoretical framework for the current study draws largely from their approaches to CDA. The common idea in their approaches is to adopt critical goals when investigating verbal interactions so as to ascertain how discourse shapes and is shaped by social structures. They advocate that this can be done “by revisiting the text at different levels, raising questions about it, imagining how it could be constructed differently, and then mentally comparing it to related texts” (Todoli et al., 2006, p. 11). They also stress on the applicability of the findings to address social issues.

There are many commonalities in the various approaches to CDA. Van Dijk and Wodak state that there are at least seven common elements which are:

- i. an interest in '*naturally occurring*' language use by real language users;
- ii. a look at new basic units of analysis like texts, discourses, conversations, speech acts, or communicative events rather than focus on *larger units of isolated words and sentences*;
- iii. a slant towards the study of action and interaction and therefore CDA looks *beyond sentence grammar*;
- iv. an expansion towards *non-verbal (semiotic, multimodal and visual)* features of interaction and communication which include gestures, images, film, the internet, and multimedia;
- v. an emphasis on dynamic (socio)-cognitive or interactional moves and strategies;
- vi. an investigation of the functions of (social, cultural, situative and cognitive) *contexts of language use*;
- vii. an examination of a great number of *phenomena of text grammar and language use* like coherence, anaphora, topics, macrostructures, speech acts, interactions, turn-taking, signs, politeness, argumentation, rhetoric, mental models and many other aspects of text and discourse.

(cited in Wodak & Meyer, 2009, p. 2)

However, Wodak and Meyer (2009) highlight that despite these commonalities, the CDA "research program" varies considerably according to scientific methodology, theoretical influence, and "ability to 'translate' their theoretical claims into instruments and methods of analysis" (p. 23). They state that:

CDA is therefore not interested in investigating a linguistic unit per se but in studying social phenomena which are necessarily complex and thus require a multi-disciplinary and multi-methodical approach (p. 2).

Furthermore, Wodak and Meyer (2009) add that critical in CDA does not necessarily relate to negativity but it is a critical investigation of a social phenomenon that does not inevitably have to be taken for granted but can be challenged and rectified if necessary. Likewise, Fairclough (2014) states that the essence of CDA is not solely the critique of discourse but the explanation of how discourse associates with other elements of the existing reality. He suggests that in this way CDA can contribute positively to social science as this supports the aim of CDA to change and improve existing societies. He acknowledges that change and improvement can only take place with a good understanding of the problem, “including how discourses figures within them” (p. 5) because then there is a basis for knowing whether a situation can be changed and in what ways, or how.

Fairclough and Wodak (1997) summarise the main tenets of CDA as follows:

- i. CDA addresses social problems
- ii. Power relations are discursive
- iii. Discourse constitutes society and culture
- iv. Discourse does ideological work
- v. Discourse is historical
- vi. The link between text and society is mediated
- vii. Discourse analysis is interpretative and explanatory
- viii. Discourse is a form of social action.

These principles highlight some of the common concepts in CDA which are discourse, representation, ideology, power, and social practise. These concepts are relevant in this study as the key objective of the study is to investigate the ways in which social practices regarding RF exposure and its impact on health are discursively

constructed among the social actors, particularly in terms of contestations and challenges and how these impede effective risk communication. As such, the concepts are explained in sub-sections 3.2.2.1 to 3.2.2.5.

3.2.2.1 Discourse

Fairclough and Wodak (1997) define discourse in CDA as a language use in speech and writing and as a form of social practice. They say that describing discourse as social practice implies a dialectical relationship between a particular discursive event and the situation(s), institution(s) and social structure(s), which frame it. Hence the discursive event is shaped by them, but it also shapes them. This they say is because discourse is socially constitute as well as socially conditioned as it constitutes situations, objects of knowledge, and social identities of and relationships between people and groups of people. They add that because discourse is constitutive it helps to sustain and reproduce the social status quo, and it contributes to transforming it. Consequently, since discourse is so socially consequential:

...it gives rise to important issues of power. Discursive practices may have major ideological effects – that is, they can help produce and reproduce unequal power relations between (for instance) social classes, women, and men, and ethnic/cultural majorities and minorities through the ways in which they represent things and position people (p. 258).

Therefore, Fairclough and Wodak (1997) say that language is regarded as both socially constituted and constituting as “any part of any language text, spoken or written, is simultaneously constituting representations, relations and identity” (p. 275). This is in line with the objective of CDA which is to perceive language as a social practice and to prove that language does not function in isolation but is influenced by cultural, social, and psychological frameworks. Fairclough and Wodak (1997) also state that discourses “are partly realised in ways of using language, but partly in other ways”

(p. 261), for instance, through visual semiosis. They add that discourse is one kind of concrete realisation of abstract form of knowledge as well as it is interactive and influenced by sociolinguistic factors.

Fairclough and Wodak (1997) explain that when individuals are in the process of constructing themselves in society, they internalise discourses that encompass the core of a community of practice. As a result, discourses control and organise what can be talked about, how it can be talked about and by whom. Therefore, social practices are meaningful and coherent because they conform to discourse norms. Discourses are also manifestations of ideologies and are hence said to shape individual and collective consciousness and these consciousness influence people's actions (see Fairclough, 2013, p. 59). Jäger and Maier (2009) also acknowledge that discourse solidifies knowledge through the repetition of ideas and statements and in this way reflects, shapes and enables social reality.

Fairclough (2009) chooses to see discourse as “semiotic ways” of construing aspects of the world (physical, social or mental) which can generally be identified with different positions or perspectives of different groups of social actors” (p. 164). He sees discourse as a complex of three elements: social practice, discursive practice (text production, distribution and consumption) and text (2013, p. 59). He says that discourse is part of the social process (part of social life) which is related to other parts (2014, p. 6). He also highlights that discourses which originate in some particular field or institution may be recontextualised in other fields or institutions. Hence, he explains that discourses can be appropriated or colonised, and put into practice by enacting (new ways of (inter)acting), inculcating (new ways of being e.g. identities) or they can be physically materialised (seen) (2009a, p. 165).

Wodak and Meyer (2009, p. 27) clarify that Fairclough focuses on the semiotic reflection of social conflict in discourses and this explains his interest in social processes namely, social structures, practices and events. According to Fairclough (2009) a CDA analysts is supposed to look at a social problem with a potential semiotic dimension. This dimension requires the problem to be analysed based on its styles or semiotic ways of being, genres or semiotic ways of acting and interacting and discourses or semiotic ways of interpreting the world. Once the differences between styles, genres and discourses are identified the analyst is then required to study the processes by which these established dominant styles, genres and discourses is resisted. When this is established, he says the focus should shift to the structural analysis of the context, and the analysis of agents, tense, transitivity, modality, visual images or body language.

Furthermore, Wodak and Weiss (2003) state that the semiotic dimension of events can highlight the traces of differing discourses and ideologies. This is in line with Foucault's (2002, p. 54) view that discourses are "practices that systematically form the objects of which they speak". Van Leeuwen (2009, 144) supports Foucault's view and adds that discourse involves social cognitions "that serve the interests of particular historical and/or social contexts", represent social practices in text, and transform or recontextualises them. Van Dijk (1997) assigns significance to this notion of discourse.

Van Dijk (1997) suggests that there are linguistic, cognitive and socio-cultural dimensions in discourse. He explains that firstly discourse is expressed at the syntactic, semantic, stylistic and rhetorical levels. He adds that secondly discourse has to be understood in the same footing as the speaker's processes of production, reception and understanding. Finally, van Dijk highlights the social dimension of discourse which he

sees as a sequence of contextualised, controlled and purposeful acts taking place in society like a form of social action taking place in a context e.g. in a physical setting or temporal space with participants. Van Dijk asserts that each context controls a particular type of discourse and each discourse depends on a particular type of context. This is because he believes that context is mostly cognition and therefore, it has to do with our knowledge of social situations and institutions, and of how to use language in such situations and institutions.

Gee (1999) explains the diversity in the definition of discourse lucidly with the small-d-discourse and big-D-discourse. He states that small-d-discourse refers to actual language (text and talk) while the big-D-discourse denotes “the knowledge that is produced and circulating in talk; to the general ways of viewing, and behaving in the world; to the systems of thoughts, assumptions and talk patterns that dominate a particular area; and to the beliefs and actions that make up social practices” (Tenorio, 2011, p. 185). The analysis of discourse in this study includes the definition of both the small-d-discourse and big-D-discourse.

On the other hand, Wodak and Meyer (2009, p. 6) relate this diversity in the meaning of discourse to three different trends: The German and Central European tradition, in which a distinction is made between text and discourse, and the term discourse draws on text linguistics; the Anglo-American tradition, in which the term discourse is used for both written and oral texts; and finally the Foucauldian tradition, in which discourse is signified as an abstract form of knowledge which is understood as both cognition and emotions (see Jäger and Maier 2009).

Bloor and Bloor (2007) have condensed the definition of discourse as follows:

- i. discourse in its broadest sense refers to the whole communicative event;
- ii. discourse indicates spoken (speech, talk and conversation) interaction only but nowadays discourse also includes written discourse. Distinction can be made by specifying if it is *spoken discourse* or *written discourse*;
- iii. discourse is human interaction through any means, verbal and non-verbal and “involves matters like context, background, information or knowledge shared between a speaker and a hearer”;
- iv. discourse refers to the “general communication that takes place in specific institutional contexts” such as the discourse of law or medicine;
- v. discourse is a sample of language usage, generally written to be spoken, like a lecture, sermon or speech;
- vi. multi-modal discourse looks at discourse that depends on more than one mode of communication e.g. words, drawings and photographs in a magazine.

(p. 6-7)

As such, the concept of discourse as spelt out in CDA is a prerequisite in being critical in revealing the reasons behind the stakeholders’ different views and agendas on the health debates on RF exposure. Therefore, examining the discourse of the various stakeholders on RF exposure gives greater clarity on dynamics in the representation of the social actors and the social actions in the health debates on RF.

3.2.2.2 Representation

Various ways are used and proposed within the general framework of CDA to analyse representations in discourse. However, the analysis of representation depends firstly, on the research topic, that is if it requires political, sociological, cognitive or

discoursal aspects of analysis, and secondly, on the choice of conceptual, theoretical and analytical frameworks (Wodak & Meyer, 2009). KhrosraviNik (2010) states that the analysis of “representations of social groups and discursive demarcation of ‘Us vs. Them’ (p. 55) or ‘In’ and ‘Out’ groups or ‘Self’ and ‘Other’ makes up the bulk of research in CDA and centres on religion, race, ethnicity, social class, language/dialect, gender, nationality and sexual orientation. Van Dijk’s and Wodak’s numerous studies in CDA are focussed on topics relating to ‘Self’ and ‘Other’ representation in discourse.

Van Dijk's (2009) approach tries to incorporate insights from cognitive psychology in his representation. He looks at the beliefs or social representations people share with others of their group and community. He also believes that “knowledge, attitudes, values, norms and ideologies are different types of social representations” (p. 78). He adds that group members use socially shared representations “as a resource to talk about (members) of other groups” (p. 78) and that ‘out-group’ derogation and ‘in-group’ celebration are the outcome of social-psychological strategies. Van Dijk (2009) highlights that representation in discourse concerns “how real language users go about producing and understanding discourse, how their personal and socially shared beliefs affect discourse production and how these are in turn affected by discourse” (p. 79). He believes that the representations of self and other are organised by a general schema with the following basic categories:

- membership devices (who belongs to us?)
- typical acts (what do we do?)
- aims (why do we do it?)
- relations with other (opponent) groups
- resources, including access to public discourse.

Wodak and Meyer (2009, p 25) state that van Dijk believes that CDA should be based on a sound theory of context within which the theory of social representations play a major role. This is because van Dijk (2009) credits that “social actors involved in discourse do not use their individual experiences and strategies, they rely upon collective frames of perceptions i.e. social representation” (p.25). Hence, social representations are shared among members of a social group based on firstly knowledge from personal, group or cultural factors, secondly on attitudes and finally on ideologies.

For van Dijk (2009) cognition mediates between society and discourse and he sees it as mental representations and processes of group members, their socially shared attitudes that indirectly influence the personal cognition of group members in their comprehension of discourse and interactions. This mental representation makes explicit the contrastive dimension of ‘Us’ versus ‘Them’ that has been central to most of van Dijk's research and writings. Van Dijk (1995) states that mental representations "are often articulated along Us versus Them dimensions, in which speakers of one group will generally tend to present themselves or their own group in positive terms, and other groups in negative terms" (p. 22).

Reisigl and Wodak (2009) on the other hand highlight that representation in DHA is 'heuristically' oriented towards engaging in finding answers to five questions: “How are persons, objects, phenomena/events, processes and actions named and referred to linguistically?; What characteristics, qualities and features are attributed to social actors, objects, phenomena/events and processes?; What arguments are employed in the discourse in question?; From what perspective are these nominations, attributions and arguments expressed?; Are the respective utterances overtly articulate?; Are they intensified or mitigated?” (p. 93). They state that in this way DHA accounts for the

'discursive strategies' through which certain perspectives are understood and represented. DHA sees 'intensification and mitigation' as a common strategy to topicalise and de-topicalise a certain representation. Likewise, intensification and mitigation are said to influence and perspectivise all levels of analysis from referential to argumentative strategies in positive self-presentation and negative other representation.

Van Leeuwen's (1996) representation in discourse applies to the *sociosemantic* aspects over linguistic realisation. He asserts that the meanings exist in the society and that language functions as a tool in carrying the meanings while redefining them. As such, he believes that the analysis should start from social encapsulations like foregrounding/backgrounding, and then be related to linguistic micro-mechanisms which may be utilised in comprehending such meanings. He states that such an approach "brings together what linguists tend to keep separate; it involves a number of distinct lexico-grammatical and discourse-level linguistic systems, transitivity, reference, and nominal groups, rhetorical figures, and so on, because all these systems are involved in realisation of representations of social actors" (p. 67).

Van Leeuwen (2008, p. 6) states that discourses represent social practices in text. He adds that discourses "not only represent what is going on" but "they also evaluate it, ascribe purposes to it, justifies it, and so on". As such, these aspects of representation are incorporated in his *sociosemantic* inventory of his social actors and social actions frameworks (see sub-sections 3.3.1 and 3.3.2). Van Leeuwen's representations of social actors and actions just like van Dijk's and Wodak's approaches reveal specific attitudes, ideologies and worldviews which are encoded through language.

Van Leeuwen is in agreement with Fairclough, van Dijk, and Wodak on the impact of society on the order of discourse and the effects of the discourse in the construction, transformation or maintenance of the social power and society. But he has taken a somewhat different approach in analysing the text by utilising a socio-semantic approach in which social actors can be represented. Therefore, his representation of social actors and social actions focuses on the sociological categories of discourse rather than on linguistic categories.

Hence, social representation hinges on common knowledge, beliefs, ideologies, norms or values shared by a group of people (see van Dijk 2009, p. 251; Wodak & Meyer, 2009, p. 26). Essentially, social representation is important as “identity is realised in discourse because people tend to identify themselves with their own social groupings (self) and often place themselves in opposition to other social groupings (other)” (Bloor & Bloor, 2007, p. 20). Van Leeuwen (2008) also discloses that representation “plays a significant part in the work of many critical linguists” (p. 32) as it helps in exposing who is represented as an “agent” or “patient” in a given action in either an active or passive role. Therefore, representation as ascribed in CDA is pertinent in identifying the roles the various stakeholders play in this controversy on RF exposure and how they represent themselves and their actions in this conflict.

3.2.2.3 Ideology

Ideology is described “as a set of beliefs or attitudes shared by members of a particular social group” (Bloor & Bloor, 2007, p. 10). Bloor and Bloor maintain that ideology is important in CDA as discourse used by members of a group have a tendency to be ideologically based. They also add that ideology can be so deeply ingrained in us that it is taken for granted as common sense. Fairclough (2013) adds that naturalised

ideologies do not make people aware of it or how they are subjected by or to such ideological assumptions. He explains that “ideologies are a significant element of processes through which relations of power are established, maintained, enacted and transformed” (p. 26). He also highlights that ideology is most effective when its workings are least visible. Fairclough (2009) explains that “if one becomes aware that a particular aspect of common sense is sustaining power inequalities at one’s own expense, it ceases to be common sense, and may cease to have the capacity to sustain power inequalities” (p. 71).

Similarly, van Dijk (1998) claims that ideology is a “self-serving schema for the representation of Us and Them as social groups” (p. 69). He maintains that ideologies are often articulated on basis of the “ideological square” and he uses it to explain the presence of inequality in the society by polarising ‘in-groups’ and ‘out-groups’ through a double process of emphasis and mitigation. Van Dijk, (2006) maintains that ideological discourses categorically present the ‘Self’ and the ‘Other’ in a way “that our good things are emphasised and our bad things deemphasised, and the opposite for the Others – whose bad things will be enhanced, and whose good things will be mitigated, hidden or forgotten” (p. 126).

Group beliefs are characteristically ideological as they are controlled and organised by underlying ideologies (see van Dijk, 2006). Therefore, the context and event models of their members are controlled when they speak as group members and as a result the discourse structure is biased. Van Dijk (2006) says that “ideological group beliefs take different forms, depending on their social functions. Some beliefs may be expressed in order to influence social policy or promote a cause” (p. 123) while other beliefs may

centre on the norms and values of everyday practices of group members like professional groups e.g. scholarly researchers or medical practitioners.

Reisigl and Wodak (2009) corroborate that ideology for the DHA, is seen as “an (often) one-sided perspective or world view composed of related mental representations, convictions, opinions, attitudes and evaluations, which is shared by members of a specific social group” (p. 88). Just like Fairclough (2009), they too stress that ideology is used to establish and maintain unequal power relations through discourse. They cite that discourse tainted with ideology can “establish hegemonic identity narratives” or control “the access to specific discourse or public spheres” by taking the role of a gate-keeper (p. 88). They add that dominant ideologies appear as ‘neutral’ as it holds on to the assumption that it is more hidden and latent and therefore can stay largely uncontested (p. 8) .

According to Danaher, Schirato & Web (2000, p. xii), “ideology refers to a system of ideas held by a particular group within a culture and which represents their interests, and the practices whereby such groups attempt to naturalise their ideas, meaning and values, or pass them off as universal and common sense”. In line with this, van Dijk (1993, p. 250) acknowledges that language use is not neutral but invested and that discourses are made to appear common sense and apolitical in order to instil certain ideologies. Van Dijk (2009) perceives discourse as ideologies that are typically, though not exclusively, expressed and reproduced in discourse and communication, including non-verbal semiotic messages, such as pictures, photographs and movies. The inference is that meanings are motivated and are always embedded with social, historical, political and ideological contexts.

Hence, CDA helps to uncover ideological roots of the various stakeholders' arguments on RF exposure and its impact on health. The analysis of ideology in this study will be discussed concurrently with the linguistic analysis as it appears as common sense and apolitical in discourse.

3.2.2.4 Power

Power is another central concept in CDA as it uncovers the existence of inequalities. Wodak and Meyer (2009) attest that CDA analysts are interested in the way “discourse (re)produces domination” because it can expose power abuse of one group over another and reveal how dominated groups “may discursively resist such abuse” (p. 9). Therefore, texts are regarded as sites of struggle as it shows “traces of differing discourses and ideologies contending and struggling for dominance” (p. 10).

Similarly, Fairclough (2014) emphasises that there is “power behind discourse rather than just the power in discourse” (p. 2) inferring that people with power can shape discourse and social order, and control specific interactions as well. He highlights that power corresponds with ideology and that it plays more than a persuasive and manipulative role in discourse. He also cites that power can reflect social and class struggles in discourse and therefore CDA analysts can raise the public's consciousness that language influences the domination of some people by others. He believes that this awareness will pave the way for social emancipation. Therefore, he stresses that CDA should “pursue emancipatory objectives” and highlight the problems faced by the oppressed “within particular forms of social life” (Wodak & Meyer, 2009, p. 27).

Van Dijk (1993) says that power can be exercised through action and cognition such as a powerful group limiting the freedom of action of others and also influencing their

minds. He explains that therefore “power and dominance are usually organised and institutionalised” (p. 254) and as such social dominance of groups is not only enacted, individually, by its group members but that it may also be supported by “other group members, sanctioned by the courts, legitimated by laws, enforced by the police, and ideologically sustained and reproduced by the media or textbooks” (p. 254 - 255). He highlights that social, political and cultural organisation of dominance signifies a hierarchy of power as selected or specific members of dominant groups and organisations play an elite role “in planning, decision-making and control over the relations and processes of the enactment of power” (p. 255). Van Dijk (2001, p. 363) also attests that power and dominance are connected with specific social domains like politics, media, law, education, science, etc. and their professional elites, institutions, rules and routines associated with these domains. He reveals that the victims or targets of such power are usually the public or citizens at large, or any other groups that are dependent on these institutions or organisations.

Both Fairclough’s and van Dijk’s approaches to CDA aim to analyse and contribute to the understanding and the solutions of serious social problems that are caused by social power abuse that results in social equality. Van Dijk (2009) adds that his socio-cognitive discourse analysis approach is conducted “with a normative perspective, defined in terms of international human rights, that allows a critical assessment of abusive, discursive practices as well as guidelines, for practical intervention and resistance against illegitimate domination” (p. 64). This assessment of discursive practices is also encouraged in Fairclough’s dialectical-relational approach as the analysis of discursive practices reveals the interests, the expertise and the resistance of the groups who are victims of discursive injustice. Similarly, Wodak and Ludwig (1999) add that discourse “always involves power and ideologies” and that “no interaction

exists where power relations do not prevail and where values and norms do not have a relevant role" (p. 13).

Foucault looks at power at a micro level and believes that power does not belong to important individuals or institutions but instead power is "a set of forces which establishes positions and ways of behaving that influence people in their everyday lives" (cited in Danaher, Schirato & Web, 2000, p. 48). Power is exercised with intention, not necessarily individual attention and can therefore be encoded in discourse to influence a point of view. So, this concept from CDA helps in ascertaining how power embedded in the stakeholders' discourse is used to influence and gain support in the discussion on RF exposure and its impact on health.

3.2.2.5 Social practice

Social practices are "socially regulated ways of doing things" but these practices may be regulated differently through strict prescription, traditions, influence of experts/opinion leaders, constraints of technological resources etc. (van Leeuwen 2008, p. 6-7). Similarly Fairclough and Wodak (1997) express that CDA sees language as a social practice and that the context of language use is crucial. Van Leeuwen (2008) clarifies that different social practices have dissimilar degrees of freedom, boundaries for resistance and methods of imposing conformity and he explains this in his model of social practice (p. 7 -12). The ten elements in his model are:

- i. Participants: The participants or social actors are integral in a social practice as they play different roles as either instigator, agent, affected or beneficiary. They can be explicitly mentioned in the text or be excluded through recontextualisation. The participants can be quoted explicitly in the discourse or

seen through context. Social actor and the Social Actor Network framework are described in detail in sub-section 3.3.1.

- ii. **Actions:** This is the core of any social practice and it is performed in a sequence. The sequence is not fixed and therefore the actions can be performed in a greater or lesser degree and as such the number of actions in a sequence can vary. The actions can be looked through social context as there are different amounts of freedom based on rules, strategies and institutionalised control. Sub-section 3.3.2 looks at social action and the Social Action Network framework in detail.
- iii. **Performance modes:** This refers to the pace of performance of the action in a social practice. Van Leeuwen (2008) says that this is akin to “stage directions” (p. 10).
- iv. **Eligibility conditions (participants):** This concerns the “qualifications” the participants should have to make them eligible to play a specific role in a particular social practice (p.10).
- v. **Presentation styles:** This involves the dress and body grooming requirements, or presentation styles of the participants (p. 10).
- vi. **Times:** This looks at more or less the definite times involved in a social practice. Van Leeuwen adds that social practices are not free of time constraints but instead it varies in terms of strictness (p. 11).
- vii. **Locations:** Social practices differ based on locations e.g. there is a contract in the social practices in a classroom and a playground (p. 11).
- viii. **Eligibility conditions (locations):** Similar to the eligibility conditions of participants, the eligibility conditions of locations look at the “preparatory practices” of interior decoration, suitability of location of buildings, base stations etc (p.11).

- ix. Resources (tools and materials): This refers to the resources needed to perform a social practice or part of it e.g. appropriate sources of information to create awareness on RF (p. 12).
- x. Eligibility conditions (resources): This looks at the eligibility conditions of the resources (tools and materials) e.g. compliance to safety standards, appropriateness of information materials to aid comprehension (p. 12).

Social practice is imperative in this study as it enables to discover and describe the practices and customs of each stakeholder groups that impacts the discourse on RF and gives an avenue to critique these practices. This is useful in identifying any ambiguities in the current practices and in recommending ways to rectify this gap.

3.3 Analytical Frameworks

This study uses thematic analysis for Research Questions 1 and 2 by incorporating categories from van Leeuwen's (2008) Social Actors Network and Social Actions Network frameworks. These two frameworks are the only comprehensive frameworks in CDA studies that examine how the social actors and social actions of social practices are represented in discourse from a social standpoint. The two frameworks employ a sociosemantic inventory in a systematic way which allows the choices made within the discourse to be categorised through sociosemantic meaning rather than lexiogrammatical logic. Van Leeuwen's analytical frameworks are based on two notions, firstly the lack of bi-uniqueness of language and secondly that meaning is culturally based. According to him, the former can be seen in the way agency as a sociological concept that is important in CDA is analysed contextually as agents or patients. He highlights that sociological agency is not only realised by linguistic agency or by the grammatical role of 'agent' but that it can also be represented by many other

ways for example by prepositional phrases like “from” and possessive pronouns like “our” in which the grammatical agent can be sociologically represented as the “patient”.

Van Leeuwen (2008) hence emphasises that there is “no neat fit between sociological and linguistic categories” (p. 24). Therefore, he is against being too closely guided by specific linguistic operations or categories so as to avoid missing relevant instances of agency. He believes that meaning is interconnected to culture rather than language and as such cannot be associated with any precise semiotics. He states that the categories in his framework enable the cultural, social, and psychological practice as socially ascribed to the diverse social actors and social actions to be included in the analysis and be investigated.

However, KhosraviNik (2010) states that van Leeuwen’s sociosemantic approach tones down the function of language and communication in constructing social “meanings” as it is assumed that these meanings pre-exist as independent entities which flow into language. He suggests that relying solely on van Leeuwen’s sociosemantic categories results in oversimplifying the various levels of interactivity present in discourse and society and condenses the analysis to morpho-syntactic or intra-textual levels. However, he concedes that van Leeuwen has proposed a practical sociosemantic framework “which can take on linguistic facades through various linguistic mechanisms” (p. 58). For these reasons, I have included linguistic categories of analysis namely, pronouns, modal verbs, adverbs, adjectives and conjunctions where applicable in the analysis.

Fairclough (1989) asserts that the use of pronouns is valuable in illuminating implied relationships between social actors. So pronouns are integral in the construction of

identity and the way the stakeholders see themselves in relation to others and to society at large. The use of modal verbs like ‘might’, ‘should’, ‘will’, project a certain authorial voice and attitude and can facilitate manipulation when constructing social relations (Fairclough, 1992). In addition, Reisigl & Wodak (2009, p. 94) corroborate that pronouns, modal verbs, adverbs, adjectives and conjunctive phrases are important devices in describing social actors and social actions either positively or negatively. Therefore, van Leeuwen’s sociosemantic categories complemented with the selected linguistic categories give lucidity to the analysis of social actors (Research Question 1) and social actions (Research Question 2) in this study on the contestation of RF’s impact on health.

In addition, when analysing I switched back and forth “between critical textual, topics and macro-structural analyses” to establish “how (micro) linguistic mechanisms at the textual analysis feed into (or fit into) a prejudiced macro-structure” (KhosraviNik, 2010, p. 62). This is in line with Wodak and Meyer’s (2009, p. 31) recommendation to go back and forth between these levels to minimise the risk of being biased and to give a better perspective of the representation of the social actors and social actions.

The Social Actor Network and the Social Action Network frameworks are further explained in sub-sections 3.3.1 and 3.3.2 respectively.

The analytical framework for Research Question 3 is my adapted version of Kemp’s (2009) Key Steps in Applying Effective Risk Communication framework. The initial framework by Kemp is specially designed as an advisory guideline for the telecommunication industry. It provides practical guidance and support on good risk communication practice for the telecommunication industry, especially those who are

facing public concerns about RF. Kemp adds that though his framework provides practical guidance and support it does not address social or other issues. This ties in with the use of the CDA as its theoretical concepts and van Leeuwen's sociosemantic categories in the Social Actor and Social Action analytical frameworks fills the gap in highlighting how the various social actors and their social actions are represented in the health debates on RF. Therefore, the findings from Research Questions 1 and 2 give a deeper understanding of the social actors and the social actions. Hence applying these findings on my adapted framework for risk communication provides a better assessment of what possibly could be done to improve risk communication among stakeholders to reduce conflicts and contestations.

Kemp (2009) attests that the communication principles in the framework can be applied for effective risk communication. He explains that his framework aims to improve understanding in four (4) ways: firstly on why and how the public perceive RF, secondly the effective ways of addressing perceived risk of RF which is the who, what, when and how of risk communication, thirdly the 'Golden Rules' of risk communication and finally the options for responding to RF's perceived risks (see Kemp, 2009, p. 1)

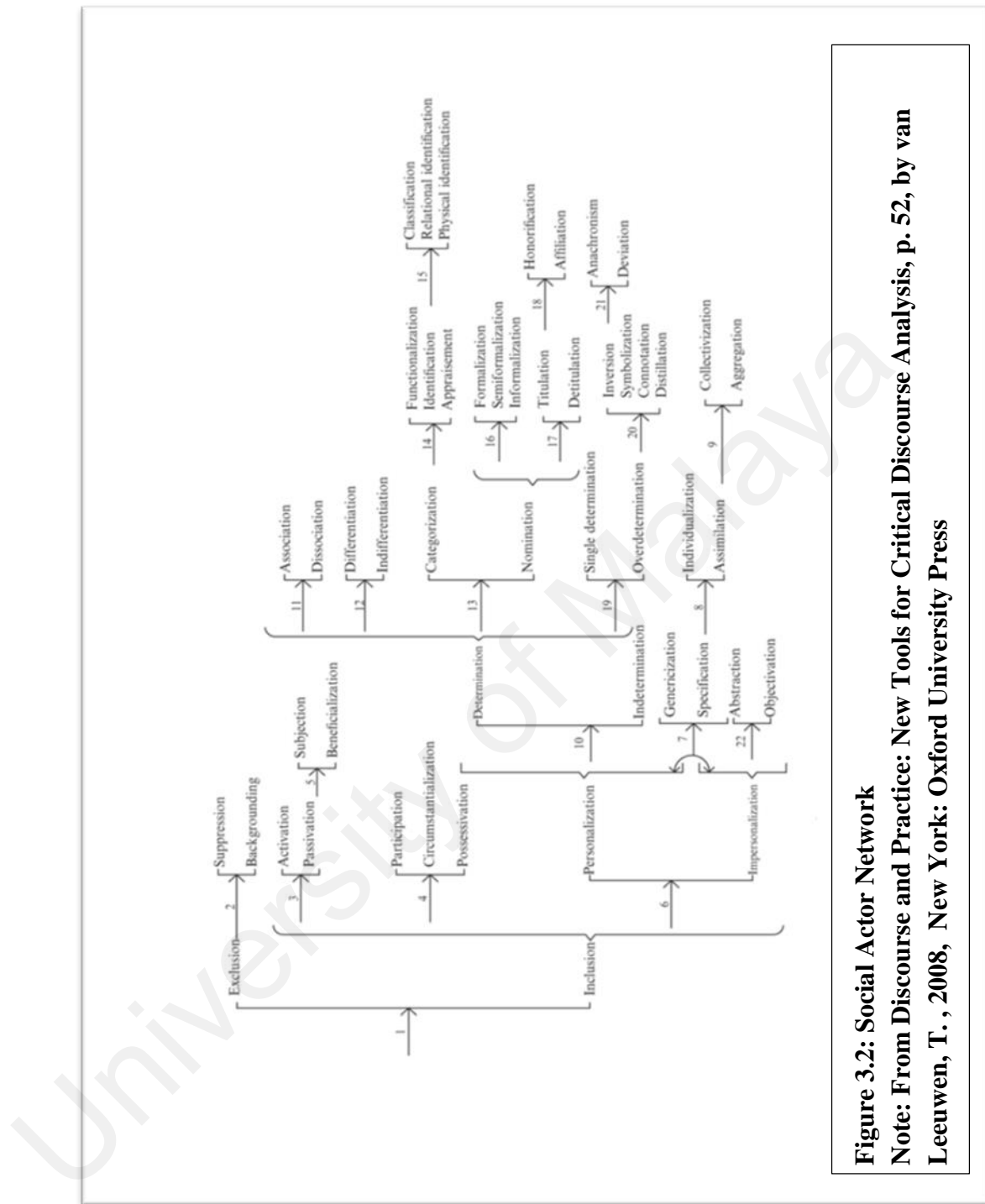
My modified version of this framework which is an extension of Kemp's (2009) framework is relevant to this study as firstly Kemp designed it specifically to address the controversy surrounding the health impact of RF exposure from telecommunication structures. Secondly, my modified version of this framework improves the communication flow with the addition of two (2) added steps. The last step in my improved version of the framework has also been renamed. The modified framework, its changes, and its application in this study are further explained in sub-section 3.3.3.

3.3.1 Analytical Framework Research Question 1: Social Actor Network

Categories from van Leeuwen's (2008) Social Actors Network are used to investigate Research Question 1. Social actors are people within specific domains who engage in a social practice (Bloor & Bloor, 2007, p. 8). In contrast, van Leeuwen (1996, p. 32) explains that social actors can be non-human entities that are represented as engaged in particular actions. The social actors in this study are individuals, groups and institutions who are specifically the various stakeholders involved in the controversy on the impact of RF's emission from telecommunication structures on public health. The stakeholders are government agencies which include MCMC, MOH and the local government, telcos, residents, politicians, activists, the media and experts. These social actors are connected by each other's decisions and therefore, selected categories from this framework is used to analyse the ways in which the social actors represent themselves and the others in the health debates on RF from telecommunications base stations and rooftop telecommunication antennas.

The analysis of social actors in Chapter 4 looks at the discourse of each stakeholder group on the health debates on RF exposure and the types of roles they portray through their discourse. Van Leeuwen (2008, p.7) highlights that social actors through discourse can be an instigator of action, an agent of action, a beneficiary of action or one affected by action.

Figure 3.2 illustrates the Social Actor Network framework. There are fifty (50) categories in this framework but only twelve (12) selected categories are used in the analysis.



A pilot test was conducted on a sample each from the seven stakeholder groups (see sub-section 3.4.2). The preliminary analysis of the data revealed that the most salient and frequent categories that social actors are represented through are activation, passivation, participation, circumstantialisation, possessivation, genericisation, specification, differentiation, indifferenciation, functionalisation, identification and appraisalment. Therefore, these categories are chosen for analysis as the classifications are predominant in the data. Figure 3.3: Social Actor Categories Used in the Study, shows the selected categories from van Leeuwen's Social Actor Network framework:

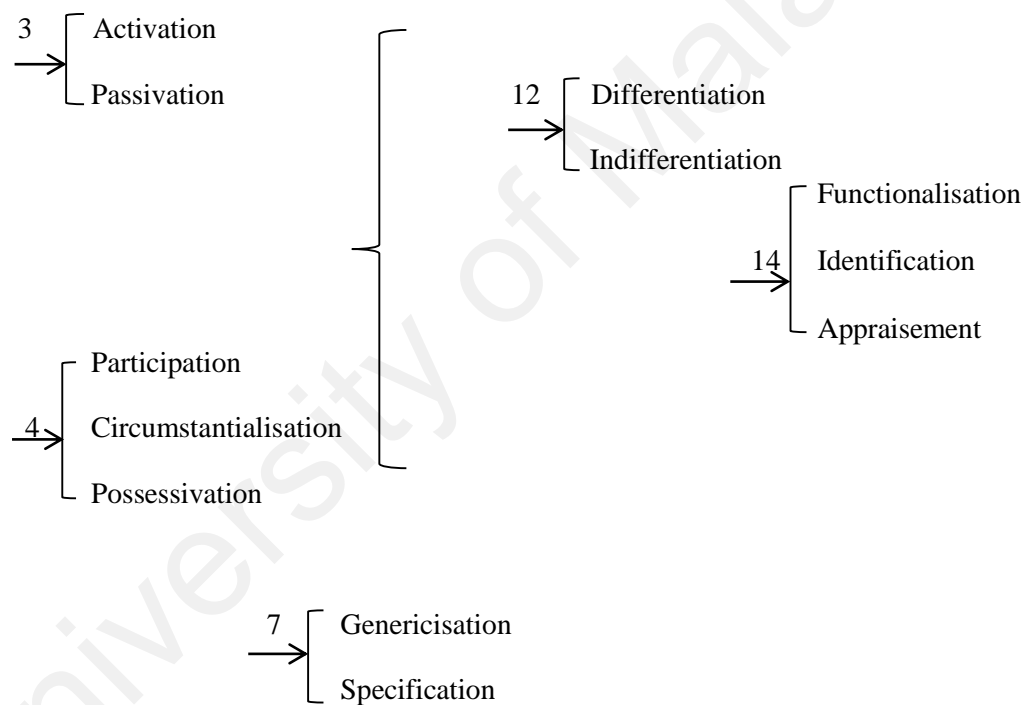


Figure 3.3: Social Actor Categories Used in the Study

The twelve (12) identified categories used in the study are described based on Van Leeuwen's (2008) explanations.

1. Activation/Passivation:

Activation happens when social actors are indicated as the active, dynamic forces in an activity thus signalling power. Passivation on the other hand occurs when the

social actors are portrayed as experiencing the activity or as the recipient of the activity thus signalling vulnerability. For example, in “[Eighty] young white thugs attacked African street vendors”, “young white thugs” are activated and “African street vendors” passivated. Passivated social actors can be subjected or treated as objects in the representation or beneficialised either positively or negatively as gaining from the action. The role of the social actors is not congruent with the grammatical role it is given (p. 33).

2. Participation/Circumstantialisation/Possessivation:

Activation of a social actor can be realised through participation (active roles of the social actors through grammatical participant roles) or through circumstantialisation (indirectly through the mediation of a prepositional circumstantial with *by* or *from* e.g. People of Asian descent suddenly received a cold-shoulder from neighbours and co-workers) or by possessivation (the use of possessive pronoun to activate, e.g. our intake, or passivate, e.g. my teacher) (p. 33).

3. Genericisation/Specification:

Social actors are indicated with either a generic reference (use of the plural without an article or use of the singular with a definite or indefinite article) or a specific reference (concrete reference to immediate experience). Genericisation happens when social actors are represented as classes (e.g. Non-European immigrants make up 6.5 percent of the population) while specification occurs when social actors are identifiable individuals (e.g. Staff in both playgroups and nurseries expressed willingness to supply information if asked and regretted that their opinions were not valued more). Genericisation establishes distance from the reader (p. 35).

4. Differentiation/Indifferentiation:

Differentiation clearly differentiates an individual social actor or group of social actors from another similar actor or group constructing the difference between the

‘self’ and the ‘other’ or between ‘us’ versus ‘them’ (e.g. And though many of the new immigrants are educated high-achievers from places like Singapore and Hong Kong – “uptown” people in American terminology, others are “downtown” people from places like Vietnam, the Philippines, and London). Indifferentiation on the other hand creates no distinction. (p. 40).

5. Functionalisation/Identification/Appraisalment:

Functionalisation references social actors by what they do or by what they are through activities and the things they do, such as occupations or roles (e.g. pianist, chairperson etc.). High-status social actors such as government and experts are always functionalised. Identification refers to social actors not through what they do, but in terms of what they inevitably are. There are three types of identification: classification (use of age, gender provenance, class, wealth, race, ethnicity, religion, or sexual orientation), relational identification (often possessivated via personal relationships, kinship or work relations e.g. my friend), and physical identification references social actors by their physical characteristics to uniquely distinguish them within a specific context (e.g. by use on nouns: brunette, use of adjectives: short, and use of prepositional phrase: with long hair) . For appraisalment, social actors are evaluated as good or bad, loved or hated, admired or pitied (e.g. “the darling”, “the bastard”, “the wretch”, or “thugs”) (p. 42 – 45).

3.3.2 Analytical Framework Research Question 2: Social Action Network

The analysis for Research Question 2 uses categories from van Leeuwen’s (2008) Social Action Network framework, employed in a thematic manner. The framework helps examine how social actions involving the exposure to RF from telecommunications structures are represented in the discourse of the various stakeholders.

Van Leeuwen (2009) explains that “the core of a practice is formed by a set of actions” (p. 148), which may or may not have to be performed in a specific order. Van Leeuwen and Wodak (1999) add that these actions are socially evolved and performed to a “greater or lesser degree by habit, convention or prescription” (p. 94) in order to achieve some kind of social goal. This study involves various stakeholders hoping to achieve different goals and as Berger and Luckmann (1966) highlight, social practices are just not externally visible, but the actions involve “the emotions and attitudes that belong to these actions” (p. 113).

Figure 3.4 illustrates the Social Action Network framework. However, not all the categories in the framework are used in the study.

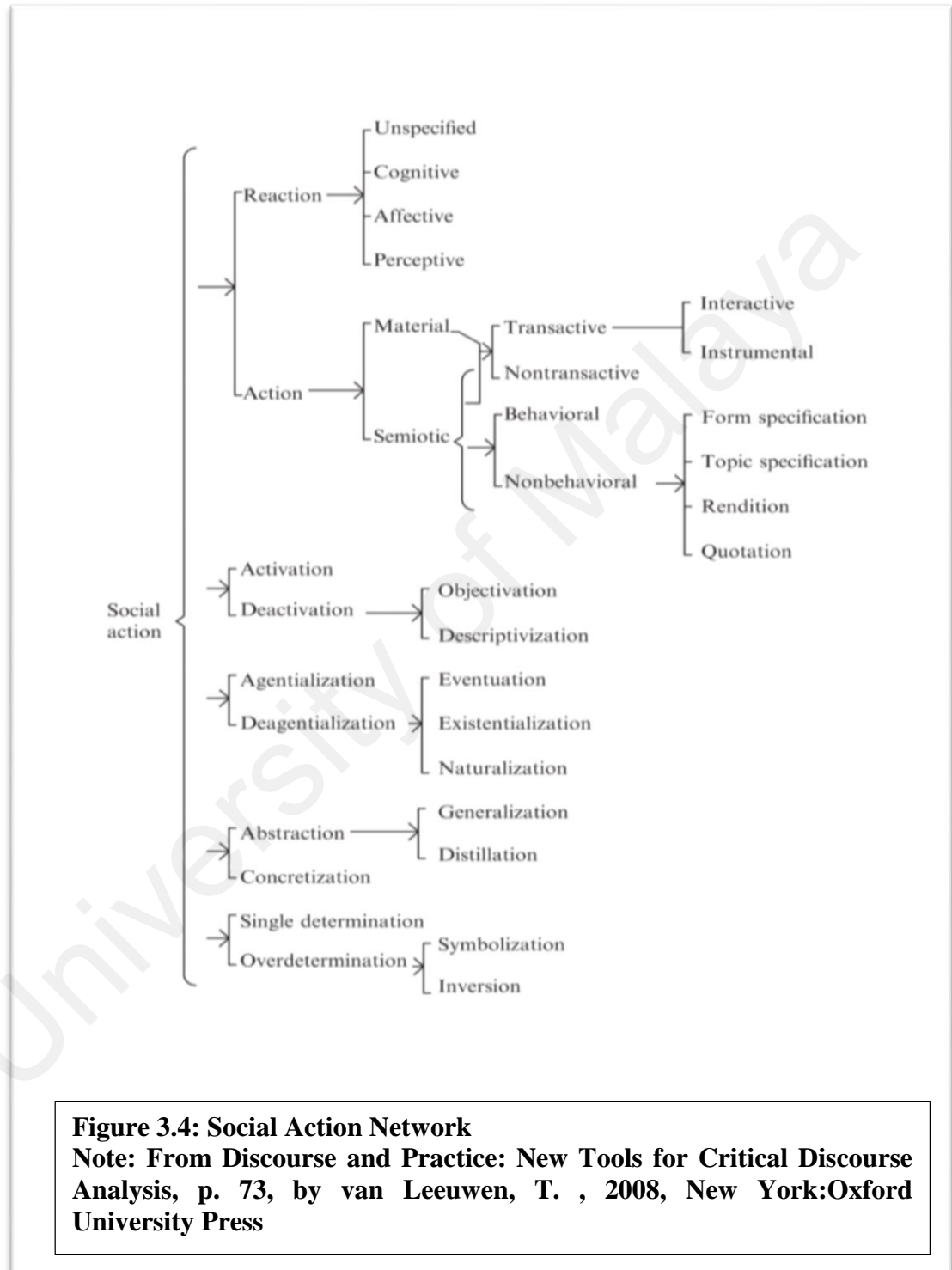


Figure 3.5: Social Action Categories Used in the Study, shows the twenty-two (22) categories in van Leeuwen's (2008) Social Action Network framework that were identified from a pilot study conducted on samples of the data (see sub-section 3.4.2). These categories are used in the analysis as they are significant and appear frequently in the data.

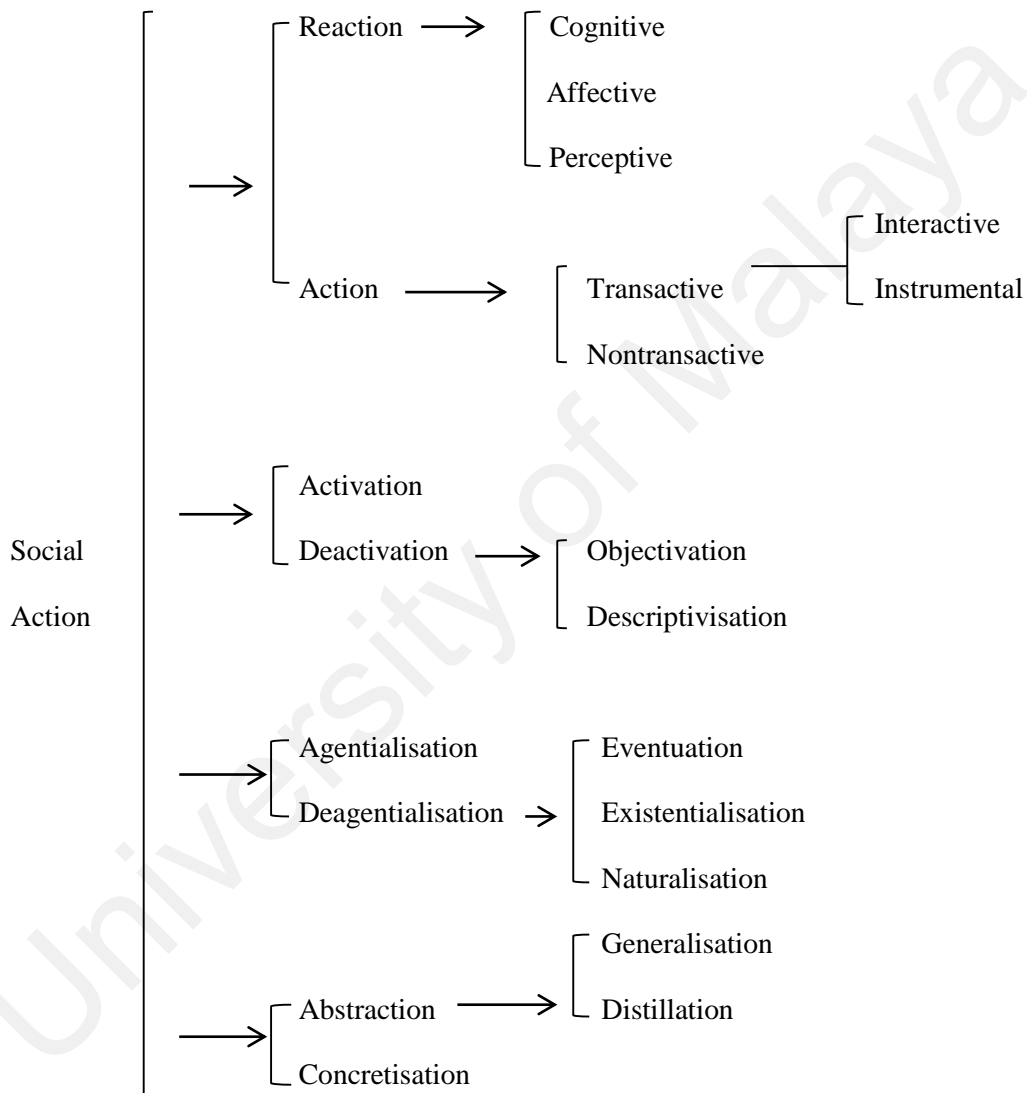


Figure 3.5: Social Action Categories Used in the Study

The categories are briefly described based on Van Leeuwen's (2008) explanation:
action/reaction

1. Action/Reaction carries meanings as to who is acting/reacting, and the type of reaction they have. Reactions to social actions can be ascribed as unspecified or unspecified. Unspecified reactions use verbs such as 'react' and 'respond' whereas specified reactions can be cognitive, perceptive or affective. The representation of reactions of social actors functions as a way of legitimising their thoughts or feelings (p. 58).
2. Cognitive/Affective/Perceptive reactions are specified as particular types of reactions. Cognitive reaction indicates how knowledge is acquired, affective reaction refers to how feelings and attitudes are shaped (e.g. feel, fear), and perceptive reaction suggests how insight is perceived (e.g. see, perceive). Cognitive reactions are attributed to social actors who are powerful. However, as the power of social actors decreases the number of emotive reactions ascribed to them increases. For example, in the field of advertising, the behaviour of the consumer is represented as mostly motivated by affective reactions, by desires and needs whereas the reactions which advertisers attribute to themselves are more likely to be cognitive and rational (p. 59).
3. Transactive action involves two participants: the actor who performs the deed, and the goal, being the actor, thing or phenomenon to which the process extends. Transactive actions are realised through interactive and instrumental actions (p. 60).
4. Interactive action is referred to by means of a verb which can only take a human goal, as with 'hug' (e.g. Mary Kate ran to her and hugged her) (p. 60).
5. Instrumental transactions have either a human or nonhuman goal. Instrumental transactions represent people as interchangeable with objects, for instance, through

verbs like 'use', 'transport', 'destroy', 'carry', etc (e.g. the bullet killed him).

Instrumentalisations are common in texts which are to some degree bureaucratised (p. 61).

6. Nontransactive actions involve only one participant, the 'actor' who must be human. Nontransactive actions tend to be associated with less powerful groups (p. 60).
7. Activation is grammatically realised in the verbal group of a non-embedded clause. Actions/reactions that are activated can be represented as dynamic processes (p. 63).
8. Deactivation is represented statically, as though they are entities or qualities rather than dynamic processes. It can be used to mask or legitimate particular processes. Deactivation is realised through objectivation and descriptivisation (p. 63).
9. Objectivation is recognised by nominalisations or process nouns which can function as subject or object of the clause (e.g. entry procedure, admission policies, ritual etc.). Objectivation can also be realised metonymically, by substituting talk about the action with the time associated with the action (temporalisation), or the place associated with the action (spatialisation) (p. 63-64).
10. Descriptivisation represents actions/reactions as a more or less permanent quality of social actors (e.g. the smiling teacher) (p. 65).
11. Agentialisation indicates that the action/reaction was brought about by human agency (p. 66).
12. Deagentialisation masks human agency in the action or reaction (e.g. through natural forces, unconscious process, and so on). Deagentialisation is realised through eventuation, existentialisation and naturalisation (p. 66).

13. Eventuation represents an action or reaction as an event that ‘happens’ without the involvement of human agency. The question “by whom?” cannot relevantly be asked in connection to it. (p. 66).
14. Existentialisation represents an action or reaction as something that simply exists. It is realised through the use of existential process clauses (these frequently begin with “there is...” (p. 67).
15. Naturalisation is an action or reaction that is represented as a natural process (e.g. ebb and flood, of birth and death etc.) and by way of reference to abstract material processes such as ‘vary’, ‘expend’ or ‘develop’. Naturalisation is the most common form of deagentialisation (p. 68).
16. Abstraction draws attention away from the specific, concrete micro-actions that constitute actions. It is an important issue in CDA as texts which are concerned with legitimating and delegitimising social actions tend to invoke abstractions. Abstraction is recognised through generalisation and distillation (p. 69).
17. Generalisation can be seen as a form of abstraction; they abstract away from more specific micro-actions that make up an action (e.g. Milk time is treated as a specific event in some classes and passes almost unnoticed in others). It is difficult to provide linguistic criteria for recognising the generality of isolated actions – the action taxonomies inherent in a text can only be constructed after comparing different representations of the same. It is also an important issue in CDA, as texts which are mainly concerned with legitimising or delegitimising actions and reactions tend to move high up on the generalisation scale (p. 69).
18. Distillation abstracts particular qualities of action/reaction and expresses these as nominalisations or process nouns (e.g. Your interaction with teachers throughout school life can have a very positive effect on your child’s attitudes). Distillation

does not only highlight some aspect of an action at the expense of others, but it also realises purposes and legitimations (p. 69).

3.3.3 Analytical Framework Research Question 3: Adapted Key Steps in Applying Effective Risk Communication

The recommendation for best practices in risk communication (Research Question 3) in Chapter 6 is based on the findings from Research Questions 1 and 2 as the outcomes highlight both latent and overt reasons surrounding the controversy on RF exposure from telecommunication structures. The findings from Chapters 4 (Research Question 1) and 5 (Research Question 2) have been fed into my adapted Key Steps in Applying Effective Risk Communication framework to identify the key areas of concern that impede effective risk communication. Recommendations have been then formulated for effective risk communication. This is also the first study that uses both CDA and the adapted Key Steps in Applying Effective Risk Communication framework for crafting recommendations for stakeholders in the telecommunication industry to address the health debates on RF exposure.

Figure 3.6 shows Kemp's (2009) six (6) steps framework which is linear. The initial framework by Kemp (2009) is used for the telecommunication industry to address the contestation on RF's impact on health. The framework is adapted for this study.

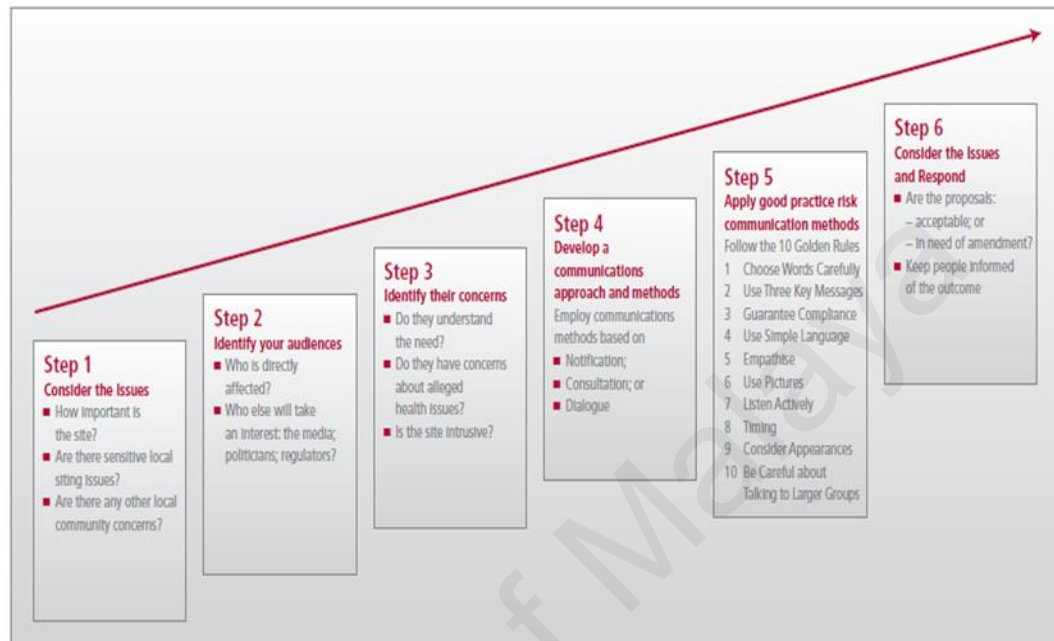


Figure 3.6: Key Steps in Applying Effective Risk Communication.

Note. From Risk communication guide for mobile phones and base stations: Practical guidance and support on good risk communications practice. 2009 by GSMA and Mobile Manufacturers Forum

I have adapted Kemp's (2009) framework to look circular rather than linear to signify that risk communication or any kind of communication is an ongoing process rather "than one with a beginning and an end" (Argenti, 2013, p. 31). This is supported by Heath and O'Hair (2010) who concur that a "linear sender-receiver model was in decline" (p. 13) because of the need to forge partnerships with communities and to adapt to changing audience diversity. I have retained Steps 1 to 5 of Kemp's framework: Step 1: Consider the issues; Step 2: Identify your audiences; Step 3: Identify their concerns; Step 4: Develop a communications approach and methods; and Step 5: Apply good practice in risk communication methods. However, I have extended

his framework with two (2) additional steps, namely, Step 6: Pretest communication materials and Step 7: Use multi-channel approach.

Step 6: Pretest communication materials is included because pretesting measures the reaction of the target audience to the concepts and message materials before production (Bertrand, 2006). Adhikarya (1994) also states that pretesting should be an integral part of any communication initiative because the effectiveness of a communication initiative largely “depends on the relevance, validity and practicality of the information” (p. 56) communicated to the affected stakeholders. As such, Lundgren and McMakin (2009) state that communication messages must be pretested, that is reviewed by people from the intended audience before dissemination to ensure that the risk message is correct and that the message achieves the desired results. Kemp (2009) states that the message must be pretested “whenever possible” (p. 18) but does not emphasise its role in his framework.

Step 7: Use multi-channel approach is also included in the adapted framework because numerous research experiences and empirical studies on communication media effects attests that a multi-media approach is “usually more cost-effective than the use of a single communication medium” as it caters to varying media consumption habits (Adhikarya, 1994, p. 49). Besides, Ruddat et al. (2010) and Covello (2010) highlight that a multi-media approach is needed for effective knowledge transfer. This they add better targets the diverse target audience through their preferred media.

In Kemp’s (2009) framework, the last step is described as “Consider the issues and respond” (p. 9) and this label does not infer evaluation, but Kemp states that it refers to checking if the proposals are acceptable or in need of amendments. So I have renamed

this step as “Evaluate effectiveness” for clarity and to be in line with communication initiatives explained by Ruddat et al. (2010), Covello (2010), Heath and O’Hair (2010), Lundgren and McMakin (2009), and Adhikarya (1994). They express that evaluation is important and that it should be a built-in component to assess the performance, effects and impact of a communication plan or proposal. Evaluation essentially measures the goals of the risk communication plan, the impact of the message on the target audience and refines the communication strategy on the whole if necessary. Figure 3.7 illustrates my adapted Key Steps in Applying Effective Risk Communication framework.

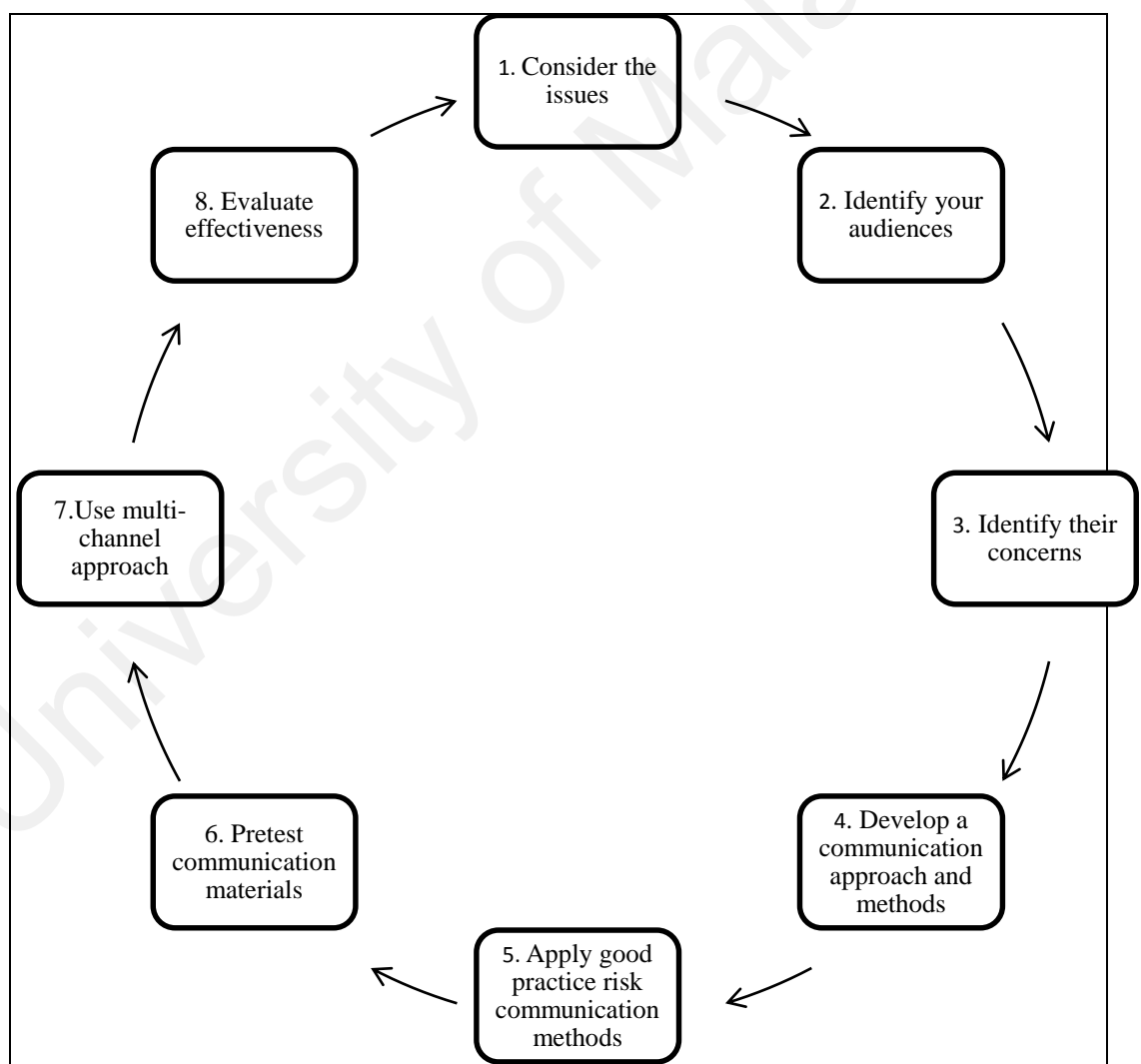


Figure 3.7: Adapted Key Steps in Applying Effective Risk Communication

The findings from Research Questions 1 and 2 have been applied to the adapted framework in the following manner to identify the setbacks in the current risk communication initiatives, and in the formulation of recommendations (Research Question 3):

Step 1: Consider the Issues

The findings have been used to determine how important the sites for telecommunication structures are to the telcos and if there are any sensitive local siting issues or other local community concerns.

Step 2: Identify your audiences

The findings have been applied to determine who is directly and indirectly affected by the location of the telecommunication structures.

Step 3: Identify their concerns

The results have been applied to determine if the residents' concerns are specifically on the location of telecommunication structures, or if they have concerns over health issues and/or if they deem the site to be intrusive.

Step 4: Develop a communications approach and methods

The findings have been used to verify if the telcos/approving authorities have had any kind of communication prior to the construction of telecommunication structures (Kemp, 2009).

Step 5: Apply good practice in risk communication methods

The findings have been used to highlight the current communication methods on the health debates on RF.

Step 6: Pretest communication materials

The findings have been used to obtain answers on the effectiveness of the communication materials, and if the materials have been pretested.

Step 7: Multi-media approach

The results have been applied to establish the kinds of media currently being used and its effectiveness.

Step 8: Evaluative Effectiveness

The findings have been used to highlight if the current risk communication initiatives have been evaluated to measure its impact and success.

The application of the findings from Research Question 1 and 2 to the framework have unknotted the underlying reasons for the perceived health risk and helped identify gaps that need to be plugged for effective risk communication. Based on this, appropriate recommendations have been put forward on how to reduce contestations and improve risk communication (Chapter 6).

3.4 Methodology

This section describes the research design (sub-section 3.4.1), and its analysis procedures (sub-section 3.4.2).

3.4.1 Research Design

In keeping with the aim this study, the research design explains the type of data and research instrument (sub-section 3.4.1.1), the data collection procedure (sub-section 3.4.1.2) and the data selection procedure (sub-section 3.4.1.3).

3.4.1.1 Data and Research Instrument

In order to answer the research questions, qualitative data from spoken conversations was used to understand the kind of discourse the stakeholders construct on RF. According to David & Sutton (2011, p. 102), qualitative data is appropriate to analyse

interpretive patterns and is strongly associated with induction and exploration in research. In addition, they highlight that the inductive approach through which qualitative data is acquired aids in giving voice to those being researched. This is relevant to the present study as rich detailed answers are required as opposed to data that can be coded and processed speedily.

Qualitative data was obtained from semi-structured interviews which required the interviewer asking people questions and correspondingly listening conscientiously to the answers given. Gillham (2005) says that semi-structured interviews are the “most important ways of conducting a research interview because of its flexibility, balanced by structure, and the quality of data so obtained” (p. 70). He adds that in this form of interview, questions are open which allows probing and this leads to “openness in the level and range of responses from the interview” (p. 70). This flexibility allows the researcher to follow up on interesting leads raised by the interviewee and clear any inconsistencies that arose. It also gives the interviewees an avenue to express their point of view and permits refinement in data as lines of thought expressed by previous interviewees are presented to other interviewees to gauge if similar or dissimilar views are expressed. As Kvale (2007, p. 65) highlights, semi-structured interview has a degree of structure as well as allows topics of interest to be pursued. Gillham (2005) supports this view by affirming that “one of the strength of the semi-structured interviews is that it facilitates a strong element of discovery, while its structured focus allows an analysis of commonalities” (p. 27).

Hence the interview was conducted along pre-determined lines of enquiry but in a relatively informal atmosphere that also left room for new leads to be explored. This is essential since it allows both comparison of results between and within the data set, but

also ensures depth validity of each individual interview as it lets the interviewee tell the story and so determine to a greater extent the flow of the dialogue (David & Sutton, 2011, p. 120). This instrument is also appropriate for this study as Bernard (2006, p. 12) is of the view that semi-structured interviews are suitable when it involves high-level bureaucrats and members of a community who have time constraints.

The interviews were conducted with the relevant stakeholders that were identified in consultation with MCMC. Stakeholders are organisations or agents that are directly or indirectly affected by an issue (see Gilmour, Beilin, & Sysak, 2011, p. 284). As such, risk communication needs to take into account the knowledge, practices and values of stakeholders to ensure that these relevant organisations or agents are inclusive as possible in the consultation and decision making. Further Adler and Kranowitz (2005) confirm that it is pertinent to work with different stakeholders as they provide “different frames of reference and units of analysis to approach the same issues” (p. 4). Similarly, Wodak and Meyer (2009), state that different functions of discursive practices create different fields of action. This they suggest makes discourses “open and often hybrid” (p. 90) and hence confirms the need to look at the discourse on RF exposure from the perspectives of the various stakeholders.

3.4.1.2 Data Collection Procedure

A total of thirty one (31) face-to-face interviews were conducted. Based on existing literature on the topic a list of key themes were drawn up around which the interviews were built on with varying degrees of structure and standardisation (David & Sutton, 2011, p. 121). The key themes aided in formulating specific questions for the interview guide that allowed the researcher to probe further to get more detail. This was necessary as the interviewees are stakeholders with different views and agendas which are relevant

to this study. The interview guide was formulated to help answer the research questions. The question guides for the various stakeholders were designed so as to tap on their different backgrounds, and to unfold their experiences and points of view. However, the questions and their sequence were not strictly predetermined but instead followed the interviewee's answers to allow new directions to open up.

The interview guide included introducing questions, follow-up questions which allowed the interviewee to elaborate their answers, probing questions, and specifying questions. Generally, the questions covered values, beliefs, behavior, formal and informal roles, relationships, emotions and encounters of the interviewees or the organisations they represented on the topic of study in order to enable comparability. The selection of the questions were particularly guided by the objectives of this study which investigated the social practices of the stakeholders regarding the health debates on RF exposure from telecommunication structures, mainly in terms of contestations and conflicts. So, the questions touched on the following areas:

- i. the stakeholder's views on RF and the impact on health;
- ii. the stakeholder's involvement in the health debates on RF from telecommunication structures;
- iii. the stakeholder's opinions on the roles played by the other stakeholders on this issue;
- iv. the actions that the stakeholder has undertaken to support their stand on this issue; and finally
- v. the actions that the interviewee wants other stakeholders to assume in order to help resolve this issue.

The questions were triangulated by getting feedback from experts in the field of RF and risk communication to ensure effectiveness and validity. The interview question guides are attached as follows (see pages 320 to 329):

Appendix C: Interview guide for representatives from MCMC

Appendix D: Interview guide for representative from MOH

Appendix E: Interview guide for representatives from the local government

Appendix F: Interview guide for representatives from telcos

Appendix G: Interview guide for residents

Appendix H: Interview guide for politicians

Appendix I: Interview guide for activists

Appendix J: Interview guide for representatives from the media

Appendix K: Interview guide for experts

The interviews were conducted in the interviewee's office or at a mutually agreed common location and recorded with a digital recorder. The audio recordings were transcribed by the researcher for data analysis as "the hours of listening required to transcribe a tape are often the best way of gaining a fine-grained knowledge of your own data" (see David & Sutton, 2011. p. 29).

3.4.1.3 Data Selection Procedure

A vital requirement in selecting a sample is to ensure that the selected sample is "not bias by either over- or under-representing different sections of the population" (David & Sutton, 2011, p. 227). Hence, a non-probability sampling method is applied as there are no convenient sampling frames of the population available. A purposive sampling method is used in selecting the sample based on the advice given by MCMC and experts

on who is appropriate to be interviewed for each stakeholder group and to be included as part of the sample for this study.

According to Covello (2011), risk communication, is a two-way exchange of information about risks and if poorly managed it can “fan emotions, undermine public trust, create stress, and exacerbate the existing crisis” (p. 511). Consequently, risk communication involves communicating with various stakeholders who can view the same issue through different lenses making this a delicate and complicated task. Therefore, it is prudent that all stakeholders’ views be heard and addressed in order to implement an effective and feasible risk communication program.

Ruddat et. al, (2010, p. 262), Boholm (2009, p. 336), McComas (2006, p. 77), and Covello (1993, p. 18) state that the interested parties in risk communication are government agencies, corporations or industry groups, unions, politicians, the media, physicians, scientists, professional organisations, special interest groups, communities and individual citizens. Accordingly, the interviews are conducted with representatives from MCMC, Ministry of Health, the local town/city councils/local government, telcos, residents, political parties (from both the ruling government and the opposition), activists, experts and the media. A brief description of the interviewees is provided in sub-sections (a) to (g). However, personal details such as age and gender of the interviewees are not disclosed to maintain confidentiality.

(a) ***Government departments/Agencies***

This stakeholder group comprises of MCMC, the Ministry of Health and the local town/city councils as these organisations are directly involved in telecommunications,

public health and the implementation of guidelines and policies. Seven (7) interviews have been conducted with this group and the details are as follows:

- i. Deputy Director, Infrastructure Development & Standards from the Malaysian Communications and Multimedia Corporation (MCMC) the regulatory body for telecommunications in Malaysia.
- ii. MCMC's Operations Manager, Northern Region (MCMC Northern Region) as the Penang Free WiFi Service, an initiative by the state government is highly politicised resulting in resistance from some residents who are not pleased with the sudden increase of base stations and telecommunication structures.
- iii. The Senior Principal Assistant Director, Engineering Services Division from the Ministry of Health (MOH) who is entrusted with the task of monitoring the findings pertaining the perceived health risk from RF-EMF exposure
- iv. The Local Town Council and Local Government

The following local town councils and local government were specifically chosen as according to M.H. Othman of MCMC (personal communication, Feb 23, 2012) protests from residents against the construction of telecommunication base stations and roof top structures are predominately from urban areas like Petaling Jaya, Subang Jaya, and Penang.

- i. Deputy Director, Petaling Jaya City Council (MBPJ)
- ii. Director, Municipal Council of Penang Island (MPPP)
- iii. Assistant Secretary, State Secretariat Penang (SSP)
- iv. Councillor, Subang Jaya Municipal Council (MPSJ)

(b) ***Telecommunication companies (Telcos)***

Telcos are responsible for the existence of base stations and telecommunication structures as it is mandatory in their line business. Officials from three (3) telcos have been interviewed and they are:

- i. Telco A: Principal, Communications, Corporate Affairs
- ii. Telco B: Vice President, Regulatory
- iii. Telco C: Manager, Corporate Communications

(c) ***Residents***

The following residents from the urban areas in Penang and suburban areas in Taiping who expressed concerns over the siting of base stations and telecommunication structures near their homes have been interviewed:

- i. Resident A is the President of Lone Pine Condominium & Resort, Paya Terubong, Air Itam, Penang who complained to MCMC about telecommunication structures on a building facing the condominium block.
- ii. Resident B is an office worker from Lebuhraya Katz, Penang and he too complained to MCMC regarding base stations and rooftop structures in the vicinity of his office.
- iii. Resident C who is a Chartered Accountant by profession attended the 3 June 2012 forum organised by Penang EMF Protection Alliance in Penang. She subsequently invited the Penang EMF Protection Alliance to conduct some tests on RF readings in her neighborhood, Taman Saujana Permai, Taiping as she was concerned of a base station situated in her residential area.
- iv. Resident D is the *Penolong Penghulu* (Assistant Village Headman) of Kampung Assam Kumbang, Taiping as the residents were concerned about a base station located close to a school.

- v. Resident E from Taman Panglima, Taiping was interviewed as he was concerned about telco antennas on a mosque minaret that was facing his home.

(d) *Politicians*

Politicians from both the state ruling government and the opposition have been interviewed as being elected representatives they are ultimately answerable to their constituents given the sensitivity of the issue and perceived health hazard. The politicians are chosen from specific geographic areas identified by MCMC as they received the most complaints from the residents from these areas on RF-EMF related issues.

- i. Politician A is from the Malaysian Chinese Association (MCA), a component party of Barisan Nasional, the ruling coalition at the federal level but which forms the opposition in the state of Penang. His constituency is very vocal on the location and construction of telecommunication structures.
- ii. Politician B is from Gerakan, a component of Barisan Nasional and like the MCA is the opposition in the state of Penang. He wears many hats as he is a politician, a medical doctor by profession, an advisor to a non-governmental organisation namely Penang EMF Alliance, and a parent of a child whose health he believes was affected by RF emission from telecommunication structures.
- iii. Politician C is from the Democratic Action Party (DAP) and a Member of Parliament for the state government of Penang. He is instrumental for driving The Wireless@ Penang initiative which is working towards providing free wifi service to all residents in the state of Penang.
- iv. Politician D is from the Democratic Action Party (DAP) and a Member of Parliament for the state government of Selangor. Her constituency is also another

cradle of dissent with numerous protests by residents against the siting of telecommunication structures.

(e) *Activists*

The activists have been interviewed as they are campaigning firstly, for the science-based standards set by IEEE and ICNIRP on RF limits in Malaysia to be lowered to the standards adopted by Russia, China and Switzerland, and secondly for the vicinity of residential homes and schools to be free of base stations and telecommunication structures. The interviewees are:

- i. Activist A, the secretary of Penang EMF Alliance. This NGO is made up of a group of concerned citizens who are against wireless@penang and WiMax@penang projects launched by the Penang State Government. A forum “Environmental Hazards Protection Forum” was organised by them on June 3, 2012 at Universiti Sains Malaysia, Penang.
- ii. Activist B, the Director, Radiation Solutions from Mumbai, India. She was one of the speakers at the “Environmental Hazards Protection Forum” organised by Penang EMF Alliance on June 3, 2012. She actively campaigns against the siting of base stations or telecommunication structures in residential areas and schools in India and is requesting that the RF limits be lowered. Her company deals with providing shielding solutions from multiple radiation emitting sources operating at different frequencies like mobile devices, mobile towers, computers, power lines, Wi-fi, and X-ray.
- iii. Activist C, a medical professor from Taman Subang, Selangor who conducted a study in 2008 on RF from telecommunication towers in the Taman Subang area. Her children fell ill frequently after the installation of telecommunication towers in her residential area in Subang Jaya and this prompted her to conduct the study

on the effects of RF exposure. She works actively with Penang EMF Alliance and many resident associations across the country on issues pertaining RF from telecommunication structures. The data from this interview with Activist C provides information from various perspectives namely, as an affected resident, a concerned parent, a medical professional, an academician and as an activist.

(f) **Media**

Stakeholders from the media have been interviewed as they play a crucial role in disseminating health related information to the public. Media texts can shape the values and attitudes of contemporary society and often the media is accused of sensationalising news to gain higher circulation.

- i. Journalist A: The Editor-in-Chief of Sin Chew Daily, as according to I. Othman of MCMC (personal communication, March 7, 2012), the Chinese dailies provide wide coverage on this topic of study.
- ii. Journalist B: Executive Editor of The Star Publications, as The Star is the major English newspaper in Peninsular Malaysia in terms of circulation.
- iii. Journalist C: A journalist from Sin Chew Daily, Penang Branch, as he covered many protests by residents on the siting of base stations in the state of Penang.

(g) **Experts**

The interviews have been conducted with experts from the science, academic and medical fields so as to get a better understanding of the perceived health risk from telecommunication structures from scientific, academic and medical perspectives. The experts are:

- i. Expert 1 is the Manager of the Non-Ionizing Radiation Group Radiation Safety & Health Division from Malaysia Nuclear Agency (MNA) as this agency's services

are sought by MCMC to test RF exposure levels when it receives complaints from residents.

- ii. Expert 2 is a private Senior Consultant on Ionizing and Non-ionizing Radiation. Prior to his retirement he was with the Malaysian Nuclear Agency for more than 20 years.
- iii. Expert 3 is an international specialist who is the Chief EME Scientist of Motorola Solutions Inc., U.S.A. He was the Chairman of IEEE/EMBS Committee on Man and Radiation (1996-1997), Co-Chairman of IEEE Scientific Coordinating Committee 28, Sub-committee 4 on RF Safety Standard (1997- 2005), and a member of the Board of Directors of the Bioelectromagnetics Society (1981-1984). He is also a Fellow of IEEE since 1989 and the American Institute for Medical and Biological Engineering from 1996.
- iv. Expert 4 is an independent expert and founder of CISSPR. CISSPR is an EMC, EMF and RF services and solutions provider in Malaysia.
- v. Expert 5 is an Associate Professor/General Manager of Universiti Tenaga Nasional's R & D Sdn Bhd. His background is in electronics and communication engineering and he is a member of IEEE
- vi. Expert 6 is a private medical practitioner & St John Ambulance Malaysia State Commander. He is involved in the health debate about RF emissions as he believes that base stations and telecommunication structures are important for communication in times of crises.

3.4.2 Data Analysis

The audio recordings were transcribed by the researcher for data analysis. Jefferson transcription conventions were adopted only for the transcription layout where the speakers are identified at each point when there is speaker transition. Otherwise, the

transcriptions are verbatim and are shown as they were heard on the recording. The finer details like pauses and changes in pitch and the speed of speech are not included in the transcriptions as these details are not relevant to the analysis. However, punctuation has been added where necessary to enhance readability. The words spoken in the Malay language were translated by the researcher and verified with a Malay/English language translator for accuracy.

Seven (7) samples were used for the pilot study and they came from each of the seven (7) stakeholder groups. The pilot study was conducted in the following manner:

- i) the data from the samples were coded to identify the main themes,
- ii) the data coded under the main themes were classified according to van Leeuwen's categories in his social actor and social action network frameworks seen in Figure 3.2 sub-section 3.3.1 and Figure 3.4 in sub-section 3.3.2 respectively. This was to ensure that the categories were not imposed on the data but instead for the categories to emerge from the data itself.
- iii) the salient categories that came from the data were identified and used in the analysis of the representation of social actors (see Figure 3.3: Social Actor Categories Used in the Study in sub-section 3.3.1) and social actions (see Figure 3.5: Social Action Categories Used in the Study in sub-section 3.3.2)

3.5 Summary

As CDA does not have a unitary theoretical framework or methodology, the theoretical framework for this study draws from selected concepts in CDA, namely discourse, representation, ideology, power and social practice. The selected concepts are explained in this chapter based on mainly Fairclough's, van Dijk's, Wodak's, and van Leeuwen's approaches to CDA.

This chapter also highlights CDA's relevance to risk communication by highlighting that studies of this nature require discourse analytical work to understand the meaning behind the discourse and the accountability and motives of the stakeholders. This is because the various stakeholders have different role-relationships and ideologies. Therefore discourse on RF exposure takes place among the various stakeholders with different social roles, dissimilar social identities and varied levels of knowledge.

The chapter also explains that the analysis for Research Question 1 and Research Question 2 applies categories from van Leeuwen's social actor and social action network frameworks, in a thematic examination. Research Question 3 uses my adapted version of the Key Steps in Applying Effective Risk Communication framework. The categories in van Leeuwen's frameworks enable the cultural, social, and psychological practice as socially ascribed to the diverse social actors and social actions in risk communication to be included in the analysis and be investigated. Therefore, the findings from Research Questions 1 and 2 were fed into my adapted framework to identify the key areas of concern that impede effective risk communication. Recommendations are then formulated for effective risk communication (Research Question 3).

The chapter also explains that qualitative data from spoken conversations is used to understand the stakeholders' discourse on RF. It describes that semi-structured interviews were used to obtain the data from thirty-one face to face interviews with representatives from seven (7) stakeholder groups. These stakeholders were identified in consultation with MCMC and they are the government departments/agencies (MCMC, Ministry of Health and local town/city councils), the telcos, the residents, politicians (from both the ruling government and the opposition), activists, media and the experts.

A pilot study was conducted on samples of the data to identify the themes, and the dominant and common categories in the data.

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CHAPTER 4: REPRESENTATION OF SOCIAL ACTORS

4.1 Introduction

The focus of this chapter is on the representation of the social actors in health debates on RF, specifically on how various stakeholders represent themselves and the ‘other’ stakeholders. The data is from interviews conducted with the various representatives from government departments/agencies (MCMC, MOH, and local town councils), telcos, residents, politicians, activists, media and experts who are involved directly in this ongoing controversy [see Chapter 3 sub-section 3.4.1.3(a) to (g)].

The data from the various social actors are analysed and discussed separately according to the seven stakeholder groups in sub-sections 4.2 to 4.8 based on a thematic examination (of credibility, knowledge and motivation) that employs van Leeuwen’s Social Actor’s categories. The categories that are dominant and common in the data are activation, passivation, participation, circumstantialisation, possessivation, genericisation, specification, differentiation, indifferentiation, functionalisation, identification, and appraisalment (see Chapter 3 sub-section 3.3.1). The analysis and discussion in the representation of the ‘self’ and the ‘other’ are concentrated on these major data driven categories.

The representation of ‘self’ differs in each stakeholder group as there is a tendency to view themselves positively in relation to the role they play in the health debates on RF e.g. trusted body on RF, monitoring and reviewing body, custodian of safety and compliance etc. The representation of the ‘other’ is condensed and grouped in three broad themes that focus on the ‘others’ levels of credibility, knowledge and motivation

as these themes recur constantly in my analysis of the data. These three levels affect the credibility and trustworthiness of the stakeholders and are central tenets in risk communication (see Covello, 2010; Twyman, Harvey, & Harries, 2008). These three themes are labelled as “Othering due to their level of credibility”, “Othering due to their level of knowledge” and “Othering due to their level of motivation”. The chapter concludes with a summary of the analysis and discussion in Section 4.9.

4.2 Government Departments/Agencies Stakeholder Group

The government departments/agencies are partners as they are part of the machinery of the government but they play dissimilar roles in this issue as their objectives differ [see Chapter 3, sub-section 3.4.1.3(a)]. As such, the analysis of this group of stakeholders is divided into three sub-sections: 4.2.1 MCMC, 4.2.2 MOH and 4.2.3 Local Government.

4.2.1 MCMC’s Representation of ‘Self’

MCMC is the regulator of the telecommunication industry in Malaysia and hence view themselves positively as the trusted body in the country on issues pertaining to RF. This representation is the sole focus of MCMC’s representation of ‘self’ as they aim to validate their powerful position in the telecommunication industry.

4.2.1.1 Representation of ‘self’ as a trusted body

Excerpt 4.1: MCMC1

We are the trusted body on this issue here in Malaysia besides WHO. So who else should you trust and refer to besides WHO which is the World Health Organisation. Our regulations are based on WHO and WHO refers to the International Commission for Non-ionizing Radiation Protection. These regulations are based on scientific findings and actually the base stations are way below the set standard.

MCMC activates its role with the phrase “trusted body” which indicates that it is the most reliable organisation in Malaysia qualified to speak on RF (see Excerpt 4.1: MCMC1). The phrase “besides WHO” is used to elevate its importance through functionalisation to be on par with WHO which is a specialised agency of the United Nations. The repetitive use of the articulation “besides WHO” reinforces that there is no other authority or agency besides MCMC in Malaysia that is competent in dealing with RF. To strengthen this point, MCMC activates its alliance with WHO with the articulation “Our regulations are based on WHO” which highlights it implements rules and policies that complies with world standards. The phrase “refers to International Commission for Non-ionizing Radiation Protection” reinforces specifically that the standards adopted in Malaysia are based on the global benchmarks for RF emissions set by WHO in consultation with ICNIRP. By highlighting this cooperation with WHO and ICNIRP, activation is realised through participation as it shows MCMC’s shared power relations with these two renowned bodies that are authorities on RF. Also, the expression “scientific findings” suggests that the standards are tested and proven by these world renowned bodies.

MCMC emphasises its function again by activating its involvement in the health debates with the use of pronouns “we” and “our” which eludes a tight sense of ‘in-group’ identity. The articulation “So who else should you trust and refer to besides

WHO” puts MCMC on the same pedestal as WHO. This comparison is anticipated as MCMC holds a powerful position in the telecommunication industry in Malaysia and wants to be seen on equal footing with WHO and ICNIRP that are trusted and respected authorities on RF globally.

Consequently, the term “should” implies that the public is supposed to recognise MCMC as the trustworthy and reliable agency in Malaysia on matters pertaining to RF and that it is rightfully the point of reference in the country on this issue. This is because there is a presupposition by MCMC that they are the trusted body equivalent to WHO. Further, MCMC’s positive appraisal of itself is indicated with the assertion that the base stations in Malaysia “are way below the set standard”. This hints that MCMC is maintaining safe RF emission levels.

Excerpt 4.2: MCMC1

If it’s high it could be 0.1% of the limit of maybe 0.3% so it is still below 1% so what we measure in Malaysian base stations is below 1% of the limit. It is less than 1%.

In Excerpt 4.2: MCMC1, MCMC reinforces its role as a trusted regulator by specifying the measurement of RF emission level in Malaysia. The articulation “If it’s high it could be 0.1% of the limit of maybe 0.3%” indicates that MCMC is vigilant and ensures that RF limits conform to international standards. The repetitive use of the term “is still below 1%” or “is less than 1%” emphasises MCMC’s commitment in carrying out its duties. Further the phrases “we measure” and “Malaysian base stations” specifies its area of jurisdiction and the authority it yields in Malaysia in ensuring RF emission levels are risk-free. It also mitigates the residents’ and activists’ concerns on RF levels as it suggests that MCMC is competent and reliable and is using its authority effectively to maintain a safe environment. It tones down the health debates on RF as being unsubstantiated. This ‘self’ representation of MCMC as a trusted body is perhaps

necessary to gain the confidence of the public to show it is a responsible agent committed in monitoring the situation in consultation with world respected organisations.

4.2.1.2 MCMC's representation of the 'other'

The 'other' for MCMC is MOH, the telcos, the media, activists, residents and politicians. MOH though represented as the 'other' is within the same Government departments/agencies stakeholder group as MCMC.

(a) *Othering due to their level of credibility*

Excerpt 4.3: MCMC1

The Ministry of Health is the actual **custodian of RF-EMF**. RF is radio frequency. So the people who control everything are the Ministry of Health. **They** were appointed **by the cabinet** but I can't remember the year, it's either 2000 or late 1990s. So **they** are appointed as the **custodian for EMF**. **Most of the time they assist us** in our awareness programs and roadshows.

MOH's role is activated with the phrase "the custodian of RF-EMF" as it emphasises their powerful role in the health debates (Excerpt 4.3: MCMC1). The phrase "by the cabinet" suggests that MOH's participation is by circumstantialisation as the appointment to act as the administrator on all matters pertaining to RF is sanctioned by the cabinet. This specification of MOH's appointment draws attention to the importance of this position and the power and authority given to them in dealing with RF related issues. However, MOH's level of involvement is toned down with the phrase "most of the time they assist us". The term "assist" denotes through functionalisation that MOH is playing a supporting role in MCMC's awareness programs and roadshows despite being vested with the power to safeguard public health. In addition, the pronouns "They" and "us" emphasise the 'otherness' between MOH(they) and MCMC(us) though they are belong to the same government stakeholder group.

MOH is not represented as the negative ‘other’ but is subordinated by MCMC for playing a secondary role despite holding a powerful position entrusted by the government. This mitigates MOH’s credibility as a custodian of RF as they are playing second fiddle instead of a dominant role in the health debates on RF. A similar representation of ‘them’ is made by the local government who is in the same stakeholder group [see sub-section 5.2.3.4(a)]. This could be attributed to the organisational culture in most civil service departments which is commonly described as rigid, bureaucratic, centralised, insular and self-protective. Meanwhile, MCMC’s representation of ‘self’ as a trusted body is reinforced as it is seen to be taking the lead in tackling this problem.

Excerpt 4.4: MCMC1

It is **difficult for telcos** to approach the public directly because they are the **interested party** and are going **to make profit out of this**. So **public won’t listen to them but they are cooperating with us** and together we are address the public

Similarly, MCMC paints that the telcos as suffering from a credibility problem (see Excerpt 4.4: MCMC1). The telcos are seen to be an agency that is powerless in dealing with the public. The terms “difficult” and “interested party” highlight that it is problematic for the telcos to approach the public because the telcos are the agents responsible for these structures, and as such the public view them as having vested interest. This benefits MCMC’s credibility as the articulation “but they are cooperating with us” shows MCMC playing a central role in getting the telcos to cooperate and the phrase “with us” suggests that MCMC is the initiator. Firstly, this is a form of positive appraisal of the telcos as it infers that they are still committed in working with MCMC to address this problem though perceived as not credible. Secondly, it validates the ‘self’ representation of MCMC as a trusted body.

Excerpt 4.5: MCMC1

And of course sometimes the media likes to highlights these things, like recently there was a report in the papers that RF can affect trees in temperate weather. The headline came out as “Wireless radio waves kills tress” **so the media sensationalise it and people then start discussing and arguing about this issue.**

In Excerpt 4.5: MCMC1, the media’s credibility is questioned as they sensationalise news on RF. The media’s participation is activated with the clause “so the media sensationalise it and people then start discussing and arguing about this issue” as it indicates that the news and style of reporting have an impact on the public. The word “sensationalise” is not a credible identification of the media as it concocts an impression of the media manipulating news to shape, create or change public opinion. This negative appraisalment of the media by MCMC infers that authenticity of the news on RF and the credibility of the function of the media in reporting fairly are questionable.

Excerpt 4.6: MCMC1

During the sessions when I’m there I notice the NGOs that are complaining, they seem to agree to what we say **but later it’s a different story**

The activists are subjected negatively by MCMC for being fickle and inconsistent with their stand on RF (see Excerpt 4.6: MCMC1). The phrase “later it’s a different story” indicates that they cannot be trusted as they flip-flop in their decisions. The indecisiveness of the activists is a negative appraisalment as they are portrayed as lacking in conviction. The use of the term “story” suggests fabrication which casts doubts on the credibility of these activists.

Excerpt 4.7: MCMC2

It is **difficult to understand the NGOs**. **One minute** they say “no towers” **next minute** they say “we are not against towers but bring the RF limit down and put more towers with lower RF limits”. But our RF emission is already low and **their suggestion will cause more problems** as more structures will be needed

Excerpt 4.7: MCMC2, supports MCMC’s representation of the activists’ as being unpredictable. The phrase “difficult to understand the NGOs” mitigates the NGO’s participation in the health debates as they are not firm and consistent in their demands and it highlights MCMC’s frustration. The phrases “one minute” and “next minute” suggest that the activists’ demands change significantly in a minuscule time frame. This specification identifies them as being untrustworthy and unreliable. The articulation “their suggestion will cause more problems” indicates that the activists are unsure of their demands and that they lack the expertise on RF related matters. Yet, they are fighting for a cause that they are clearly ill equipped for.

The credibility of the activists as agents fighting for social change is doubtful as they are represented as not being a cohesive force looking for a solution. Overall, they are represented by MCMC to be ineffective in bringing about actual change as they are not dependable when it comes to decision making as they shift the goal posts too often.

(b) *Othering due to their level of knowledge*

Excerpt 4.8: MCMC1

Sometimes it is because of **perception** because we have cases where only the tower is there and the antenna is not on yet but many people say they have headache, they feel unwell and so forth. We have awareness programs where we brought in **experts** to talk to them and there is only so much we can do. Because if you have the **wrong perception than it's difficult to convince you**

MCMC looks at the residents as generally lacking in knowledge (Excerpt 4.8: MCMC1). The residents' participation in the health debates on RF exposure is mitigated with the term "perception" to infer that their reactions to telecommunication structures are irrational and not based on facts. The residents' misperception on RF is associated with their unreasonable request to decommission structures that are not installed because they assume that RF from these uninstalled structures affects their health. Their reluctance to listen to experts brought in by MCMC paints them as a group too entrenched in their belief that they are not receptive to listening to any other proofs that challenge their opinion. The MCMC spokesperson's use of the expression "wrong" is a negative appraisal of them as it implies that they are deviating from facts and are erroneous in their demands. The phrase "than it's difficult to convince you" hints at the stubbornness of the residents. It also suggests that the residents will not gain knowledge on RF exposure if they keep refusing to listen to the experts. The term "experts" specifies that people with high degree of skill and knowledge have been invited to speak to the residents. Again, MCMC's representation of 'self' as a trusted body is activated as it indicates that a concerted effort is made to reach out and educate the residents through awareness programs that have highly knowledgeable people as speakers.

(c) *Othering due to their level of motivation*

Excerpt 4.9: MCMC2

Sometimes **because of political reasons this issue is used by one party against another party. So they say** they are fighting for the people or public and they use this issue to **attack**. It's quite difficult, here it is **politically motivated**.

The politicians' sincerity is doubted by MCMC as it is perceived that their involvement is politically motivated (see Excerpt 4.9:MCMC2). The politicians are activated with the phrase "political reasons" to highlight the motives behind their actual involvement. Similarly, the phrase "against another party" activates them as opportunists for using this dispute to gain political mileage. Likewise, with the articulation "so they say" indicates that the politicians feign that they are "fighting for the people or public" as it is required of them as representatives of the public. This indicates that the motivation of the politicians is not sincere but is driven by the need to triumph over their political opponent. Furthermore, the expression "attack" draws attention to the hostility among the political parties and their urge to win. The phrase "politically motivated" is blatant that the politicians have their own interest at heart and this description is a disapproving appraisal of them by MCMC.

Excerpt 4.10: MCMC1

So sometimes it is because of **jealousy over rental income**. The residents who don't get the rental income are **angry** and they **protest**

Similarly, MCMC's appraisal of the residents is negative as it suggests that the residents who protest have a hidden agenda (Excerpt 4.10: MCMC1). The phrase "jealousy over rental income" amplifies the specific economic motivation behind the residents' complaints and reduces their concern to downright pettiness. These residents who object to telecommunication structures are identified and activated with the expressions "angry" and "protest". This describes their emotion and reaction when their properties are rejected or overlooked by the telcos as siting locations for the

telecommunication structures in favour of their neighbour's properties. Generally the residents are either a positive or negative beneficiary or an affected social actor in this social practice. However, the residents whose properties are not selected by the telcos are now motivated for economic reasons and this group plays the role of an instigator. The residents who do get rental income are backgrounded as it hints that due to beneficialisation they do not protest.

4.2.1.3 Summary of MCMC's representation of 'self' and the 'other'

MCMC represents itself favourably as the most reliable organisation in Malaysia to speak on RF. It also emphasises its credibility as it works with world renowned bodies on matters pertaining to RF. Table 4.1 on the other hand condenses MCMC's representation of the 'other'.

Table 4.1: Summary of MCMC's Representation of the 'Other'

Social Actors	Level of Credibility	Level of Knowledge	Level of Motivation
MOH	Subordinated for playing secondary role		
Telcos	Public have negative perception of them		
Media	Sensationalises news on RF		
Activists	Indecisive		
Residents		Lack knowledge on RF	Motivated to protests for economic reasons
Politicians			Motivated to help residents for political reasons

Under level of motivation, both the politicians and residents are represented negatively for having hidden agendas namely political mileage and economic gain from

rental income. The local government has similar representation of both these stakeholder groups [see sub-section 4.2.3.4(b)].

4.2.2 MOH' Representation of 'Self'

MOH represents themselves in two ways: firstly as a monitoring and reviewing body and, secondly as a collaborator.

4.2.2.1 Representation of 'self' as a monitoring and reviewing body

Excerpt 4.11: MOH

The **MOH's Inter-Agency Advisory Committee** will **continue to monitor and review** the **latest scientific findings** and subsequently **advise** the government and the public.

In Excerpt 4.11: MOH, the representation and participation of MOH are activated with the articulation "MOH's" in reference to the Inter-Agency Advisory Committee. The committee is given prominence through identification as it signals that it is under the purview of MOH and is entrusted with the function "...to monitor and review ...and subsequently advise..." the government and the public. This kind of set-up is typical of a hierarchical bureaucracy with traditions of reporting to someone higher dictated by roles, rules, processes, plans, and reports. Nevertheless, the phrase "continue to monitor and review" suggests that decision making is ongoing through a systematic assessment perhaps based on guidelines. The phrase "latest scientific findings" denotes that the committee under MOH does play a pre-emptive role by keeping abreast with the most recent scientific developments connected to RF. It connotes a positive appraisalment of MOH's commitment in the health debates.

4.2.2.2 Representation of ‘self’ as a collaborator

Excerpt 4.12: MOH

MOH will **continuously collaborate** and **work closely with MCMC** to **disseminate information** to the general public on the effects of RF emission from the base stations and mobile phones. **MCMC was doing some great road shows in which we took part**

In Excerpt 4.12: MOH, the expressions “continuously collaborate” and “work closely” activate MOH not as an autonomous and isolated agency in this health debates but that of a partner specifically with MCMC. It stresses through specification that MOH is committed in collaborating with MCMC’s initiatives. The articulation “continuously collaborate” hints that the collaboration is regular and consistent and that this participation is active. This contradicts with the way MCMC ‘others’ them as subordinates. MOH’s participation is also defined through functionalisation with the phrase “disseminate information to the general public” suggesting that their role is to communicate news on RF to the public. The articulation “MCMC was doing some great road shows in which we took part” is an affirmative acknowledgement of MCMC’s efforts in organising these road shows in which MOH is a participant. This ‘self’ representation of MOH validates MCMC representation of them, as it is seen that MOH is playing a secondary role to MCMC in this collaboration.

Excerpt 4.13: MOH

The MOH **continues to maintain contact** with WHO through its participation as a member of the **International Advisory Committee (IAC)** of WHO’s International EMF Project to **ensure that Malaysia keeps abreast with the latest findings**

Likewise in Excerpt 4.13: MOH, MOH’s representation as active collaborator with WHO is specified through functionalisation with the phrase “continues to maintain contact with WHO”. It denotes that their role is to maintain contact with world

renowned bodies involved in RF and through identification as a member of IAC, their involvement in WHO's initiatives is clearly established. The importance of this participation is specifically spelt out by highlighting IAC's significance in WHO's International EMF Project. Additionally, the expressions "ensure that Malaysia keeps abreast" and "latest findings" draw attention to the aim of this collaboration which is to keep Malaysians informed of recent scientific developments on RF. MOH's representation of collaborating and aligning with both MCMC and WHO is possibly important to their 'self' representation as these organisations are powerful in their respective spheres locally and globally. Such collaborations add more credibility to MOH's image.

4.2.2.3 MOH's representation of the 'other'

MOH's representation of the 'other' is more guarded and confined to the residents and activists. The residents are perceived to be the affected participants and the activists are inferred to be the instigators. MOH 'others' them from two perspectives: their levels of knowledge and motivation.

(a) *Othering due to their level of knowledge*

Excerpt 4.14: MOH

Once at a talk in Johore, MCMC got up and spoke followed by me and then Malaysian Nuclear Agency but one spokesperson from the crowd stood up and said that **they did not want to hear us** but just want the tower removed because of **bad feng shui**. They did not want to get up every morning and look at the tower or see that **ugly structure**.

In Excerpt 4.14: MOH, the residents are activated as participants who are very vocal in their demands because of cultural factors. MOH 'others' the residents as being closed-minded and prejudiced to receiving any information from experts. MOH attributes this to the residents' deeply entrenched cultural beliefs. The phrase "bad feng shui" pin points the cultural reasoning behind their demands and though the identity of

the residents is backgrounded it can be inferred that they are ethnic Chinese. The specification of the experts from MCMC, MOH and Malaysian Nuclear Agency shows that these influential and authoritative agents are powerless in imparting knowledge to the residents. The pronoun “they” genericises the collective mentality of the ‘other’ and the phrase “ugly structure” confirms the prejudice of the residents towards these structures. Therefore, MOH’s representation of them hints that the residents’ may have a tendency to shut out knowledge on RF. As a result, it does not contribute to positive beneficialisation as they are unable to develop better understanding of RF.

Excerpt 4.15: MOH

I don’t know where the activists get their information from and I can’t vouch that the information is from a reliable source.

The activists’ role in the health debates is mitigated based on their level of knowledge because MOH doubts the reliability of their source of information (see Excerpt 4.15: MOH). The articulation “I don’t know where the activists get their information from” suggests that the activists’ source of information is unknown. Further, the phrase “can’t vouch” implies that MOH though knowledgeable on public health and RF is not in a position to guarantee that the information is from a “reliable source”. This not only casts aspersions on the credibility of the activists but most importantly it mirrors their level of knowledge as it indicates that they rely on untrustworthy information. Doubting the activists’ level of knowledge is a negative appraisal of them as it firstly, draws attention to their tendency to seek information that is not reliable and secondly, it suggests that they look for information that supports their own ideas on RF. This could be attributed to the activists’ ideological beliefs and strong prejudice which draw them to seek information that supports their points of view.

(b) *Othering due to their level of motivation*

Excerpt 4.16: MOH

Some **complain because of rental**, they **don't get the rental** for allowing telecommunication structures **while their neighbours get rental from telcos** as their building or vacant land is chosen for the structures to be erected.

MOH just like MCMC in sub-section 4.2.1.2(c), highlights that the residents' complaints are not sincere as they are motivated for economic reasons (see Excerpt 4.16: MOH). The residents are activated by the verb phrase "complain because of rental" which gives a negative connotation to the motive behind their protests. The repetitive use of the term "rental", explicitly identifies it as the root of the problem. The expressions "don't get the rental" and "their neighbours get rental from telcos" express the unhappiness felt by the residents whose properties are overlooked by the telcos as sites for telecommunication structures. This representation of the residents reinforces that their greed and jealousy over rental revenue are the motivating factors behind this contestation. The inference is that health reasons are merely used as a tool to add validity to their protests.

4.2.2.4 Summary of MOH's representation of 'self' and the 'other'

MOH do not refer to themselves as custodians but they see themselves as overseeing the RF situation locally in consultation with world bodies. But the word "custodian" used by MCMC in reference to MOH is forceful and of a higher status as it refers to a guardian or defender, while a monitoring and reviewing body and a collaborator suggests that MOH is only involved in some of the processes or duties of a custodian. Hence, MOH's representation of 'self' is mitigated to a lesser extent and this supports MCMC's 'othering' of them as a subordinate [see sub-section 4.2.1.2(a)].

MOH regards the residents and activists as being not knowledgeable about RF due to cultural beliefs and untrustworthy source of information. This suggests that the residents' resistance stems from their strong ideological beliefs or their stubbornness to accept another point of view. In terms of motivation, MOH sees the residents as being scheming because the denial of rental income from the telcos and not health reasons is the motivating factor behind their protests.

4.2.3 Local Government's Representation of 'Self'

The local government portray themselves as firstly, custodians of safety and compliance, secondly as non-experts in RF and, finally as a support agency to the other government bodies namely MCMC and MOH in issues on RF.

4.2.3.1 Representation of 'self' as a custodian of safety and compliance

Excerpt 4.17: MPPP

Yes, **we ensure** structure **safety and compliance** that is it harmonises with the surrounding and maintains **aesthetic values**. We look at the **tangible** part, that is the safety of the structure and, the **intangible** part is the harmonising and aesthetic part, especially in the World Heritage Centre or zone.

The representatives of the local government see their participation in the health debates as custodians of safety and compliance, and the articulation "ensure structure safety and compliance" activates this primary role through functionalisation (see Excerpt 4.17: MPPP). Additionally, the terms "tangible" and intangible" signify the different roles they play within their job scope. "Tangible" is used to represent their visible role in ensuring safety while "intangible" draws attention to their unnoticed role in balancing the visual appeal of the areas under their authority. This is specifically applicable in Penang as certain areas are gazetted as World Heritage Zone by UNESCO. The phrase "aesthetic values" extends their job functions beyond safety and compliance

and includes keeping the town/city visually appealing. This suggests that they understand their well-defined areas of jurisdiction and hence are well aware of their scope of power and influence.

Excerpt 4.18: MPSJ

We look only at guidelines and if all requirements are met for telecommunication structures.

In Excerpt 4.18: MPSJ, the specific function of the local government in the RF controversy is defined with the phrase “only at guidelines”. This reinforces that the local government’s power and jurisdiction are confined to safety and compliance and not in RF exposure and health. The repetitive use of the pronoun “we” in both the Excerpts 4.17 and 4.18 indicates that the local government agencies see themselves as an ‘in-group’ with shared knowledge, belief and values. This suggests that the role of the local government is similar regardless of their location.

4.2.3.2 Representation of ‘self’ as non-experts in RF

Excerpt 4.19: MBPJ

As part of **the agreement**, with MCMC, we look at complaints about telco structure and MCMC looks after the radiation part. It is **clearly stated**. We are **not professionals in radiation**, we cannot give any talk about radiation. If you say “*tiada*”, *tiba tiba orang kata ada*” ” (if we say no and if people confirm there is radiation after checking), **whose faces are going to turn red**

The role of the local government in the RF conflict is established in Excerpt 4.19: MBPJ. The phrase “the agreement with MCMC” specifies and identifies MCMC as the other party in the contract, and the articulation “clearly stated” indicates explicitly that there is separation of duties which is mutually agreed upon. The functionalisation of each party to the agreement is highlighted: the local governments’ areas of authority,

control, and responsibility are distinctly confined to “complaints about telco structure” and, MCMC looks at “the radiation part”. The phrase “the radiation part” is unclear, but it can be linked to MCMC’s representation of ‘self’ that they are the trusted body on RF in Malaysia (see sub section 4.2.1.1). Furthermore, the expression “not professionals in radiation” indicates that the local government is not qualified to speak on RF related issues. So the articulation “whose faces are going to turn red?” indicates that the local government as a respectable agency does not want to be embarrassed if information released by them on RF is incorrect. The role of the local government is again clearly established by way of functionalisation as it infers that they do not want to be embroiled in any conflict that they are not qualified to comment on.

Excerpt 4.20: MPSJ

...we are **not the experts on radio frequency** but we discuss on the application to **see if they meet the guidelines or not**”.

Similarly, in Excerpt 4.20: MPSJ, the articulations “not the experts on radio frequency” and “see if they meet the guidelines or not” once again reaffirm by functionalisation that the primary role of the local government is to uphold the adherence of guidelines and that they are unqualified to make decisions regarding RF. The word “but” also emphasises the local government’s legitimacy as social actors who play an active role as upholders of guidelines and regulations, while the preceding clause mitigates their role pertaining to RF as they are “not the experts on radio frequency”. The key here is the juxtaposition of both activation and passivation in order to legitimise themselves as local authoritative bodies yet distance themselves from the responsibility of the RF issue.

4.2.3.3 Representation of ‘self’ as support agency to the other government bodies

Excerpt 4.21: MPPP

The council is **fully aware** of the initiatives taken by MCMC on these awareness campaigns and we **fully support them**.

The local government activates themselves as being aware and supportive of the initiatives undertaken by MCMC (see Excerpt 4.21: MPPP). The repetitive use of the term ‘fully’ signifies firstly, the acknowledgement of MCMC’s efforts and secondly, the high level of commitment they have in working with MCMC in addressing the issue. Again the representation is such that it seems as if the local governing bodies are in an organisational structure where their role is that of ‘support’ rather than of leading the initiatives. MCMC is activated with the phrase “taken by MCMC” for taking the initiative, although the sentence structure is passive as they are still the doer while the local government is the ‘supporter’ of MCMC’s initiatives. The local council is activated but in a lesser degree as they only play a supporting role in the initiatives, while MCMC’s activation is more specific as they are the agent responsible for these awareness programs.

4.2.3.4 The local government’s representation of the ‘other’

The ‘other’ for the local government is MCMC and MOH though they are part of the same stakeholder group and this could be attributed to the dissimilar objectives of the respective departments/agencies. The ‘other’ also includes the telcos, the media, the activists, the residents and the politicians.

(a) *Otherring due their level of credibility*

Excerpt 4.22: MPPP

Here, MCMC and the telcos **need to** “turun padang” (go and meet the people on the ground) through these awareness campaigns to reach out to the residents and explain to them and give them the correct information to reduce their fears on radiation”. Both MCMC and the telcos **must play a big role in these awareness campaigns**. As for the Ministry of Health, **I’m not too sure of their role.**” In fact, MCMC and the telco companies should not just leave the **dirty job** of dealing with the protesters to the local council. They **should** play an active role in educating the public and creating awareness on this issue.

MCMC’s, MOH’s and the telcos’ participation is mitigated in Excerpt 4.22: MPPP, as these organisations are seen to be not proactive enough in addressing the issue. This is established through the expressions “need to”, “should” and “must” as it highlights the conditions that they have not fulfilled in tackling this issue. It is implied that MCMC’s and the telcos’ initiatives lack rigor as the message is not filtered down to the residents effectively in alleviating their fears on RF. They are blamed for not addressing the concerns of the protestors and for shifting this responsibility to the local councils. With the phrase “not too sure”, MOH’s role is toned down as it infers that their position in the health debates on RF is unclear.

In addition, the phrase “dirty job” signifies that dealing with protestors is an unpleasant job which the local council is forced to do alone. So the local government is activated as the sole and reluctant agent who is left to deal with the protestors. This puts MCMC, MOH and the telcos in a bad light as they are important social actors in this controversy. MCMC and MOH are important and influential government bodies, while the telcos are the main players in this conflict as they are responsible for these structures which are the root cause of this problem. Therefore, the local council feels that these powerful bodies cannot be trusted to pull their weight together to address this problem.

Instead, they are represented as shirking their duties which is an unfitting depiction of such respected organisations.

Extract 4.23: MPPP

The media too plays an important role and must report accurately. They **should** not just **highlight the negative aspect** of this issue but give an unbiased view of the issue. **The media of course want stories so they give more prominence to the residents** and report what the residents say

In Excerpt 4.23: MPPP the phrase “important role” activates the media’s participation in this controversy and the expression “must report accurately” draws attention to the media’s functionalisation specifically the need for impartial reporting. In support, the terms “must”, “should” and “accurately” suggest that the media needs to be neutral in their reporting style giving fair coverage to all the stakeholders. Further, the articulation “The media of course want stories so they give more prominence to the residents” suggests that the media functions unfairly by publishing one-sided reports as they give greater importance to the residents’ complaints.

The expression “important” indicates that the media plays a meaningful role in shaping the residents’ perception on RF and therefore they “should not just highlight the negative aspect”. This portrayal is a negative appraisal of the media’s role. The inference is that the media wants to increase circulation and profits by playing off prejudice and highlighting the fear of RF on the public. It also suggests that the media has the propensity to publish scare stories because fear-based news preys on the anxieties of the public and sells newspapers (Lofstedt, 2010, p. 113). The media is the most powerful communication tool in creating awareness and shaping public attitude, hence the representation implies that they must be credible and objective in their reporting. The presumption is that the media must be a positive agent of change rather than play the role of an instigator.

(b) *Othering due to their level of knowledge*

Excerpt 4.24: SSP

Generally the people are **very educated** but the NGOs here are **very vocal**. **If the NGOs can prove their concerns based on facts** then the departments concerned can take the necessary action to verify the concerns and to take appropriate actions. These protests groups must learn to accept that these structures are **part of modern living and is a convenience**

The activists are activated as participants who play an instigating role in the health debates on RF (see Excerpt 4.24: SSP). The spokesperson qualifies this assumption with the phrase “very vocal”. This articulation depicts the activists as being very forceful, loud and opinionated in the discourse on RF and its impact on health. Though the residents are described as being “very educated” their role is mitigated with the use of the term “but” to infer that they are influenced by the NGOs’ rhetoric. The NGOs are subjected as unknowledgeable yet opinionated with the phrase “if the NGOs can prove their concerns based on facts” as this suggests that their arguments may not be based on factual information but on bias views. Further, the phrase “part of modern living and is a convenience” suggests that the NGOs knowledge on RF is outdated and as they are unmindful of the integral role RF plays in telecommunication and modern living.

Excerpt 4.25: SSP

People are not scared if the structure collapses but they are **scared** of RF. The residents are **not ignorant but** need to be given the right information. I think it is **fear instilled by the word radiation** and this makes people think it is **harmful** and therefore they get **afraid**.

The local government in Excerpt 4.25: SSP again paints the residents’ as beneficiaries who do not have the correct information on RF and that as a result, they are unduly worried. The spokesperson draws attention to the anxiety of the residents towards RF through identification of phrases like “scared”, “harmful” and “afraid”.

However, the term “not ignorant” is a positive appraisal of the residents as it highlights that the residents are not illiterate but instead are uninformed about RF. The word “but” draws attention to the belief that beneficialisation can take place if factual information is given to them to correct their ignorance on RF.

Excerpt 4.26: MPSJ

I don’t think they are unreasonable but they have fears and they need to be educated. They need to be told that the RF standards set by WHO and ICNIRP are acceptable and not too high. Health is important but these people need to be educated that their fears are unfounded

In Excerpt 4.26: MPSJ, the phrase “don’t think they are unreasonable” indicates through identification that the residents are receptive to information on RF if it is conveyed logically based on facts and figures. The expressions “need to be educated” and “need to be told” indicate that the residents are currently not knowledgeable about RF. Again, it is presumed that beneficialisation can take place if the residents are given the right information. Further, the phrase “fears are unfounded” mitigates the residents’ distress over RF as being unsubstantiated by facts as it inferred that they are unaware that the RF standards are set by WHO and ICNIRP, and that Malaysia uses the same standards. The local government feels that such clarification will assure the residents that public health has not been compromised. This representation may seem simplistic as it suggests this knowledge may affect the residents’ views on RF positively.

Excerpt 4.27: MBPJ

In my point of view, *kita tengok dari kaum* (we look at race) and age. **The Chinese do not want towers to be erected in front of their house, feng shui problem. Malay people** I *nampak* they *tak berapa kisah sangat*, (I notice the Malays are not very bothered) but Chinese people a lot of complains. **The young people maybe around 40 and below** they will not complain **but those aged above 40** usually they will complain because I believe **one person initiates and the older people just follow.**

The residents are inferred to have varying levels of knowledge based on their race and age (see Excerpt 4.27: MBPJ). The articulation “The Chinese do not want towers to be erected in front of their house, feng shui problem” represents the Chinese as active participants through identification by race and they are viewed to be more aggressive in voicing their dissatisfaction for cultural reasons. The phrase “do not want” is a terse expression to signify that they strongly oppose telecommunication towers sited in front of their homes. Again, the term “Malay people” identify the Malay community by race for being less bothered about these structures and the impact it has on their health. These stereotypes may be based on assumptions that the Chinese are strong in their cultural beliefs, industrious and vocal, while the Malays though culturally sound are more complacent and laid back and, therefore are not concerned or knowledgeable about the impact of RF on their health. It also suggests that perhaps the Chinese are so strong in their beliefs that they do not listen to sound reasoning and are not open to accepting knowledge on RF that goes against their cultural values.

Also the phrases “around 40 and below” and “above 40” imply though identification by age that there is a distinct difference in the way these two age groups view the health debates on RF. The residents aged 40 and below are perceived to be more progressive and knowledgeable and therefore view RF positively while the older residents above 40 are said to be more conservative and closed to receiving information on RF. Further the expression “older people just follow” genericises that the residents aged 40 and above

are gullible and can be easily influenced to oppose telco structures for health reasons. The older residents are painted as traditionalists who refuse to update their knowledge on RF and hence are portrayed in a negative way as their knowledge on RF is limited.

(c) *Otherring due to their level of motivation*

Excerpt 4.28: MBPJ

The rental is good and runs to a few thousand ringgits depending on the structure **so it is true that rental is factor**. If I am not mistaken the rental that the company or the telecommunication company gives is approximately RM1,600 to RM2,000. **So who does not want money?** This **leads to jealousy**.

In Excerpt 4.28: MBPJ, the phrase “so it is true that rental is a factor” highlights the hidden agenda behind the residents’ protests. Hence, the rental received from the telcos is activated as one of the reasons for the discontent over siting of telecommunication structures. The quantum of the rental income is specified and surmised to be the motivating factor. The residents who receive rental income are backgrounded as the inference is that this monetary incentive silences them. On the other hand, those who do not receive this income are activated as they vent their displeasure by complaining. The phrases “The rental is good” and “leads to jealousy” are specified as the reasons behind the residents’ complaints. Furthermore, the expression “who does not want the money?” signals that greed prompts the residents to protest. Therefore, the motivating factor behind the complaints is rental while RF is essentially a scape goat.

Excerpt 4.29: MPPP

The politicians are **using this issue to garner support from the public**. However, whether they are **for or against these structures** depend on **which political party they are aligned to**. **We can't blame them really because it is part of their job**.

Similarly, the politicians are activated and identified as opportunists who are using the public to gain political mileage (see Excerpt 4.29: MPPP). The phrase “using this issue to garner support” evokes the true intention of the politicians and the articulation “from the public” show that the public are used as pawns in this contestation. Again the phrases “for or against these structures” and “which political party they are aligned to” show that the politicians are indecisive in the health debates. Their stand on RF is dictated through circumstantialisation that is their political affiliation and most importantly if it makes them look good against their political foes. The articulations “We can't blame them” and “it is part of their job” infer that being manipulative and capitalising on the situation comes with the job and these articulations hint that the politicians are unscrupulous and genericise this as common knowledge. The pronouns “we” and “their” are used to distance the politicians as the ‘other’ specifically in reference to their political manoeuvring to win votes. Hence the politicians’ role in this health debates is construed as being politically motivated rather than out of genuine concern.

4.2.3.5 Summary of the local government's representation of 'self' and the 'other'

Similar to MCMC and MOH, the local government's representation of itself emphasises on the well-defined roles it plays in the health debates on RF exposure which are custodian of safety and compliance, non-experts on RF, and support agency to MCMC and MOH. In contrast, the representation of the other is less favourable (see Table 4.2).

Table 4.2: Summary of Local Government's Representation of the 'Other'

Social Actors	Level of Credibility	Level of Knowledge	Level of Motivation
MCMC	Not proactive so perceived to be less credible		
MOH			
Telcos			
Media	Sensationalises news on RF and reports on RF are biased.		
Activists		Arguments not grounded on factual information on RF	
Residents		<ul style="list-style-type: none"> • Incorrect information • Chinese influenced by cultural beliefs • 40 years and above have low knowledge on RF 	Motivated to protest for economic reasons.
Politicians			Motivated to help residents for political reasons

Table 4.2 shows that, the local government see MCMC, MOH and the telcos as powerful bodies that are not doing enough in dealing with the conflict. This is a dent in their credibility as it infers that these three significant stakeholders are not upholding their responsibility. The media is also 'othered' as not credible because they sensationalise news on RF. This may not be precise as there is also a presumption that the media is motivated to hype up news reports to increase circulation. This is reiterated by Cookson (2010) who states that the primary role of the media is to entertain,

interrogate, expose and ultimately sell papers. Additionally, the table highlights that the activists are not knowledgeable in RF as their arguments are not based on factual information and this is similar to MOH's representation of them [see sub-section 4.2.2.3(c)]. Likewise, age, misinformation and cultural beliefs are identified as influencing factors in the residents' low level of knowledge. This is also reaffirmed by MCMC and MOH [see sub-sections 4.2.1.2(b) and 4.2.2.3(a)].

In terms of motivation, all members of this stakeholder group agree that jealousy over the rental income fuels the residents' protests [see sub-sections 4.2.1.2(c), 4.2.2.3(b) and 4.2.3.4(c)]. In addition, the local government concurs with MCMC that the politicians are opportunists for using the health debates on RF for political mileage [see sub-sections 4.2.1.2(c) and 4.2.3.4(c)].

4.2.4 Summary: Government Departments/Agencies Stakeholder Group

The findings for this stakeholder group indicates that the representation of 'self' is always positive and differs based on the areas of jurisdiction but the 'other' in the same stakeholder group is mostly represented in terms of credibility. This confirms Van Dijk's (1995) and Wodak's and Meyer's (2009) view that speakers of one group will generally tend to present themselves or their own group in positive terms, and other groups in negative terms.

Credibility is determined by trust, commitment and competence and each agency under this stakeholder group is clear about their responsibility, power and authority in addressing the RF conflict. This is evident as each agency represents themselves as a trusted body on RF, as a monitoring and supporting agency to others in the coalition, and as custodians of safety and compliance. Yet, they are represented as the 'other',

though they are part of the same stakeholder group, for lack of commitment. Obviously, trust, which is the foundation for risk communication initiatives, is lacking as the various social actors in this stakeholder group lack honesty and openness in dealing with the RF conflict.

On one hand, the government bodies validate the roles they play in dealing with this contestation. On the other hand, they deflect blame by accusing the 'other' for not stepping up to the plate in addressing the public's concern on RF exposure from telecommunication structures. According to Hansson (2015) deflecting blame legitimates some actors and disempowers/delegitimises others. This infers that blame avoidance by these government decision makers who are interdependent in this contestation inhibits effective risk communication.

4.3 Telecommunication Companies (Telcos) Stakeholder Group

The telcos' 'self' representation are as a collective whole rather than individual organisations because they have the same narratives.

4.3.1 Telcos' Representation of 'Self'

The telcos are responsible for the base stations and telecommunication structures and they represent themselves solely as a law abiding and compliant group.

4.3.1.1 Representation of ‘self’ as a compliant group

Excerpt 4.30: Telco A

So we do follow a lot of rules to maintain the industry benchmark created by them. We also have our own standards and we require all our partners and suppliers throughout our value chain to adhere to these standards. We follow what is determined by the standards, the DiGi standards, IEEE standards, MCMC standards, the WHO standards

In Excerpt 4.30: Telco A, the telcos are activated with the phrase “we do follow a lot of rules” to suggest that they operate in an industry with rigid guidelines. This is also evident through in the expression “maintain the industry benchmark” as this articulation highlights that they need to uphold certain specified standards of operation in their line of business. It infers that they are assessed by the industry’s own best practices. In addition, the phrase “our own standards” shows through possessivation that the telcos self-regulate to ensure there is little room for error or wrong doings. Also, through specification of the DiGi standards, IEEE standards, MCMC standards, the WHO standards it is implied that the telcos do not just comply with their own standards but with other guidelines too that are set by the Malaysian and international bodies on RF. Further the words “require” and “adhere” are associated with obligation and rules drawing attention to the tight conditions under which they operate. The phrase “throughout our value chain” also indicates that there is check and balance in all aspects of their business. They hint that though they are profit-orientated there is good corporate governance as they comply with various standards set on RF.

Excerpt 4.31: Telco A

But typically if we talk about emission levels we are **very, very, low below 1% of the set standards** that in itself for us is like we meet these levels so we are okay as we are below the level but if you want to talk about the **actual levels** then you have to **check with International Commission for Non-ionizing Radiation Protection** on how they come up with these levels.

The telcos' 'self' representation as a compliant group is also evident in Excerpt 4.31: Telco A. The phrase "very, very, low" emphasises that they are operating with RF emission levels that are lower than the set standards. Similarly, the articulation "below 1% of the set standards" indicates through specification that they are operating more cautiously than required and this is also attested by MCMC (see 4.2.1.1). However with the phrase "actual levels" and verb phrase "check with..." the telcos associate the RF standards by identification with ICNIRP, the authority responsible for setting the RF limits. This association is highlighted as there are contestations that the RF limit set by ICNIRP is high. Therefore, the telcos are distancing themselves from the set standards to make it known that they are not involved in setting international RF guidelines but that they are merely complying with the standards and regulations set by the relevant authorities who are experts in this field.

4.3.2 Telcos' Representation of the 'Other'

The 'other' for the telcos is the other stakeholders in general and MOH, the residents, and the politicians in specific.

4.3.2.1 Othering due to their level of credibility

Excerpt 4.32: Telco B

The stakeholders can come together but nothing will be resolved because each one has **their own agenda. It is not just perception but ethics as well** that is involved here. Radiation is the **scapegoat**.

In Excerpt 4.32: Telco B, the stakeholders in general are portrayed as being deceptive and manipulative. It is implied that they are not looking for solutions to the problem but instead are stumbling blocks to any kind of resolution. With the articulation “own agenda” it is inferred that the stakeholders have underlying motives and are therefore not sincere. In addition, the possessive pronoun “their” indicates that the telcos are distancing themselves from most of the stakeholders as they are scheming and lacking in credibility, whereas the telcos are committed and adheres to set guidelines. The word “but” in the articulation “It is not just perception but ethics as well” emphasises that the ongoing health debates does not only stem from conflicts of opinions but from lack of integrity too. The expression “the scapegoat” genericises that the word radiation is exploited by irresponsible stakeholders who have ulterior motives. Hence, the telcos are appraising all the other stakeholders negatively as it is inferred that the agencies entrusted to help find a solution, and the affected residents are untrustworthy.

Excerpt 4.33: Telco A

MOH **should** play a **bigger role. They have a section for radiation. We have a rep** from there that comes for our session as well. She is **one of the doctors** from there and she actually gives educational talks on EMF **besides that there’s nothing much**. People we work closely with are MCMC, at the central and regional level and WHO.

In Excerpt 4.33: Telco A, MOH is regarded as being not proactive. The expressions “should” and “a bigger role” subject MOH as being subservient despite having the power and the resources to play a significant role. This is especially so as the

articulation “They have a section for radiation” specifies through functionalisation that MOH has a unit to deal solely with radiation. The phrases “a rep” and “one of the doctors” indicate that the personnel assigned for the sessions with the public is of a lower rank thereby indicating that MOH does not place importance to this ongoing conflict. The phrase “besides that there’s nothing much” stresses that MOH does little besides giving educational talk. This suggests that MOH lacks the professional will and integrity to bring about social change despite being an important government body in-charge of public health. Similar observations are made in sub-sections 4.2.1.2(c) and 4.2.3.4(c) by MCMC and the local council.

In comparison, MCMC is appraised positively and identified as a dependent and reliable body with the articulation “work closely with”. This representation of MCMC being more credible than MOH could also be based on the fact that the telcos are more aligned and dependent on MCMC who play the powerful role of the regulator in the telecommunication industry.

4.3.2.2 Othering due to their level of knowledge

Excerpt 4.34: Telco A

The concerns with the residents are they see **antennas**, they see **towers**, than they are worried. That is their concern. They are **not concerned about the technology** being used.

The residents’ role in the health debates is mitigated as their fear on RF comes from the sight of the physical structures rather than rational logic (see Excerpt 4.34: Telco A). Accordingly, the sight of antennas and towers are identified as the reason for this fear. The phrase “not concerned about the technology” infers through specification that the residents have their own perception of RF and that they are not receptive to increasing

their knowledge on technology specifically RF. MCMC has also ‘othered’ the residents for the same reasons [see 4.2.1.2(b)]. The telcos hint that the residents’ bias views on RF are a hindrance as they are not knowledgeable enough to view RF objectively.

Excerpt 4.35: Telco B

...there are instances when towers are built but the dishes are put there but it’s not switched on and they say they already have a headache. But the towers are not switched on it is not operational so how do they get the headache? No definite reason based on facts is given. They simply say that they heard this and that. So it is beyond radiation, only it is **peoples’ perception and one-sided view, not based on facts and figures**.

Similarly, the phrases “people’s perception”, “one-sided view” and “not based on facts and figures” are negative appraisements of the residents (see Excerpt 4.35:Telco B). The expression “one-sided view” also subjects the residents as being prejudiced to receiving new information. The telcos indicate that the residents view themselves as the affected party and have unreasonable claims and requests, like decommissioning uninstalled structures because these demands are not backed by sound arguments.

Excerpt 4.36: Telco B

...when we go for these protests **the politicians are standing there and half the time they don’t understand** what is the situation.

Likewise in Excerpt 4.36: Telco B, the politicians’ role is mitigated as they are perceived to be ignorant about RF. The phrase “are standing there” describes the politicians as being there physically with the residents as it is expected of them in their line of duty. The expression “half the time they don’t understand” is a negative appraisal of the politicians indicating that they are not knowledgeable about RF. This infers that the politicians’ level of knowledge on RF is questionable yet they support the residents to remain politically relevant and popular so as to be re-elected. As

elected representatives of the people they empathise with the residents so as to be part of the 'in-group'.

4.3.2.3 Othering due to their level of motivation

Excerpt 4.37: Telco B

When **competition** came in the **problem** started, like I mentioned about **rental and money**. The **problem** was not so great when only Telekom Malaysia, when Celcom in the 1980s was providing the service.

The residents' are backgrounded in reference to rental income (see Excerpt 4.36: Telco B). The telcos acknowledge that competition within the industry is a contributing factor in the health debates and the repetitive use of the term "problem" highlights this competitive rivalry. In a bid to increase market share the inducement given to property owners in the form of rental is intensified. This triggers greed and animosity among the other landlords whose properties have not been chosen for the location of the telecommunication structures. The phrase "rental and money" infers by specification the motive behind the residents protests. It implies that this economic factor plays a role in whether the residents' respond positively or negatively to the health debates on RF. This rental income is resonated by all members of the Government departments/agencies stakeholder group as the motivating factor behind the residents' protests [see sub-sections 4.2.1.2(c), 4.2.2.3(b) and 4.2.3.4(c)].

Excerpt 4.38: Telco A

...one man was very vocal but one week later he called me to say that if we want to settle the problem he can help us solve the problem by using his shophouse. So you see it is not about radiation or health risks **but something else**. **Some don't care** of the radiation but it is **all about money**.

In Excerpt 4.38: Telco A, the phrase “but something else” shows that there is something more sinister than RF in this health debates. The articulation “Some don't care” and “all about money” abates the role of the residents as their motive is perceived to be monetary gain. This negative appraisal of the residents infers that they protest for financial advantage and not out of genuine concern for their health.

4.3.3. Summary of the Telcos' Representation of 'Self' and the 'Other'

MCMC, the residents, politicians from the ruling state government, and the media represent the telcos as having low credibility (see sub-sections 4.2.1.2(a), 4.4.2.1, 4.5.1.2(a)], 4.7.2.1). However the telcos portray themselves as an organisation that follows all rules and guidelines and blames all other stakeholders as having their own hidden agenda in the health debates on RF exposure (see Table 4.3).

Table 4.3: Summary of Telcos' Representation of the 'Other'

Social Actors	Level of Credibility	Level of Knowledge	Level of Motivation
Other stakeholders in general	Have ulterior motive		
MOH	Credible but inactive		
MCMC	Dependent and reliable		
Residents		Low knowledge on RF	Motivated to protest for economic reasons.
Politicians		Low knowledge on RF but support residents for political gain.	

Table 4.3 also reflects the telcos positive appraisal of MCMC. This signifies a paternalistic relationship between them and MCMC who holds the powerful position as the regulator of the telecommunications industry in Malaysia. Fairclough (2014) emphasises that there is “power behind discourse rather than just the power in discourse” (p. 2), and in this context MCMC which is powerful in status, shapes and controls the telcos’ discourse and interactions with them.

In terms of level of knowledge, the residents’ are deemed to have low knowledge because of their negative perception of RF. The politicians too are inferred to have low knowledge on RF as their blind support for the residents is not backed by their own understanding of RF. Instead, it is to gain the constituents’ votes for re-election. This highlights that they have a hidden agenda in this conflict. In addition, the motivating factor for the residents’ protests once again identified as rental income and not RF.

4.4 Residents Stakeholder Group

The residents are generally the affected party in this contestation but they have two (2) different angles to their ‘self’ representation: opposing each other as victims and wrong-doers. This relates to the formation of an ‘in-group’ and ‘out-group’ within this stakeholder group.

4.4.1 Residents’ Representation of ‘Self’

The residents’ represent themselves collectively as helpless and as passive citizens with low level of knowledge and involvement. However, they also see themselves playing different roles as winners and losers in this health debates. The residents who are landlords and earn rental income benefit from additional earnings and are portrayed as wrongdoers. However, the other residents who live within the vicinity and are

exposed to RF are represented as victims as they are affected in a negative way by the actions of the landlord and the telcos.

4.4.1.1 Representation of ‘self’ as helpless public

Excerpt 4.39: Resident E

To whom can I complain to? What can I do? It doesn’t look like I have **any choice** on the matter. **Complaining is out of the picture.** I know **this thing** is unhealthy and inappropriate to be erected in residential area, but **most other residential areas have these towers too.** There’s **no one to complain to or talk to** regarding this matter. There’s **nothing we can do.** So **I** will just leave it as it is. We’re **voiceless** to them.

In Excerpt 4.39: Resident E, the residents view themselves as being helpless, marginalised and voiceless. This representation is based on their perception that they are alone in this fight against telecommunication structures sited in their neighbourhood. The phrases “whom can I complain to?” and “What can I do?” highlight that the residents are powerless. Further, the phrase “any choice” expresses that they have no options but to accept these structures as they have no influence in the decision making. The articulation “complaining is out of the picture” denotes that expressing their dissatisfaction is not an option probably because it will fall on deaf ears. Referring to the structure with the expression “this thing” specifies their deep seated frustration and the phrase “most other residential areas have these towers too” genericises that these structures are a common sight and as such they have no option but to accept it in their neighbourhoods. The articulation “no one to complain to or talk to” is an indication that firstly they have no avenue to complain and secondly that these structures are erected without consultation.

Also the phrase “nothing we can do” specifies that the residents are defenceless against the telcos and the other approving authorities. The expression “voiceless” identifies the residents as being unrepresented, suppressed and ignored. The pronouns “we” and “them” in the sentence “We’re voiceless to them” suggest that the residents are marginalised and regarded as an ‘out-group’ by the ‘them’ who are the more powerful ‘in-group’ comprising the government authorities and the telcos. Further the pronouns “we” and “I” in the articulation “There’s nothing we can do. So I will just leave it as it is” suggests that the residents takes comfort in claiming solidarity but feel alone and helpless in this contestation. Therefore, the residents do not have a ‘self’ representation but instead are representing themselves as the ‘other’ because they are marginalised and are the underdog.

4.4.1.2 Representation of ‘self’ as passive citizens

Excerpt 4.40: Resident C

My main concern of the tower is the radiation to my house because when I spoke to my neighbours they were **ignorant** about this **but now they are concerned**. They were not until I told them the **truth**. They were **flabbergasted**. **Not many people** know about the matter. Plus, **only a handful** of them are conscious of the health effect of RF

In Excerpt 4.40: Resident C, the majority of the residents is portrayed as being unconcerned about RF and with the phrase “ignorant” to indicate that they are uninformed. The articulation “now they are concerned” infers that some of the residents become aware of RF only after being told the “truth”. The term “truth” suggests that the residents have been cut off from reality and do not have any factual information on RF while the expression “flabbergasted” emphasises the shocked reaction of the otherwise unconcerned residents. The “truth” also indicates through certainty a strong one-sided view of RF which is subjective. The phrases “only a handful” and “not many people”

show that only a minority are aware of RF while the majority are oblivious of this ongoing contestation.

Excerpt 4.41: Resident B

I'm interested because these structures are all around my office but **the majority of residents** are **unaware** about RF. **They** are only aware **when they** are told and **then they** get worried.

The residents are again portrayed as being ignorant of RF in Excerpt 4.41: Resident B. The expressions “the majority of residents” and “unaware” suggest through genericisation that the bulk of the residents are unconcerned about RF and detached from the ongoing conflict on RF. However, the words “when” and “then” signal the circumstances under which the residents become mindful of RF. The pronouns “I” and “they” are used to differentiate the ‘in’ and ‘out’ group within the residents, that is those who know about RF and the majority who are unaffected by it.

This differentiation of the ‘in-group’ and ‘out-group’ within this stakeholder group based on their level of awareness and knowledge is significant as it draws attention to the division in the ‘self’ representation of the residents: the minority who are aware of RF and who are active participants in the health debates and, the majority who are uninformed and not concerned about RF. The residents’ representation of ‘self’ is not based solely on their low level of knowledge on RF but also on their low level of involvement in the health debates. The majority of the residents are perceived to be playing a passive role until they are drawn into these health debates as an affected party or when they are informed of RF.

4.4.1.3 Representation of ‘self’ as wrongdoers/victims

Excerpt 4.42: Resident A

I heard minimum, one tower is RM880. You install six, RM5280 month. No sweat just put the structure on the rooftop, every month you collect five thousand two hundred clean. At **whose expense**? At **our expense** of course. **We** are exposed to radiation 24 hours a day, 7 days a week, 365 days a year, all year round, every year until the day **we** die

The residents’ representation of ‘self’ is divided between those who receive rental from the telcos and those who do not gain monetarily but instead are exposed to RF from these telecommunication structures that are erected on their neighbour’s homes. The residents who receive rental from telcos are activated as wrongdoers who are lured by the rental income. On the other hand, the residents who do not gain financially from this transaction but are exposed to RF are represented as victims (see Excerpt 4.42: Resident A). The phrases “minimum one tower is RM880” and “install six, RM5280 month” specify the amount of rental received by the residents and the expression “no sweat” alludes that this income is earned effortlessly by the landlords. The repeated use of the phrase “whose expense” signifies through circumstantialisation that the landlords who receive the rental do so by inconveniencing the other residents by exposing them to RF and the phrase “our expense” stresses through possessivation that the landlords who do gain financially do so by victimising the other residents. The pronouns ‘you’ and ‘we’ differentiate the wrongdoers from the victims highlighting that the latter face exposure to RF, while the former (landlords) earn revenue.

Excerpt 4.43: Resident C

And **they earn a lot of money from renting** the building for the telco tower. So, that is why **money comes first, concerns later**

In Excerpt 4.43: Resident C, the residents who earn rental income is again activated with the phrase “they earn a lot of money from renting”. The landlords are represented through circumstantialisation as participants who gain from the rental revenue as they are paid by the telcos for the siting of telco towers. The pronoun “they” shows that the resident is distancing herself from the landlords. The phrase “money comes first, concerns later” infers that the cash in-flow into the landlord’s coffers is more attractive than the anxieties associated with RF exposure.

This division in the representation of the residents draws attention to the ‘in’ and ‘out’ groups within this stakeholder group. The ‘in-group’ is deemed to be powerful as they gain financially by being in cohorts with the telcos. The ‘out-group’ is represented as powerless because firstly, they are victims who receive no financial compensation for being exposed to RF and secondly, they believe that RF exposure is harmful and that it will eventually damage their health. It also infers that the victims are excluded from the discussion between the telcos and the landlords.

4.4.2 Residents’ Representation of the ‘Other’

The ‘other’ for the residents is the media, the telcos, MOH and the experts and the representation is looked at from only two perspectives: level of credibility and level of motivation. This indicates that the ‘other’ is professionals who are knowledgeable in their field. Furthermore, the ‘self’ representation of the residents’ look at their own level of knowledge on RF as they are the intended target audience and beneficiaries of the awareness programs on RF.

4.4.2.1 Othering due to their level of credibility

Excerpt 4.44: Resident C

It was actually the **Chinese dailies** that **alerted me** on the issue when people in Ipoh started organising boycotts in front of the telco tower in a school. It was **very good**, because **they are telling Malaysians how harmful it is**, and it was also **very good** that the Chinese newspapers covered the news. **The Chinese are more aware now and are more vocal** when telco towers appear in their residential areas. I think I started to know more from the internet and **Chinese newspapers**

The Chinese print media is activated by functionalisation as the phrase “alerted me” signifies that the residents are generally uninformed until the issue is covered by the media (see Excerpt 4.44: Resident C). The repeated expression “very good” appraises the media positively for playing its role effectively in covering news on RF. The articulation “they are telling Malaysians how harmful it is” emphasises the function of the media in creating awareness on RF and the expression “harmful” hints that the media slant is possibly not objective. Nevertheless, through identification the Chinese community is said to have benefited from these news reports as they have become more conscious of RF. The media is also attributed for giving the community voice and this is evident with the phrase “more aware now and are more vocal”. This suggests that the Chinese media is more trustworthy and dependable as they have empowered the community to be more pro-active in the health debates compared to the other races in Malaysia.

Excerpt 4.45: Resident C

I want **the telcos** to be **more considerate** in the sense that they **must make sure** that the radiation emitted will not be harmful in any way to health of the people living in the **closest proximity**. **At the moment**, I have **no confidence in them**.

In contrast, in Excerpt 4.45: Resident C, the telcos are represented as being unsympathetic towards the residents. The phrase “more considerate” infers by way of

functionalisation that they operate in a callous and irresponsible manner. The expression “must make sure” infers that the telcos cannot be trusted enough to safeguard public health as the term “must” gives the impression that telcos presently disregard guidelines. In addition, the phrase “closest proximity” suggests through specification that structures are erected close to public dwelling putting the residents in harm’s way. This perhaps indicates that the telcos have violated the guidelines on siting of telecommunication structures. As such, articulation “no confidence in them” indicates that the telcos’ current conduct renders them untrustworthy.

Excerpt 4.46: Resident A

Put it this way lah...whatever this **Ministry of Health** come and talk, it’s **all talk** ok. But where is it really coming from? **Are you sure they are really telling us that it doesn’t affect us?**

Similarly, in Excerpt 4.46: Resident A, MOH is represented as being ineffective. The phrase “all talk” infers that MOH’s talks on RF are ineffective as it is canned speeches which lack conviction. In addition, the articulation “Are you sure they are really telling us that it doesn’t affect us?” show that the residents are doubtful of MOH’s intentions and sincerity. This hints that there is lack of trust in MOH as the talks are deemed to be mere propaganda to support the influential telcos who are perhaps the government’s cash cows. Again the residents are identifying and differentiating themselves as the oppressed ‘out’ group and MOH as being part of the elitist inner circle. This negative appraisal of MOH paints them as working hand in glove with the telcos rather than protecting public health.

Excerpt 4.47: Resident C

I have **yet to see any news or publicity from the Ministry of Health** on RF exposure and its harm and effects.

In Excerpt 4.47: Resident C, MOH is again deemed to be inactive and they are represented through functionalisation with the phrase “yet to see any news or publicity from the Ministry of Health”. This indicates that information on RF is not publicly available and this casts doubts on MOH’s role as custodians of public health. It also infers that either the health debates on RF are not of high priority to MOH or that MOH is simply a sluggish bureaucratic government department. MOH’s portrayal as being ineffectual puts them in bad light as they are responsible for protecting public health.

The residents’ representation of MOH places them in a paradoxical situation as they are deemed to be both inactive and insincere in their initiatives. This hints that MOH needs to regain the residents’ trust before initiating any actions on RF.

4.4.2.2 Othering due to their level of motivation

Excerpt 4.48: Resident A

WHO and all, put it very frankly speaking, all these people **are public funded**. Ok? They **depend on public funds** and maybe some of these funds **are funded by this kind of people**. So they, they **cannot antagonise them**. They antagonise them, they don’t get the funding.

The residents feel that the experts have an ulterior motive for supporting the telcos (see Excerpt 4.48: Resident A). The phrases “are public funded” and “depend on public funds” hints that WHO is not independent but relies on financial support for its operations. This suggests that beneficialisation takes place because WHO gets financial sponsorship in return for supporting the telcos. Further, the phrase “are funded by this kind of people” suggests that financial backing for research and development initiatives

are generated from telcos and as such WHO stands to gain from supporting its benefactors. This mutually beneficial relationship is also inferred from the articulation “cannot antagonise them” as it suggests that WHO’s stand on RF is crafted to be advantageous to the telcos for economic reasons. The residents feel that they are marginalised by the experts and that there is collusion between the more influential ‘in-group’ against them.

4.4.3 Summary of the Residents’ Representation of ‘Self’ and the ‘Other’

The residents are the only stakeholder group in the discourse on RF exposure who represent themselves as the underdog: passive citizens and wrong doers/victims. This shows the existence of inequalities and mirror van Dijk’s (2001) view that the victims or targets of power abuse are usually the public or citizens at large, or any other groups that are dependent on these institutions or organisations.

Table 4.4 summarises the residents’ representation of the ‘other’. They view MOH as inactive and insincere and this partially supports MCMC’s, the local governments’ and the telcos’ representation of MOH as they too view MOH as a credible and powerful organisation that is not doing enough to put out fires (see sub-sections 4.2.1.2(a), 4.2.3.4(a) and 4.3.2.1 respectively). However, MOH, a government ministry is also viewed as insincere. This indicates that they cannot be trusted because of vested interest as they are part of the powerful ‘in-group’ with the telcos who are one of the top revenue earners in the country. The residents also view the experts to be motivated for economic reasons. They are inferred to be part of the ‘in-group’ too as they receive funding from the telcos.

Table 4.4: Summary of Residents' Representation of the 'Other'

Social Actors	Level of Credibility	Level of Knowledge	Level of Motivation
Media (Chinese print)	Effective coverage on RF		
Telcos	Unsympathetic and violates guidelines		
MOH	Inactive and doubtful of their intentions and sincerity		
Experts			Motivated for economic reasons

4.5 Politicians Stakeholder Group

The analysis is divided into two sub-sections: sub-section 4.5.1 analyses the representations of 'self' and 'other' from the perspectives of the politicians from the ruling state government, while sub-section 4.5.2 looks at the representations of 'self' and 'other' from the viewpoint of the opposition.

4.5.1 Politicians' (Ruling State Government) Representation of 'Self'

The ruling party see themselves positively as a transparent government that has responded to the public's complaints speedily.

4.5.1.1 Representation of ‘self’ as a transparent government

Excerpt 4.49: Politician C

We have responded to their problems **speedily** for example if they say such a site has excessive radiation level is posing a risk to their health than **we get MCMC** to come to take measurements, and this is done **independently by the industry regulator themselves**. The **entire data gathering process is witnessed by the press** and the **results are published**.

The ruling government’s ‘self’ representation is that of a transparent government and this role is activated by functionalisation (Excerpt 4.49: Politician C). The expressions “have responded” and “speedily” show that they are proactive and react fast to public’s complaints on RF levels. The articulation “independently by the industry regulator themselves” shows that they are fair and transparent when attending to the residents’ complaints. Through specification MCMC is identified as the independent body entrusted to look into the residents’ complaints. The phrase “entire data gathering process is witnessed by the press” shows that the RF readings are measured in the presence of the media, and this indicates openness and transparency in their administration. Further, the articulation “results are published” infers that the ruling party has nothing to hide as results of the investigation are made available for public scrutiny.

Excerpt 4.50: Politician D

We passed all the tests and **we pass all the results** which were published on **MCMC’s radiation website**, www.rf.gov.my. The results are there. I think **we wanted** to maintain our composure; **we wanted to tackle it from technical and scientific perspective**.

The ruling government also boasts that they do not flout the law with the phrase “passed all the tests” (Excerpt 4.50: Politician D). The presupposition is that they are not only transparent but compliant as well. This infers through functionalisation that

they adhere to the principles of openness and accountability to build public trust. Further, the mention of the results being uploaded on MCMC's website reinforces their commitment in being transparent. The phrase "from technical and scientific perspective" also adds merit to the ruling government's representation as it shows that they are responding to the residents rationally with verified facts.

This 'self' representation of a transparent government indicates that they believe in openness and are responsible and duty bound elected representatives of the public. It also means that there is redress without fear or favour when they err in their duties and commitments. Therefore they are distancing themselves from the 'in-group' to show that they are independent and responsible to the public who put them in office.

4.5.1.2 Politicians' (ruling state government) representation of the 'other'

The ruling party at state level is the opposition for the federal government and hence the 'other' for them is MCMC and MOH, two organisations that are part of the federal government. The local government that they inherited from the federal government after the 2008 general election is also 'othered'. They also represent the telcos, the media, the activists, the residents and the opposition party as the 'other'.

(a) *Othering due to their level of credibility*

Excerpt 4.51: Politician C

I think MCMC can take a more proactive stance, be more bold. I think MCMC right now is too busy with their own bureaucracy but they only surface whenever there are big issues, too big an issue.

In Excerpt 4.51: Politician C, MCMC is identified as playing a passive role in the health debates on RF. The phrase "can take" infers that they are capable of doing more and hence suggests that they are not working to the best of their capability. The

articulation “MCMC can take a more proactive stance, be more bold” signals that they are not functioning effectively as they lack the gumption and firmness to address this conflict rationally. MCMC’s role is also mitigated with the phrase “MCMC right now is too busy with their own bureaucracy” as it suggests that MCMC is bogged down with their own internal problems to give priority to issue. The word “bureaucracy” hints that MCMC functions like most public sector agencies which are commonly associated with paper-pushing staff and, an inefficient and wasteful management system. MCMC is also deemed to be unreliable with the phrase “only surface whenever there are big issues” as it gives the impression that they work on an ad hoc basis and attempt fire-fighting only when the issue escalates. This representation delegitimises MCMC’s own representation of themselves as a trusted body on RF.

Excerpt 4.52: Politician D

MOH is **reluctant**, they are **too passive**.

MOH’s representation as being “reluctant” and “too passive” (see Excerpt 4.52: Politician D). These negative descriptions draw attention to the stereotypical style of bureaucracy present in the public sector. This portrayal mitigates the important role MOH plays in this conflict as it looks like they are unwilling to soil their hands. MOH is a powerful body entrusted to safeguard public health, yet they are represented as being hesitant.

Excerpt 4.53: Politician C

The **local authorities is languorous**, the **entire administration machinery is so sluggish**. The local government because of **their bureaucratic processes** is also the **major cause to this problem**

The phrases “languorous” and “sluggish” are a negative appraisements of the local authorities as it denotes that they are laid back and slow (Excerpt 4.53: Politician C). The local government’s participation is subjected with the phrase “entire administration

machinery is sluggish” as it hints that they are weak, lazy and inactive. This is supported with the articulation “their bureaucratic processes” as it draws attention through functionalisation to the quality of the practices in the local government. The phrase “major cause to this problem” indicates that the rigid style of administration is the root of the problem. As a result, they are ineffective in implementing and monitoring policies and safety procedures pertaining to telecommunication structures. The politicians from the ruling state government are distancing themselves from the local authorities though they are part of the state government. This suggests that this lack of accountability which is common in a bureaucratic administration is so deeply rooted in the organisation that it is difficult to transform them even with the change of government at the state level from 2008.

Excerpt 4.54: Politician D

The **target of attack is the telcos. No matter who is the owner**, we will give them time **to legalise** the tower. Basically it is **sheer recklessness and irresponsibility**.

The phrase “the target of attack is the telcos” in Excerpt 4.54: Politician D infers that the telcos have breached the laws and as such the ruling government wants to make them accountable for their transgressions. The expression “no matter who” alludes that the ruling party is proactive in resolving this conflict and will make the telcos accountable regardless of how big or influential these companies are. The expression “to legalise” implies through functionalisation that the telcos are negligent and do not follow procedures and the phrase “sheer recklessness and irresponsibility” justifies this point as it highlights their negligence and low level of credibility. This gross violation of regulations also hints at the inefficiency of MCMC and the local town councils in enforcing and monitoring the actions of the telcos.

This ruling party's representation of the 'other's' credibility juxtaposes the operations of the private sector specifically the telcos who are profit oriented and the public government controlled agencies who are part of the civil service delivery system in the country. The telcos are represented as having low credibility as they are rash, irresponsible and ignore procedures, while the public sector is represented as slow, ineffective and inefficient. This portrayal suggests that the slow bureaucratic processes in MCMC, MOH and the local councils give the telcos no option but to forgo procedures. The telcos are appraised negatively but they are results and performance oriented organisations that need to make decisions in a timely manner and the style of administration in government bodies perhaps impedes their decision making.

Excerpt 4.55: Politician D

But now that we are nearing general election, the issue is brought back. The reporters come back to the same spot and run the story like it is the first occurrence as such. So politics does play a part, and politics in newspapers play a part too which is damaging.

The media is accused of being politically biased in their reporting (see Excerpt 4.55: Politician D). The articulation "are nearing general election, the issue is brought back" activates the media's participation and the way they function during the election period. They are alleged to be responsible for resurrecting RF related issues that have been long resolved. This ulterior motive of the media is suggested in the articulation "The reporters come back to the same spot and run the story like it is the first occurrence" and this infers that they are playing up an old problem on RF. The term "politics" indicates through specification that the media is not neutral but is influenced by its political inclination when they cover news on RF. Also, the phrase "is damaging" implies that the media reporting is generally not in favour of the state level ruling party because of political influence. The political parties in the federal government in Malaysia do have

stakes in media corporations and this hints that the media slant taken by the leading dailies is to appease these political elites. Therefore, the media's credibility takes a beating as they are looked at as agents of power that allow political partisanship to influence their news coverage.

(b) *Othering due to their level of knowledge*

Excerpt 4.56: Politician D

That's why, **these activists themselves they have not been educated** you know, they are **not aware**. **They**, they **have been misled** in believing that it is harmful to life, or to health. So what can we do? Then are these activists the expert in this field? **They** are not right? **They** are **one whole bunch of retirees** who have **nothing better to do** but to **oppose every development that get in their area** right?

The phrases "have not been educated", "not aware" and "have been misled" infers that the activists' knowledge on RF is low (see Excerpt 4.56: Politician D). The articulation "one whole bunch of retirees" also identifies and genericises the activists as senior citizens. The representation marginalises and mitigates the role of the activists as trouble makers with no substance. Further the phrases "Then are these activists the experts in this field?" and "They are not, right?" suggest that the activists' protests are without basis as they lack knowledge to make informed decisions on RF. The repetitive use of the pronoun "they" in reference to the activists suggests that a clear distance from the 'other' is being established. The phrase "nothing better to do" classifies them through identification as a group of retirees with too much time in their hands and that they are meddling for a cause in which they are neither knowledgeable nor qualified.

This negative stereotyping of activists as retirees is probably based on the belief that the older generation is unable to adapt to new situations and therefore resist change. The

ruling party views the activists as ‘out-groups’ as they are pigeonholing old-age with decline in mental, physical, social, and linguistic competence.

(c) *Othering based on their level of motivation*

Excerpt 4.57: Politician C

If he feels **threatened and unsafe**, perhaps he thinks he **might lose votes** he may cut the **technical and scientific considerations** and just **outright object** to it. If it is in Penang, it is largely Politician B (*identified by name in the interview*). This advisor from Gerakan stood against me in Jelutong and lost to me by 16, 472 votes.

The ruling party sees the opposition as adversaries who are in this health debates for political gain (see Excerpt 4.57: Politician C). The phrases “feels threatened and unsafe” and “might lose votes” infer that they are desperate for public support with. To substantiate this point the articulations “technical and scientific considerations” and “outright object” show that the opposition will forgo rational reasoning for political mileage. The politician from the opposition is identified through specification by name, political affiliation, constituency and through the margin of loss in the last election and, such precise information only shows the deep seated animosity and prejudice the politicians have for each other. So the opposition is perceived to be opportunists who use RF as a tool to gain the trust of the public. This suggests that the opposition’s sole purpose is to win the next elections, not the impact of RF on public health.

Excerpt 4.58: Politician C

The **fear of radiation** comes only from the **middle class** and **mainly from the Chinese community**. It’s all about **rental, business and benefits**.

The economic motivation of the residents resurfaces again as a reason for conflicting views on RF (see Excerpt 4.58: Politician C). The phrase “fear of radiation” denotes that the residents as an affected party worry about RF. However, the reason for the anxiety

over RF is indicated with the expression “It’s all about rental, business and benefits”. The inference is that they are only “fearful” of RF if economic beneficialisation does not take place. The residents’ are identified by class and race with the phrases “from the middle class” and “from the Chinese community”. The word “mainly” draws attention through specification that the disgruntled residents are predominately from the Chinese community. The link between the Chinese community and “rental, business and benefits” could be because the Chinese community is dominant in both business and commerce sectors in Malaysia. As a result, this negative stereotype that they are generally more money-oriented presupposes that their motive is economic gain rather than RF.

4.5.1.3 Summary of politicians' (ruling state government) representation of 'self' and the 'other'

The politicians from the ruling state government see themselves as a transparent government and see all other stakeholders negatively in this contestation. Table 4.5 summaries the representation of the 'other'. In terms of knowledge, the activists are stereotyped as retirees who have a low level of knowledge on RF. For level of motivation, the opposition and the residents are inferred to be involved in this conflict because of political and monetary motives.

Table 4.5: Summary of Politicians' (Ruling State Government)

Representation of the 'Other'

Social Actors	Level of Credibility	Level of Knowledge	Level of Motivation
MCMC	<ul style="list-style-type: none"> • Not proactive • Bureaucratic • Have internal problems so RF not priority 		
MOH	<ul style="list-style-type: none"> • Reluctant • Too passive • 		
Local Government	<ul style="list-style-type: none"> • Sluggish • Bureaucratic 		
Telcos	Do not follow guidelines on RF		
Media	Biased reporting		
Residents			Motivated to protest for economic reasons
Activists		Senior citizens with low knowledge on RF	
Politicians (Opposition)			Motivated to align with affected residents for political gain

4.5.2 Politician's (Opposition) Representation of 'Self'

The sole 'self' representation of the opposition is that they are an ally to the public and is committed in fighting their cause.

4.5.2.1 Representation of 'self' as an ally

Excerpt 4.59: Politician A

I am not a **wakil rakyat** (*member of parliament*) **but merely a political worker** whose **main focus** is to help the rakyat (*public*) in the problems they face

In Excerpt 4.59: Politician A, the politician downplays his political status with the phrase "but merely a political worker" and he thus backgrounds the fact that he is actually a member of parliament. This identification of being just a political party worker is perhaps necessary to align his political party through him with the 'out-group' who are the affected residents. The power relations dynamics between politicians and the public are downplayed as the opposition is identifying and empathising with the affected party as a sympathiser who is distressed by their plight. In addition, the phrase "main focus" stresses via functionalisation the commitment of the opposition to provide aid to the affected residents. This emphasises the 'self' representation of the opposition as members of parliament who care for the residents and have the clout to help them if there is public support. However, the opposition is also mitigating the social distance so as to be seen as a trustworthy ally.

Excerpt 4.60: Politician B

I am interested in this field because **I'm a doctor, and I'm a parent. Not so much of being a politician** because once **you** tell **you** are a politician, a **common prejudice** will arise and **your credibility and reliability will be questioned**. As a **medical practitioner**, I find this issue of RF alarming so I want to help

Similarly, in Excerpt 4.60: Politician B, the politician backgrounds his role as a politician by identifying himself as a doctor and a parent first. Again the phrase “medical practitioner” hints through functionalisation that because he is a medical doctor, he understands the residents’ plight and has the desire and willingness to help them. He fortifies the legitimacy of his positive association as a concerned parent and medical doctor to gain a positive appraisal from the public. He is associating with the residents who are the ‘out-group’ by disassociating himself with his own ‘in-group’ which is his political party just to gain public support. The phrases “common prejudice” and “your credibility and reliability will be questioned” indicate that politicians have an image problem. The politician also justifies that his involvement is not for political mileage, which incidentally is the image most of the stakeholders have of politicians in general (see 4.2.1.2(c), 4.2.2.3(b), 4.2.3.4(c), 4.5.2.3, and 4.7.2.3).

The oppositions’ representation as an ally is significant as this indicates that they are trying to empathise with the residents to show that they understand the importance of equality, fairness, acceptance and mutual respect. It also indicates that the opposition will give the residents voice and will take a stand against social injustice directed at them.

4.5.2.2 Politicians’ (opposition) representation of the ‘other’

The ‘other’ for the opposition is MCMC, MOH, MINT (from the expert stakeholder group) and the activists and, they are represented based on their levels of credibility.

The residents and the media are also ‘othered’ based on their level of knowledge and level of motivation respectively.

(a) *Othering due to their level of credibility*

Excerpt 4.61: Politician B

In fact, **MCMC is making things worse**. Why? Because **they are misleading** the people by telling them it is safe. **They should state it clear** that it **might be safe** only if you’re using it with precaution.

In Excerpt 4.61: Politician B, the politician activates MCMC as being deceptive with the phrases “worse” and “are misleading”. This suggests that MCMC is misinforming the public that RF is safe when it is not. The articulations “they are misleading” and “they should state it clear” are negative appraisements of MCMC as they portray MCMC as a powerful ‘in-group’ that is deceiving the public by not furnishing them with truthful information on RF. MCMC’s role in this contestation is vital, hence the alleged misrepresentation of facts is highlighted because as “the trusted body on RF” they are expected to function transparently and they are obligated to provide factual and reliable information on RF to the public. This representation of MCMC by the opposition is perhaps conceived so as to align themselves with the ‘out-group’ who are the affected residents.

Excerpt 4.62: Politician B

MOH follows what **FDA** (Food and Drugs Authority) does in **USA**. Whatever is agreed upon, we **simply mimic** because they are more distinguished. And our **Malaysian Nuclear Agency**, they are **simply following** what ever done by **WHO**.

Similarly, MOH and the MINT are represented disapprovingly for blindly adopting FDA’s policies practised in the U.S.A and guidelines set by WHO (see Excerpt 4.62: Politician B). The phrases “simply mimic” and “simply following” appraise both MOH

and the MINT negatively as these phrases suggest that they are detached from the actual situation at home as they are blindly adopting guidelines adopted by U.S.A. It infers that they are not listening to the voices from the ground. This draws attention to the functionalisation of MOH and MINT as it indicates that they are part of the bureaucratic system in Malaysia and are docile followers who do not question authority. It also suggests that as powerful government bodies they should instead be exercising their authority and making a positive difference by choosing guidelines and policies that are suitable for Malaysia through consultation with the affected stakeholders. Incidentally, the opposition in the state government is part of the federal government and yet they are disassociating themselves from this powerful ‘in-group’ by questioning the credibility of these two government bodies. This representation is maybe necessary to validate the opposition’s role as an ally to the affected residents as it shows that they are unprejudiced and critical of the system that they are part of.

Excerpt 4.63: Politician A

I do not think **this NGO** is linked to **Penang state government or any other political parties**. Their **main objective** is to create the awareness on the **negative impacts of radioactive waves** transmitted from the towers.

Contrary to the majority, the opposition sees the activists as a sincere organisation in this contestation (see Excerpt 4.63: Politician A). Accordingly, the opposition activates the activists as an autonomous organisation with no political affiliation hinting that the opposition is not instigating them to challenge the authorities. The phrase “their main objective” is an attempt by the opposition to distance themselves from the activities of the NGO and corroborate that the activists are part of an independent body. This denotes that the activists function impartially and the expression “main objective” indicates through specification that they are solely committed in creating awareness on RF and hence are trustworthy. However, their lack of impartiality is exposed with the

articulation “negative impacts of radioactive waves” and this infers that the opposition agrees and supports the activists’ point of view. The opposition’s support for this ‘out-group’ is possibly necessary to firstly, win support from the public and secondly, to oppose the dominant voice of the politicians from the ruling party at the state level on RF.

(b) *Otherring due to their level of knowledge*

Excerpt 4.64: Politician B

The residents feel that the waves emitting from the towers are affecting their health. I don’t think it is played up by the political parties. There are people out there who **actually genuinely know about the negative impact** and they **actually worry** about the increasing numbers of telco towers. **I do agree more and more residents** are aware and concern about the safety and health issues which can be caused by RF.

In Excerpt 4.64: Politician B, the residents are portrayed as the affected party in the RF controversy. This is apparent in the articulation “The residents feel that the waves emitting from the towers are affecting their health” as it suggests that residents’ health is affected by RF exposure. Political involvement in the residents’ stand on RF is also dismissed in the phrase “I don’t think it is played up by the political parties” and this shows that the politician is distancing himself from the residents protests. Nevertheless, the articulations “actually genuinely know” and “actually know” show through identification that the residents are knowledgeable about RF. This representation of the residents differs from the other stakeholders’ (MCMC, MOH, local government, the telcos, politicians from the ruling state government, the media, and experts) representation of the residents and activists. This suggests that the politicians from the opposition are perhaps not sincere in the assessment of RF exposure, and that they are using the residents for political gain.

The phrase “about the negative impact” indicates that the residents have a bias view of RF, but this seems to be acceptable to the opposition as it provides them with enough fodder to attack the ruling political party for ‘victimising the residents’. However, the pronoun “I” in the articulations “I don’t think” and “I do agree” show that there is no social distance between the opposition and the residents and as such, they are privy to the residents’ high level of knowledge on RF. Additionally, the phrase “more and more residents” signifies that the residents’ knowledge on RF is spreading, and therefore they are empowered because now they understand the health risks associated with RF.

Excerpt 4.65: Politician B

The Malay community is less concerned according to **my** personal experience and also according to **Professor Adlina**. They are okay **with everything**. They take it **as fate**. So you see, on **environmental issue**, the Chinese in **urban areas** and **towns** are **more aware** of the effect.

In Excerpt 4.65: Politician B, the representation of the residents’ knowledge on RF is identified along racial lines: the Malays are portrayed as being indifferent while the Chinese are activated as being more concerned. This was also repeated by MOH [see 4.2.2.3(a)] and the local government [see 4.2.3.4(b)] in the representation of the residents. The expressions “my” and “Professor Adlina” specify and identify the source of the negative appraisal of the Malays. The phrase “my personal experience” suggests through possessivation that this is not a stereotypical assessment of the Malays, but that as a politician, he has worked closely with them and therefore has first-hand information of the community. The proper noun “Professor Adlina” infers through specification that the source is credible and that she is a fellow Malay who knows the community intimately. The phrases “okay with everything” and “as fate” indicate that the Malays are generally laid back and submissive, whereas the phrases “environmental issue”, “urban areas and towns” and “more aware” paint the Chinese as being

progressive and informed on RF. Therefore, the Chinese participation in this contestation is perceived to be more vocal and dynamic.

This representation of the Chinese and the Malay residents is a socio-cultural stereotype. It is an inflexible and faulty thought process as indisputably the Malays are categorised as a social group that is contented and unperturbed while the Chinese are individualised and perceived to be a threat in this contestation.

(c) *Othering due to their level of motivation*

Excerpt 4.66: Politician B

But as you know, **even the media have their own vested interest** as well. No one in this country is **impartial or neutral**. Look closely, who are the advertisers? Off course they are these big telecommunication companies. If you're in the board, you better be **smart** and play **smart**. Give **appropriate coverage** of certain news. I'm not pin pointing any media.

The media's role in this conflict is linked to advertising revenue (see Excerpt 4.66: Politician B). The media is portrayed as unethical with the phrase "even the media have their own vested interest" as this suggests that it too is tainted and corrupted. It infers that positive coverage is given to the telcos because of their advertising revenue. This is apparent in the phrase "Look closely, who are the advertisers?" as it implies that there is an underlying reason for the bias news coverage as the telcos contribute significantly to the media industry's profits. The use of the terms "smart" and "appropriate coverage" indicate that the media is shrewd for keeping the gravy train flowing with telco friendly reporting.

On the whole, the politicians view the media differently. The ruling party at the state level labels the media as untrustworthy for providing bias coverage that supports the

federal government. On the other hand, the opposition at the state level accuses the media of chasing for advertising dollars from the telcos with telco friendly slant to their news reporting. Hence the media who is part of the powerful ‘in-group’ is represented negatively by the politicians for different reasons: firstly for being not credible as they are untrustworthy and, secondly for being motivated for economic reasons

4.5.3 Summary of Politicians’ (Opposition) Representation of ‘Self’ and the ‘Other’

The politicians from the opposition look at themselves as an ally to the affected residents. This hints that they are perhaps aligning with the residents who are the ‘out-group’ for political advantage. It also suggests that winning the next election takes precedence over RF. Table 4.6 summarises the representation of the ‘other’ by the opposition based on the ‘other’s’ level of credibility. In terms of level of knowledge, the opposition breaks ranks with the rest of the stakeholders by stating that the residents are knowledgeable about RF. However, they identify the residents’ level of knowledge along racial lines. The media is portrayed as being telco friendly in their coverage on RF. The motive for this bias reporting is inferred to be advertising revenue that the media receives from telcos.

Table 4.6: Summary of Politicians’ (Opposition)

Representation of the ‘Other’

Social Actors	Credible	Neutral	Not Credible
MCMC	Misleading public		
MOH MINT (Expert)	Adopting guidelines blindly		
Activists	Sincere		

4.6 Activists Stakeholder Group

The activists are opposing the construction of telecommunication structures in sensitive areas like residential homes and schools. They also want the RF emission standards to be lowered. Therefore, their ‘self’ representation is treated as a collective whole because they have the same narratives.

4.6.1 Activists’ Representation of ‘Self’

The activists work together as a pressure group and provide assistance to affected residents. They support and collaborate with each other in their activities and as such they see themselves as a group that is resolute in helping and creating awareness on the harmful effects of RF.

4.6.1.1 Representation of ‘self’ as a non-profit group committed in issues related to RF exposure

Excerpt 4.67: Activists A

So we are a **non-profit association** so we go out to **help measure readings** and **call for press conference** for any residence who wants help and to **arrange seminars** and all. **Every *sen* (cent) comes out of our pocket and we never ask for any donations.** We want to **create this awareness at national level** so that is why we’ve asked *Himpunan Hijau* (Green Assembly) to join us to make **our** team stronger.

In Excerpt 4.67: Activists A, the activists activate themselves with the articulation “non-profit association” to signify their involvement in RF related issues. This identification highlights their commitment in RF related activities as it suggests that they are a selfless and committed group working for a cause that they strongly believe in. The articulation “Every *sen* (cent) comes out of our pocket and we never ask for any donations” validates their conviction as it denotes that their activities are self-funded. The phrases “help measure readings”, “call for press conference”, “arrange seminars”

and “create this awareness” stress through functionalisation the important role they play to the general public on matters pertaining to RF. The term “national level” suggests that the activists are not contented with just fighting for neighbourhood causes on RF but instead are looking at bringing change at the macro level. *Himpunan Hijau* (Green Assembly) is mentioned via identification as it indicates that the activists have the clout to invite other influential environmental groups to join them in this cause. The expression “stronger” infers that the activists are currently a formidable pressure group that wants to be a more powerful agent of social change by teaming up with other prominent environmental groups. The pronouns “we”, “our” and “us” is used throughout the articulation and this draws attention to their strong camaraderie as a tightly knit, committed and forceful group.

4.6.2 Activists’ Representation of the ‘Other’

The activists’ representation of the ‘other’ is mostly positive unlike the other stakeholders in this conflict. They view MCMC and the media favourably while the politicians are portrayed negatively for being unscrupulous.

4.6.2.1 Othering due to their level of credibility

Excerpt 4.68 Activists A

Actually I am **quite comfortable with MCMC** in this northern region because he **talks to us** and **tries to find out** what can be done. He tries to look for a **compromise** and I give him a lot of information.

MCMC is activated for playing a positive role in this conflict (see Excerpt 4.68: Activists A). However, the phrase “northern region” shows through identification that the activists are only referring to MCMC’s office in Penang. Nevertheless, the articulations “quite comfortable” and “talks to us and tries to find out” suggest that

MCMC in Penang has a conciliatory approach and that they are willing to listen to resolve the RF issue amicably. The expression “compromise” also implies that MCMC is sincere in their approach and as a result the activists are cooperating by sharing information. This positive appraisal of MCMC in Penang is a good indication that there is mutual respect for each other’s opinions and that there is a degree of trust between both parties. It also infers there is no power struggle but genuine respect between MCMC and the activists. On the other hand, this positive representation of the ‘other’ could also suggest that each party is toeing the line to deter an aggressive confrontation that could close doors to negotiation. This representation may also imply that the MCMC branch in the northern region functions as a mediator between the activists and the management in the head office and as such they do not have the power to make decisions. Therefore, MCMC northern region perhaps treats the activists as equals eliminating any power distance between them.

Excerpt 4.69: Activists B

You see the health risk is **already there** so the media is **not sensationalising the news**. You see **I know** journalists who are **going house to house and interviewing the victims**. Whatever they put into the papers **must be evidence based**.

In Excerpt 4.69: Activists B, the activists are going against the grain by representing the media positively as the other social actors in this conflict portray them negatively for sensationalism. The phrase “already there” infers that the health risk from RF is real so the media is activated for performing their function responsibly by covering the perceived risks. The phrase “not sensationalising the news” infers via functionalisation that the media is reporting credibly and not distorting the news to increase circulation. The articulation “I know” indicates that the activist has personal knowledge that the media reports without fear or favour. This is supported with the phrase “must be evidence based” implying that the media is accountable for their news coverage as such

they only publish verified facts. The phrase “going house to house and interviewing the victims” also commends the media’s investigative journalism skills as it interviews victims to obtain first-hand account of their experience. This may also mean that the activists and the media share the same ideology on RF exposure.

Excerpt 4.70: Activists A

Actually the materials on RF **were provided to me** by this journalist.

In Excerpt 4.70: Activist A, there is inference that the activists are influenced by the media. The phrase “were provided to me by the journalist” specifies that the activists are influenced by the media’s ideology as it provides them with the information on RF. This positive appraisal of the media indicates that the activists and the media feed off each other’s ideological views.

Excerpt 4.71: Activists A

Yeah, yeah, **when they were in the opposition they used it as an issue to attack Barisan**. we don’t care if you are **Barisan** or not because like **DAP** when **you** were in the opposition **you** used this issue to make noise and gain **political mileage** and **now that you are sitting on top** when **we say the same thing you rubbish us** and say we know nothing

The politicians are once again portrayed negatively for being manipulative (see Excerpt 4.71: Activists A). The pronoun “they” in the articulation “when they were in the opposition they used it as an issue to attack Barisan” infers that the activists are socially disconnecting themselves with the politicians and creating a distance as they are deemed to be dishonest. The pronouns “they” and “you” also show that the activists have strong ideological and moral differences with the politicians. The pronoun “we” used by the activists in reference to themselves, show solidarity and hints that their opinion on the politicians is agreed upon mutually.

The term “political mileage” infers that the politicians are manipulative and using the dispute on RF to their own advantage regardless of their political affiliation. The phrases “now that you are sitting on top” and “we say the same thing and you rubbish us” suggest that the politicians’ support for the activists wavers depending on whether they are the opposition or an elected member of the ruling state government. This indecisive decision making highlights the way the politicians function and suggests that they are more concerned of their own political career than RF. Overall, the activists’ hint that the politicians act as their mouthpiece because it benefits them, and therefore they are not genuine and cannot be trusted.

4.6.2.2 Othering due to their level of knowledge

Excerpt 4.72: Activists A

The public are **mostly unaware** of RF and that is why **we have to educate them**. **My neighbours did not know** anything about RF **until I told them** about it.

The activists in Excerpt 4.72: Activists A, acknowledge that the public has low level of knowledge on RF and therefore the public’s role in the health debates is mitigated with the phrases “mostly unaware” and “did not know”. The phrase “until I told them” specifies that the activist can vouch for the public’s lack of knowledge from her own experience with her neighbours. As a result, the articulation “we have to educate them” shows through functionalisation that the responsibility lies with the activists to empower the residents who are uninformed about RF. The activists as instigators view the public as the affected who are being victimised because of their lack of knowledge on RF.

4.6.2.3 Othering due to their level of motivation

Excerpt 4.73: Activists C

The **telcos already know**. It's just that **they** don't want to admit. **They** are not that stupid. You think they are stupid hah? **They** are **only seeing dollar and cents**. Sweep everything under the carpet let the people die, never mind. People get cancer, go ahead. You know, **they** don't care about it.

The telcos are represented in Excerpt 4.73: Activists C as being indifferent to the residents' plight for economic reasons. The phrases "already know" and "don't want to admit" put them in a bad light as it infers that they are aware of the RF's negative impact on public health but are concealing it. The residents in their representation of the telcos echo the same view (see 4.4.2.1). Another articulation "only seeing dollar and cents" specifies that the telco's motive is higher profits or bigger market share. In addition, the expression "Sweep everything under the carpet" infers that the telcos are not credible, and that the reason behind such lack of empathy for the residents is economic greed. It also hints that the telcos strong motivation for monetary gain clouds their judgement to act credibly and responsibly. Moreover, the phrases "let the people die" and "People get cancer" emphasise the strong ideological belief of the activists and the perceived callousness of the telcos. The pronoun "they" in reference to the telcos also shows social distance and suggests that the telcos are the oppressors who are victimising the residents purely for economic gain. This negative appraisal also casts aspersions on the way the telcos' function and infers that they are so powerful that they do not heed to laws and regulations that govern the telecommunication industry.

4.6.3 Summary of Activists' Representation of 'Self' and the 'Other'

The activists portray themselves positively as a group committed in helping and creating awareness on the harmful impact of RF exposure. Their representation also indicates that they provide assistance to residents who face problems over irregular siting of telecommunication structures. They do have a bias attitude towards RF exposure but they do not represent the 'other' in the conflict in a negative way. This reflects that they have a conciliatory approach in dealing with the problem despite having a one-sided view on RF exposure. Table 4.6 summarises the activists' representation of the 'other'.

Table 4.7: Summary of Activists' Representation of the 'Other'

Social Actors	Level of Credibility	Level of Knowledge	Level of Motivation
MCMC	MCMC Northern Branch plays a positive role and is sincere		
Telcos			Indifferent to residents plight because of economic reasons
Media	Reports on RF exposure credible		
Residents		Low knowledge on RF	
Politicians in general			Motivated to align with affected residents for political gain

4.7 Media Stakeholder Group

The media is an important social actor in science and risk communication as it has a powerful influence in the social formation of public perceptions of risk. Hence, the media's self-representation is looked as a collective whole than individual entities because they have the same narratives.

4.7.1 Media's Representation of 'Self'

The media has received brickbats from most of the stakeholders except the activists. The journalists however dispel such characterisation and uphold that they are committed professionals.

4.7.1.1 Representation of 'self' as duty bound professionals

Excerpt 4.74: Journalist A

The people want news and as a media company we have to cover this news to let the people know. Anything affecting the health and wellbeing is important and needs media coverage. That is exactly what we are doing.

In Excerpt 4.74: Journalist A, the media activates their role in this conflict with the phrase "as a media company we have to cover this news" indicating that in line with the nature of the media industry they cover news of public interest. The term "media company" via specification identifies their role as an information provider and the expressions "have to" and "need" highlight their commitment as media personnel in providing coverage on issues pertaining to RF and other health and environmental related issues. The phrase "health and wellbeing is important" shows that health issues have a wide readership and therefore as media professionals they are obligated to meet the needs of their target consumers. It also suggests the ideology of this agency as being people centric. Also the phrase "That is exactly what we are doing" signifies through

functionalisation that they are true to their profession by giving coverage to news that is of public interest. Additionally, the articulation “The people want news” implies that the public largely wants to be kept informed of anything that affects them and as a media agency they are privy to impactful events. It hints that the media is dedicated to maintaining editorial independence and credibility by reporting news the way it is told to them. They are distancing themselves from both the ‘in-group’ and ‘out-group’ to maintain that “an essential aspect of journalism is to investigate and present news that established authorities would rather not see published” (Cookson, 2010, p.112)

Excerpt 4.75: Journalist B

We are not bias, because we get pressures from both sides. We just do our job of giving coverage when such issues come up.

Similar representation based on the media’s professionalism and credibility is also expressed in Excerpt 4.75: Journalist B. The media activates their role with the expression “not bias” meaning they adhere to journalistic guidelines and integrity. The phrase “get pressures from both sides” implies that it is a Catch 22 situation for the media as their coverage may irk any one party or more in a situation, and therefore they can be accused of lacking objectivity. The phrase “just do our job ...” counters accusations of biasness by inferring that they are professionals who are duty bound in reporting news of interest. This infers that the media covers news objectively reinforcing their own representation as professionals who adhere to journalistic standards

4.7.2 Media’s Representation of the ‘Other’

The media represents the ‘other’ negatively in all three areas: level of credibility, level of knowledge and level of motivation. Under credibility, MCMC, the local

authorities and experts like Malaysian Nuclear Agency are deemed to be ineffective and unreliable, while the telcos are said to lack sincerity. The residents on the other hand are portrayed as having strong perceptions about RF that cloud their level of knowledge and finally the politicians are said to be motivated for political mileage.

4.7.2.1 Othering due to their level of credibility

Excerpt 4.76: Journalist A

The government and people in authority behave like politicians. They are **not very reliable or effective**. There is a **confidence crisis** because there are lots of loopholes that we need to plug. The people in the **MCMC, Malaysian Nuclear Agency (MINT), MOH** and the related ministries **must be more capable** and not be a **mouth piece** for the government and care about foreign investment. When it concerns public health there **must be no compromise** and this **should be made visible** to the people.

In Excerpt 4.76: Journalist A, the whole government machinery which includes MCMC, the MINT and MOH are described as being ineffective. They are compared to politicians and labelled with a negative phrase “not very reliable or effective”. This indicates that the government ministries, departments, and agencies and, the politicians are not credible as they cannot be trusted to carry out their duties effectively. This portrayal of the government is further upheld with the phrase “confidence crisis” as it suggests that the public is having problems trusting the government. The specification of the government agencies like “MCMC, MINT, MOH and the related ministries” draws attention to the incompetency of these organisations who are regulators of the telecommunication industry, experts in RF and custodians of public health respectively. So the expressions “must be” and “more capable” hint that these government bodies are not doing their job to the best of their ability. Further, the expression “mouth piece” indicates that these government bodies are part of the ‘in-group’ with the federal government and therefore take directives from the government to ensure the inflow of

foreign direct investments rather than safeguard public health. The phrases “there must be no compromise” and “should be made visible” also suggest that these organisations do not function independently and transparently but is controlled by the government. It also infers that as part of a powerful ‘in-group’ they work in tandem with the federal government to protect their own interests. It also hints that the welfare of the public whom these powerful authorities are entrusted to protect is over looked and side lined. This negative appraisal is perhaps based on a bias assumption of the government agencies as being unproductive and bureaucratic but it also hints at the political and socio-cultural inclination of the media as being anti-government.

Excerpt 4.77: Journalist B

...the only people who quote facts and figures are the telcos. And unfortunately, these **big companies don’t come across as very sincere** when they quote facts and figures

The telcos too are inferred to be suffering from an image problem (see Excerpt 4.77: Journalist B). The phrase “big companies don’t come across as very sincere” shows through specification that powerful corporations like the telcos are viewed with distrust by the public. The articulation asserts that the telcos are making an attempt to justify their actions rationally by citing facts and figures. However, their actions are being met with resistance as the public assesses them with suspicion. This could be probably based on the public’s own past experience with telcos or through negative word-of-mouth which mars their perception of powerful corporations. The public’s scepticism also infers through functionalisation that the telcos lack transparency.

4.7.2.2 Othering due to their level of knowledge

Excerpt 4.78: Journalist C

In my opinion, **not Chinese but all other races** don't approve of telco towers.. Actually **when people really get to know that a tower is coming up, they would prefer not to have it**. They want the facilities but they don't want the antenna near them. **People who are not really educated but are scared** and **listen to rumours** and they **don't really understand** why they are making noise so **they just follow** what other people are saying or doing.

In Excerpt 4.78: Journalist C, the residents' level of knowledge on RF is once again acknowledged as a stumbling in resolving this conflict. The possessive pronoun "my" suggests that the journalist as a media person has experience covering this conflict and therefore speaks with authority based on his observation of the residents. As such, the articulation "not Chinese but all other races" infers through identification that the unhappiness over inappropriate siting of telecommunication structures and its negative impact on health transcends racial lines and is a shared view of the public. Again the phrases "when people really get to know that a tower is coming up" and "they would prefer not to have it" genericise that knowledge of siting of new telco structures in the vicinity of their homes makes the residents apprehensive, and as a result they oppose these structures. This signifies that the residents have a negative perception of RF that narrows their reasoning. The repetitive use of the pronoun "they" also signifies social distance as the media wants to stay neutral. Furthermore, the residents are also inferred to be unreasonable as "they want the facilities but they don't want the antenna near them". This may also stem from their ignorance as the articulations "not really educated", "don't really understand" and "just follow", "are scared" and "listen to rumours" are all negative appraisements of the residents which emphasise their level of knowledge. These expressions highlight the residents' vulnerability and their herd mentality as they are subjected and 'massified' as a bunch of ignorant, frightened, and gullible group of people

4.7.2.3 Othering due to their level of motivation

Excerpt 4.79: Journalist B

The **tower game** has moved on **from a perception to a political game** which is why **I refused to be drawn into it**. At the end of the day **the tower issue is all down to the interest of various political parties**

The politicians' vested interest in this conflict is activated through their level of motivation in Excerpt 4.79: Journalist B. The terms "tower game" and "political game" denote that this controversy over RF is more like a sport where each stakeholder specifically the politicians are in it with a sole purpose of winning. Consequently the politicians are activated as instigators in the phrase "from a perception to a political game" implying that they are capitalising on the public's negative perception of RF for political gain and not out of a sincere attempt to find a solution. The articulation "I refused to be drawn into it" implies that the journalist in his personal capacity does not want to be embroiled in such political manoeuvres. This perhaps hints on the contrasting ways in which both the politicians and journalists in general function: the politicians' involvement is based on a dishonest motive which is to take a popular stand on RF to win public support, whereas the journalists are duty bound and want to uphold journalism ethics and integrity. The politicians' enthusiasm in this foray is also signified through specification in the phrase "the tower issue is all down to the interest of various political parties". This articulation indicates that the politicians' initiative is not RF driven meaning that they not genuinely concerned about the effects of RF on public health but it is politically driven as they hope to expand their party's influence.

4.7.3 Summary of The Media's Representation of 'Self' and the 'Other'

The media sees itself as honest professionals who provide objective reports on RF exposure. They also state that as media professionals they cover news that is of public interest. Table 4.8 gives an overview of the media's representation of the 'other'.

Table 4.8: Summary of The Media's Representation of the 'Other'

Social Actors	Level of Credibility	Level of Knowledge	Level of Motivation
MCMC MOH MINT (Expert)	Not effective as they do not carry out their duties effectively.		
Telcos	Have an image problem.		
Residents		Residents have low knowledge on RF	
Politicians (Opposition)			Motivated to align with affected residents for political gain

4.8 Experts Stakeholder Group

Six experts who are directly involved in RF have been interviewed but their self-representation are looked at as a collective whole because they have the same narratives pertaining to RF exposure from telecommunication structures.

4.8.1 Experts' Representation of 'Self'

The 'self' representation of the experts is positive as they see themselves solely as knowledgeable and experienced professionals.

4.8.1.1 Representation of 'self' as knowledgeable and experienced professionals

Excerpt 4.80: Expert 3

...as **university professors** we get funding in doing our work, **we** do our work to the **best of our ability, according to protocol** and do the **best that we can** and usually when industry sponsored **we** have **enough support** to do a **better study**. **I** have been in this field **for 40 years**.

In Excerpt 4.80: Expert 3, the experts' participation is activated with the expression "university professors". This identification is supported with the phrases "best of our ability", "best that we can" and "according to protocol" as it draws attention to qualities like determination and integrity which are some of prerequisites of professionals in the field of science and medicine. The repetitive use of the superlative "best" is a positive appraisal of the experts which indicate that they are very skilful, knowledgeable and produce high quality research. The phrase "according to protocol" also suggests that the findings on RF are genuine as the research process adheres to research etiquette. Hence it indicates that the research findings are not concocted to appease the industry that provides the funding. Additionally, the expressions "I" and "for 40 years" imply through specification that the expert is speaking from his vast experience on RF. The pronoun "we" throughout the articulation suggests close kinship and highlights the

shared professionalism of these experts. Furthermore, the pronoun “our” highlights through possessivation the positive attributes that the experts uphold to ensure honesty and transparency in their research. The phrase “when industry sponsored” is an acknowledgment that the experts do receive funds from the industry but the phrases “enough support” and “better study” qualify that such partnerships are fruitful and beneficial for society at large.

Excerpt 4.81: Expert 4

MCMC has a problem, they don’t know what to do and they don’t have enough knowledge **so that is where we come in**

Similarly in Excerpt 4.81: Expert 4, the experts activate themselves as knowledgeable and experienced professionals whose expertise is sought by MCMC. The phrase “so that is where we come in” draws attention to the experts’ valuable function as advisors on RF. It also hints that they are looked at as influencers who have the authority and power because they are more conversant about RF than the rest of the other stakeholders.

4.8.2 Experts’ Representation of the ‘Other’

In the representation of the ‘other’, the experts touch on the media’s and the politician’s low level of credibility. They also look at the residents from two viewpoints: their low level of knowledge and their high level of motivation for economic gain.

4.8.2.1 Othering due to their level of credibility

Excerpt 4.82: Expert 3

Well, it is the nature of **media and business**. **If** you got nothing that is interesting who is going to buy papers? **The media is very powerful and the media is not interested in talking to people like me** because what I say is **not sensational**, there is no story in there and who is going to read that.

The phrase “very powerful” activates the media’s role in this conflict (see Excerpt 4.82: Expert 3). The experts hint on the way the media operates with the articulation “nature of media and business” to suggest that the media functions as a profit oriented entity. This casts doubts on the truthfulness of the information covered by the media. Furthermore, the term “if” in the articulation “If you got nothing that is interesting who is going to buy papers?” highlights the dependence of sales of newspapers on interesting news. This again draws attention to the way the media functions as it infers that the media thrives on sensationalism to gain readership. The articulations “the media is not interested in talking to people like me” and “not sensational” suggest through specification that the media avoids experts whose views support that RF is not injurious to health as such news are rendered not newsworthy. As pointed out by the experts, the media plays a powerful role. However it is suggested that they misuse this power for economic gain by exploiting the public’s love for sensational news. Therefore, the media is portrayed as negative influencers because by sensationalising news on RF, they are not providing truthful information to the public. This infers that the media is not credible as they provide slanted coverage of RF which is in line with their business culture.

4.8.2.2 Othering due to their level of knowledge

Excerpt 4.83: Expert 2

I think it is **very difficult to speak to the public who have formed opinions and refuse to change**. I don't think we can **neutralise** them that easily. I don't like to use the word **neutralise** but it is **not easy** for us to convince them to change their opinion.

In Excerpt 4.83: Expert 2, the public is represented as being too opinionated on RF's impact on health. However, the phrases "very difficult" and "not easy" hint through specification that the public has a rigid understanding of RF. The articulation "have formed opinions and refuse to change" reveals the residents' deep seated prejudice on RF and this is a negative appraisal of their level of knowledge. The expression "neutralise" subjects the residents' knowledge as something highly explosive that needs to be defused and it validates that their skewed knowledge on RF is damaging. The pronouns "us" and "them" in the phrase "for us to convince them to change their opinion" show clear segregation of the in and out groups. The articulation "for us to convince them" infers that the experts are the 'in-group' as they have the knowledge, power and authority "to convince" the public. On the other hand, "them" refers to the public who is perceived to be not on equal footing with the experts as their knowledge on RF is low and bigoted. Therefore, the residents are perceived to be the underdog because of their alleged warped knowledge on RF. This representation of the residents also implies that the residents' understanding of RF is all flawed and that the experts' views on RF are all truthful as they have the knowledge and experience. Hence there is clear power imbalance in this representation based on the levels of knowledge of the in and out groups.

4.8.2.3 Othering due to their level of motivation

Excerpt 4.84: Expert 6

Politicians play to the tune and they are vocal **but** they don't actually look **at what is right**.

The politicians are activated in Excerpt 4.84: Expert 6 for being scheming. The expressions “politicians” and “play to the tune” genericise that the expert is distancing himself from politicians as they change their stand for their political. It also sheds light on the way the politicians function as it highlights their erratic decision making process that is based on popularity. It also alludes a negative appraisal of politicians in general. Again, the term “but” indicates the deviousness of the politicians as it shows that they support the public in their protests even if the residents are in the wrong. The phrase “don't actually look at what is right” shows that the politicians will bend the rules as long as it is to their advantage. The inference is that they perhaps use Machiavellian's tactics to achieve power and success. They are elected representatives of the people, but the best interests and benefits of the constituents who put them in office are ignored for political gain.

Excerpt 4.85: Expert 2

Actually why they dislike the base-station is sometimes **due to jealousy** because most of the rooftop structures are placed on the shop-lots or 2-storey building where they are **paid monthly rental** and whereas the people next door don't get anything. **Telcos pay about RM1,000 – RM2,000 per month**.

The experts also identify economic incentives as the motive behind the residents' protests (see Excerpt 4.85: Expert 2). Correspondingly, the phrase “Actually why they dislike the base-station” suggests that there is something more sinister than health reasons in the residents protests. Further, the articulation “due to jealousy” signals the

reason behind the residents' unhappiness is not RF, but denial of rental income. This is supported with the phrase "paid monthly rental" as it suggests the lack of this monetary beneficialisation has contributed to resentment towards the telcos who are responsible for these structures. The articulation "Telcos pay about RM1,000 – RM2,000 per month" is identified via specification as the root of the residents' discontentment. The experts hence do not describe these residents as being helpless and victimised, but portray them as being angry and frustrated as they are denied of the rental income from the telcos. So the residents who are landlords are represented as the affected party who are taking on the powerful telcos through resistance.

4.8.3 Summary of Experts' Representation of 'Self' and the 'Other'

The experts represent themselves as knowledgeable and experienced professionals who have the credentials and experience to speak on RF related matters. However, there is a sense of frustration in the way they represent the 'other'. This aligns with van Dijk's (1995) view that speakers of one group will generally tend to present themselves or their own group in positive terms, and other groups in negative terms. It also suggests that ideology plays a part in establishing and maintaining unequal power relations through discourse between 'them' and the 'other' (Fairclough, 2009). Table 4.7 condenses the experts' representation of the other.

Table 4.9: Summary of Experts' Representation of the 'Other'

Social Actors	Level of Credibility	Level of Knowledge	Level of Motivation
Media	Media sensationalises news on RF.		
Residents		Residents have low knowledge on RF	Motivated to protest for economic gain
Politicians (Opposition)			Motivated to align with affected residents for political gain

4.9 Summary

The findings show that the representation of 'self' is always positive and differs based on the different roles they play, but the 'other' is represented mostly negatively in terms of the credibility, knowledge and motivation.

The government bodies namely MCMC, MOH and the local councils activate their roles based on the important function they play in this contestation. MCMC portrays themselves as a trusted body on RF, while MOH highlights that they play a monitoring and reviewing role as well as cooperates with MCMC in their RF related activities. The local governments' representation of 'self' highlight that they are a custodian for safety and compliance, and are non-experts on RF. The telcos identify that they are a complaint organisation with good corporate governance. The representation of the politicians is divided into the politicians from the ruling state government and the opposition. The ruling government portray themselves as a transparent government while the opposition represents themselves as an ally to the public. The media and experts maintain that they are committed professionals while the activists represent themselves as a non-profit body committed in issues related to RF exposure from telecommunication structures. The residents however represent themselves as both the victim and wrongdoer in this contestation.

In the representation of the 'other', the social actors tend to align the 'self' with the 'in-group' that supports their own representation while they distance the 'other' and portray them as the 'out-group' as they do not share the same beliefs and values. The residents are represented by almost all the stakeholders except the opposition as a group with low levels of knowledge and who are motivated by monetary gains. They are stereotyped based on their ethnicity and age. The media is represented negatively for

their biased and sensational style of reporting but the residents and activists view them especially the Chinese media positively possibly because they subscribe to the same values. The media may also be using sensationalism to increase circulation as they are another profit-oriented organisation. The telcos however see the media as a link to reach out to the public to correct their misperception of RF. The government agencies' level of credibility takes a beating because of their bureaucratic style of administration and lack of accountability. The representations of the politicians and experts as the 'other' are also negative. The politicians are deemed to be manipulative as they have their own self-interest at heart while RF's impact on health takes a backseat. The experts on the other hand are inferred to be less credible as they are accused of producing telco friendly reports for funding. On the whole, this negative representation of the 'other' portrays them as dishonest, irresponsible, misguided, prejudiced, and motivated for economic or political reasons.

CHAPTER 5: REPRESENTATION OF SOCIAL ACTIONS

5.1 Introduction

This chapter's focus is on the representation of social actions in the discourse of the various stakeholders regarding RF exposure and its impact on health. The analysis of the social actions is important as it highlights different interpretations and different attitudes of the represented act (van Leeuwen, 1996). Five themes are prominent in the data (see Chapter 3 section 3.4.2): granting approval for the siting of telecommunication structures, construction of telecommunication structures, educating the public on RF, protests by the residents and media reporting on RF related issues. These themes are consistent with the literature on problems in risk communication on RF mentioned in Chapter 2 sub-section 2.2.3. These five common themes are used in the analysis for the representation of social actions in this contestation.

The themes representing the five prominent social actions are analysed and discussed separately under sub-sections 5.2 to 5.6. Each sub-section looks at the action of the main participant(s) and the reaction by the affected social actors. This helps to show how the RF issue is discursively represented in contesting ways. The data comes from the same interviews with the seven (7) stakeholder groups used in Chapter 4.

The thematic analysis and discussion of the social actions are based on van Leeuwen's Social Action categories identified in Chapter 3 sub-section 3.3.2 and the categories are action/reaction, cognitive/affective/perceptive reactions, transactive action, interactive action, instrumental action, nontransactive action, activation, deactivation, objectivation, descriptivisation, agentialisation, deagentialisation, eventuation, existentialisation, naturalisation, abstraction, generalisation, and

distillation. These categories have been identified from the pilot-study conducted on samples of the data (see Chapter 3 section 3.4.2). This chapter concludes with a summary of the analysis and discussion in section 5.7.

5.2 Granting Approval for the Siting of Telecommunication Structures

MCMC and the local government are the stakeholders responsible in granting approval to the telcos. These two agencies play different roles in the approval process and their decisions have an impact on the telcos' quality of service. The telcos on the other hand, need centrally located telecommunication structures to provide good network coverage (Dohle, Keller, & Siegrist, 2010). So the excerpts in sub-section 5.2.1 from the interviews with the local government and MCMC describe the act of granting approval, and sub-section 5.2.2 looks at the reaction of the telcos as they are the beneficiary in this process.

5.2.1 Action

Excerpt 5.1: SSP

The telcos **need permission from MCMC**. The structures **need planning permission from the local council**. They need approval from the **Bomba, Jabatan Penerbangan Awam (DCA)** to ensure there is no obstruction in the flight path, from **Jabatan Kerja Raya (JKR)** and **Jabatan Pengairan dan Saliran (JPS)** if it is located in the pathway of roads or rivers and in Pulau Pinang recommendation must also come from the **Technical Review Panel (TRP)** if the base station is in the Heritage Zone. **There is a list of guidelines and policies** in place that they must adhere to. **They have to comply with certain regulations** pertaining the height of the tower and the distance to schools, hospitals etc.

Excerpt 5.1: SSP highlights that granting approval for the siting of telecommunication structures is a transactive action as the agency (local government, MCMC and the other approving bodies) and the beneficiary (telcos) are clearly attributed. The representative from the local government acknowledges that besides them and MCMC, there are various other parties involved in the approval process and

this is highlighted through the proper nouns “Bomba” (Fire Department), “Jabatan Penerbangan Awam” (Department of Civil Aviation), “Jabatan Kerja Raya” (Works Department), “Jabatan Pengairan dan Saliran” (Drainage and Irrigation Department) and the “Technical Review Panel”. This infers through agentialisation that each agency involved in the approval process act is based on their areas of jurisdiction. This legitimises the role of these powerful agencies in this process as the telcos must first meet their requirements before proceeding further. This activates the role of these agencies in the decision making process.

The phrase “planning permission” and the phrase “from the local council” specify distinctly that the local councils’ jurisdiction in this approval process is confined to matters pertaining to planning regulations. However, the rest of the approvals are not identified but it is agentialisation by association to the specialised agencies’ like the Fire Department, Department of Civil Aviation, Works Department, Drainage and Irrigation Department, and the Technical Review Panel.

The act of granting approval is also deagentialised with the articulations “There is a list of guidelines and policies” and “They have to comply with certain regulations” because it signifies that the telcos must comply with an existing written rules. So the act of granting approval is both agentialised and deagentised as it needs to go through many government agencies that have jurisdiction in their specialised areas. In addition the telcos are required by law to follow policies and rules to obtain siting approval for these telecommunication structures.

Excerpt 5.2: MPSJ

...we can only base on the **guidelines** so if they meet all the **requirements like 20 or 25 meters** from residential units and if all guidelines are complied with, we **have to give** them the approval.

The process of granting approval is instrumentalised with the terms “guidelines” and “requirements” in Excerpt 5.2: MPSJ. The local council reiterates that the approval on their part hinges on whether the telcos’ follow the rules. This deactivates the action of granting approval because the approval process cannot progress if the conditions stipulated in the guidelines and requirements are not met. Further, the phrase “like 20 or 25 meters” infers through spatialisation that the location of the telecommunication structures from residential and other sensitive areas like schools are regulated. In addition, the phrase “only base on...” stresses that the local councils’ actions are confined by the guidelines. The local councils’ approving process surmises to be compartmentalised, bureaucratised and mechanical as it hints that it involves ticking the boxes from a checklist. However, the party or parties instrumental in coming up with the guidelines are backgrounded.

The expression “have to give” deactivates the local council’s power in this process as it once again implies that the granting approval is determined by the guidelines. It hints that the local government are compelled to approve the application if the telcos meet all the requirements. This infers that the process is perfunctory and purely based on whether the telcos’ requests for new or additional telecommunication structures meet a set of procedures. The various agencies involved in this process exercise their power based on their area of expertise and the telcos compliance to a set of guidelines and procedures. This infers a very tight and rigid process with no room for flexibility.

Excerpt 5.3: MCMC1

So on the technical part yes we control that but **on locations** are under the local council, But before a tower can be erected it **has to go through a technical committee** with the local council itself. **We are also in this committee** together with BOMBA and a few others and **based on the technical body's recommendation** the local council **will approve the site**.

In Excerpt 5.3: MCMC1, the responsibilities of both the agencies namely MCMC and the local councils are clearly acknowledged. The actions of these agencies are deactivated as the approval process is not at their sole discretion but is determined by each other's decision on specifically the "the technical part" and "on location". Further, both these phrases describe the jurisdiction of both agencies. The inference is that MCMC is knowledgeable in the technical aspect of telecommunication structures while the local councils are well-informed about situating these structures. The phrase "has to go through a technical committee" suggests again that the action is interactive as there are many agencies involved in the decision making.

However, the articulation "So on the technical part yes we control" legitimises MCMC's powerful representation in this action because of its authority over the technical aspects of the approval process. But MCMC tones down their involvement with the phrase "has to go through a technical committee" and the clause "We are also in this committee" as it suggests that MCMC has the authority in the technical aspects of the decision making, but the approval comes from a collective decision making team. Further, the phrases "based on the technical body's recommendation" show that the decision is not autonomous but is determined by the technical committee. This suggests that there is diffusion of responsibility. MCMC and the local councils cannot yield their power in isolation though they claim that they have jurisdiction over the technical and siting aspects of the approval process.

The accountability of each agency is dispersed based on their areas of specialisation so this makes the whole process vulnerable to conflict. However, the process suggests that there is transparency because of the involvement of the various agencies. However, this may pose as a hindrance in resolving disputes and protests speedily as there is a clear demarcation of power.

Excerpt 5.4: MPPP

In the new ruling now when telcos put in plans they **must have** the **planning permission and building plan**. For the planning permission, **there will be a public hearing with owners** of adjoining lots. They **need to be consulted** and be given a **chance to voice any objections** and it is up to the council to see **if the objection is valid**. Under the new ruling the local *Y.B.* (assemblyman) **must be also consulted** and **if the *Y.B.* objects then it cannot be processed**.

The phrase “In the new ruling” illustrates that the latest ruling is an additional requirement in the approval process (see Excerpt 5.4: MPPP). Accordingly, the phrase “planning permission and building plan” through objectivation indicates that these two requirements are integral in granting approval without which the whole process can be stalled. The phrase “must have” legitimises the conditions stipulated in the new ruling as mandatory.

Furthermore, the articulation “there will be a public hearing” signifies through naturalisation that a public hearing is a natural course of action in the approval process. The practice of granting approvals is also viewed to be interactive with the phrases “public hearing”, “need to be consulted” and “chance to voice any objections” because it shows that the residents are given the power to air their views and that their input adds weight in the approval procedure.

However, the phrase “if the objection is valid” suggests that the objection can be contested by the local government based on different interpretations. The public is

allowed to air their objections but determining the legitimacy of these objections rests with the local government. Therefore, the local government has the power to delegitimise the publics' complaints pertaining to telecommunication structures as irrational and allow telecommunication structures to be erected on contentious locations. This hints that the public's inclusion in the approval process is superficial because their objections can be reversed.

Another important representation in granting approval is the activation of the politician which is realised with the phrase "must be also consulted". The politicians' involvement is agentialised and the phrases "objects" and "then it cannot be processed" imply explicitly that the application can be halted if the politicians oppose the approval for sites for telecommunication structures in their constituencies. Therefore, the politicians have the authority to override the decision of MCMC, the local councils and other experts in the technical committee. This highlights the politician's powerful influence in this conflict as they have the authority to manipulate the situation for political gain.

5.2.2 Reaction

Excerpt 5.5: Telco B

If we fail to comply with the guidelines, MCMC will not give us approval. It will cost us a lot of money about RM300,000 to RM400,000. So, it is better that we follow the proper guidelines.

The reaction from the telcos is deactivated with the terms "guidelines" and "approval" as they acknowledge that the approval is not guaranteed but is determined by their compliance to the guidelines (see Excerpt 5.5: Telco B). Accordingly, the articulation "fail to comply with the guidelines, MCMC will not give us approval" infers that it is compulsory for the telcos to meet the requirements specified in the

procedure. The whole process is naturalised as the guidelines are given prominence and this indicates that adhering to the procedures is the expected cause of action to obtain approval.

The reaction by the telcos to the approval procedures is also descriptivised in the clause “It will cost a lot of money about RM300,000 to RM400,000” as this implies that failure to adhere to the set rules will be costly because the structures can be decommissioned by the authorities for non-compliance. In addition, the articulation “So, it is better that we follow the proper guidelines” suggests that the telcos have thought this through and have accepted that the whole process is something that they ought to do in their line of business to avoid monetary loss.

Excerpt 5.6: Telco A

...we **are constantly upgrading** or trying to add in more sites based on requirements. **So we follow certain guidelines set by MCMC to get the approval. We do follow a lot of rules, we are strict about that.**

In Excerpt 5.6: Telco A, the telco activates its role in the approval process with the articulation “are constantly upgrading” suggesting that it is actively involved in the approval process for additional or new telecommunication structures, and are hence aware of its rules and regulation. The phrase “So we follow certain guidelines set by MCMC” endorses that the telcos are familiar with the process required by MCMC. Further, the articulation “We do follow a lot of rules, we are strict about that” indicates that complying with rules and regulations is natural in their line of business so they are meticulous in complying with the procedures pertaining approval of sites for telecommunication structures. This supports the telcos’ ‘self’ representation as a compliant organisation in Chapter 4 sub-section 4.3.1.1.

However, only MCMC's action is activated in the approval process in Excerpts 5.5: Telco B, and 5.6: Telco A. This is evident in the articulations "MCMC will not give us approval" and "So we follow certain guidelines set by MCMC to get the approval". This infers that the telcos are legitimising MCMC's powerful position because it singles out MCMC as the sole agent in the approval process. The representation of the politicians, the local councils and the technical committee is backgrounded while MCMC is given prominence. This could be attributed to the paternalistic relationship that MCMC has with the telcos as the regulator of the telecommunication industry.

The reaction from the telcos infers that they are not contesting the approval process. Instead, it is a reaffirmation that they comply with the requirements and guidelines set by the approving authority specifically MCMC. However, the reactions from residents, the politician from the ruling government and the local government in sub-section 5.3.2, allude that the telcos are responsible for constructing illegal telecommunication structures. Similar representation of the telcos also appears in sub-sections 5.5.1 (Protests by residents) and 5.5.2 (Reaction to the protests) and these representations highlight contradictions. The telcos' reaction in the approval process appears to be positive to appeal to the expectations of the residents, MCMC, the local government and other policy makers. However, the residents delegitimise the telcos' representation by accusing them for the presence of illegal structures. The local government on the other hand, deflects blame to avoid responsibility for lax enforcement despite a stringent approving process. Additionally, the politicians' authority in the approval process infers there is room for manipulation for political gain. These contradicting representations lead to mistrust among stakeholders and pose a challenge to risk communicators.

5.3 Construction of Telecommunication Structures

Dohle, Keller, and Siegrist (2010) and Cousin and Siegrist (2010) state that in order to ensure network coverage, it is necessary for telcos to construct telecommunication structures in the vicinity of places where people want to use their phones. Hence sub-section 5.3 covers the social actions in the construction of telecommunication structures by the telcos and sub-section 5.3.2 examines the reaction from the residents, politicians and even the local government who are involved in granting approval to the telcos (see sub-section 5.2). The reaction from these social actors infers that the stringent policies and bureaucratic red tape are not a deterrent to the telcos as the presence of many illegal telecommunication structures hints that the telcos are flouting the laws.

5.3.1 Action

Excerpt 5.7: Telco A

Basically when we talk about of siting of base stations, it **is based on planning done by our network planning teams**. This **is based on feedback from the marketing department, customer service** and so it is based on a lot of things. One is **coverage requirement**, attending to **complaints** from subscribers or request for coverage which again **comes in from our customers or even MCMC**

In Excerpt 5.7: Telco A, the representative from the telco explains that the construction of telecommunication structures is a transactive action because the construction of these structures benefits its customers. The phrases “is based on planning done” and “is based on feedback” signify the action is interactive because the requests to commission new or additional telecommunication structures come “from the marketing department, customer service” and MCMC. The expressions “coverage requirement” and “complaints” suggest agentialisation because the telcos are responding to customers’ demands. The phrase “comes in from our customers or even MCMC” again signifies that the telcos as service providers are duty-bound to provide good service to its customers as well as comply with MCMC’s requirements.

Both the customers and MCMC are influential stakeholders to the telcos as their business growth depends on them. Ironically, the customers are equally powerful in their protest to decommission telecommunication structures located in their neighbourhood. Consequently, the telcos' are placed in a delicate situation as they need to please customers who demand good service and to respond to those who oppose these structures. This validates that the public generally enjoy the convenience of mobile communication but are opposed to having mobile phone base station sites near their homes (see Chapter 2 sub-section 2.2.3.1).

Excerpt 5. 8: Telco C

MCMC also does annual or half-yearly measurement check on quality of all the operators and **based** on the feedback we know where are the gaps **we are required** to fill up and **we are required** also **by law** to actually provide a certain level of quality of service which we have to adhere to. A **combination of all these factors determines the overall plan, where to locate and put the sites.**

Excerpt 5.8: Telco C indicates that MCMC plays an instrumental role in ensuring that the telcos comply with quality requirements. So the telcos do not act in isolation in choosing the sites for telecommunication structures as they need to adhere to MCMC's requirements. The phrase "measurement check on quality" denotes a transactive action as MCMC is responsible in auditing the telcos' quality performance. The repetitive use of the expression "we are required" suggests that the telcos are under pressure to maintain good quality service. Accordingly, the telcos' actions are both agentialised with the clause "MCMC also does annual or half-yearly measurement check on quality" and deagentilised with the phrase "are required by law". As such, the telcos are once again legitimising their role vis-à-vis the construction of telecommunication structures as the representation suggests that they are fulfilling the requirements set by the regulator and by statute for quality service.

5.3.2 Reaction

Excerpt 5.9: Resident D

In this area, they **did it in daylight**. Big lorry **coming in and out**, and is **definitely visible to us**. We were **wondering what was going on**? I feel I **can't do much** because we are **outnumbered**. Plus, the residents along the road **did nothing but watch when the telco company started the construction**.

The reaction by the resident is descriptivised with the articulations “did it in daylight”, “coming in and out”, “wondering what was going on” and “definitely visible to us” (see Excerpt 5.9: Resident D) as it hints that the residents are unaware of the telcos actions. These articulations suggest that the activities of the telcos are rushed, vigorous and unannounced. The residents’ hopelessness is equally descriptivised with the phrases “can’t do much” and “are outnumbered”. Also the objectivation of the residents living in the vicinity is realised through temporalisation with the articulation “did nothing but watch when the telco company started the construction”. This asserts that the residents’ reaction is emotional as they are powerless while the telcos are brazen because the construction of these structures is carried out without the residents’ approval, which is required by law (see Excerpt 5.4: MPPP in sub-section 5.2.1).

This delegitimises the action of the telcos as it is contrary to the policy on the construction of telecommunication structures. The resident’s discourse activates the construction of these structures as a form of oppression and victimisation by the telcos. Similar power dynamics appear in the residents’ representation of ‘self’ in Chapter 4 sub-sections 4.4.1.1 and 4.4.1.2.

Excerpt 5.10: Politician C

There are illegal installations but not notified to MCMC. So I gave the telcos one month to declare if the structure is not declared to MCMC. Upon declaration, **860 which equals to 60% out of all structures are illegal**. So we decided a timeframe. We gave them one and half year to go on with a process I call **legalisation**. It has been **done now** but was **not done before 2008**.

In Excerpt 5.10: Politician C, the politician affirms the existence of illegal structures. This is expressed with the clause “There are illegal installations” and this signifies firstly that illegal structures are a reality, and secondly that the words and action of the telcos do not correspond as they have breached the guidelines pertaining to the construction of telecommunication structures. Further, the phrase “but not notified to MCMC” and the phrase “So I gave the telcos one month to declare” hint that the actions of the telcos are nontransactive because they acted alone clandestinely. The articulation “860 which equals to 60% out of all structures are illegal” describes the telcos’ disregard to guidelines and policies. However, the expression “legalisation” suggests through distillation that the telcos are given a chance to correct their misdeeds. The phrases “done now” and “not done before 2008” also allude generally that the telcos’ actions have not been regulated under the previous state government, but it has been put right now under the new state government. In retrospection the acknowledgement by the politician that there are illegal structures, delegitimises the telcos actions and legitimises the protests of the residents and activists in this contestation.

Excerpt 5.11: MPSJ

I am **quite upset** with certain telco companies then **they just install it without submitting the proper approval application** and **then we are blamed by the residents** on why we gave them the approval in such a location. So being **big companies**, these telcos, **they need to be more responsible and follow the guidelines and procedures**

In Excerpt 5.11: MPSJ, the reaction of the representative from the local government is activated with the expression “quite upset” to infer their regulations on the siting of

telecommunication structures are ignored by the telcos. The clause “they just install it without submitting the proper approval application” affirms that the actions of the telcos are nontransactive as they have acted alone without consulting the approving authorities. The phrase “then we are blamed by the residents” generalises that the irresponsible actions of the telcos paints a negative image of the local government in the eyes of the public. The articulations “big companies” and “they need to be more responsible and follow the guidelines and procedures” hint that powerful organisations like the telcos act irresponsibly because they feel that the influence they yield will deter the authorities from taking action against them .

There is a conflict in the telcos’ representation of ‘self’ as a compliant group because in reality they disregard the procedures and guidelines that are in place. This hints that the telcos are influential and hence can get away from such transgressions because they are cash cows who contribute to the development of the country. On the other hand, it also exposes that the check and balance in the approval process is not stringent enough as the telcos are able to still circumvent the system despite stringent rules and regulations imposed by MCMC, the local government and the other related approving bodies. Such outcomes do not aid in building trust as the telcos and the government bodies entrusted with the authority to deal with the issue on RF are providing reasons for the other stakeholders, specifically the residents to doubt their credibility

5.4 Educating the Public on RF

MOH is assumed to be the main actor involved in this social action as they represent themselves as being a monitoring and reviewing body on RF, and as a collaborator with MCMC to disseminate information on RF to the public (see Chapter 4 sub sections 4.2.2.1. and 4.2.2.2). The collaboration with MCMC extends to MOH being a speaker at the roadshows initiated by them.

The response to MOH's educational initiatives comes from MCMC, the telcos, the residents and the politicians. The reaction from the politician from the ruling state government highlights that he has also taken on the task of educating the public on RF because of MOH's ineffectiveness in doing the same.

5.4.1 Action

Excerpt 5.12: MOH

MOH **has been involved** in the awareness campaigns, road shows, seminars and talks nationwide **to disseminate information to the general public** and to allay their fears of the adverse health effects from EMF. We **have been continuously cooperating** with MCMC in their roadshows. **In my talks I highlight the differences between IR (ionizing radiation) and NIR (non-ionizing radiation)** which was not done previously because I found that people did not know the difference and were afraid that RF will cause cancer.

In Excerpt 5.12: MOH, MOH's involvement is transactive as the phrases "to disseminate information to the general public" and "have been continuously cooperating with MCMC on their roadshows" imply that their participation extends to the public through MCMC's roadshows to educate the public. MOH is represented as an information giver to the public and a collaborative partner with MCMC. MOH's cooperation with MCMC is also reflected in the representation of themselves as a collaborative partner in Chapter 4 sub-section 4.2.2.2. This suggests that their role in educating the public on RF complements the way they view themselves as social actors in this contestation. However the discourse suggests that MCMC is taking the lead in to educate the public on RF while MOH plays a lesser role as a speaker. This representation supports MCMC's representation of MOH as a subordinate instead of a custodian of public health in Chapter 4 sub-section 4.2.1.2 (a).

In the articulation "I highlight the differences between IR and NIR" the representative from MOH legitimises her action through distillation as she specifies the

topic that she touches on when she meets the public. MOH hints that spelling out the difference between IR and NIR is an eye-opener as the public is unaware of this fact previously. The inference is that MOH does make strides in educating the public as previously the public perceived RF as a cancer causing agent. However, Yasui (2013) states that educating the public is not an easy task as the public is confused by the conflicting reports from mainstream and non-mainstream experts on RF's impact on health. Hence he suggests that there is a need to summarise the agreements and the discrepancies of these contradictory findings and this possibly reflects that MOH may need to do more to allay the public's fear in this contestation than merely highlighting the difference between IR and NIR.

Excerpt 5.13: MOH

Non-ionizing radiation is still an **unknown phenomena even after 10 – 15 years of research because the test cannot be replicated**. ICNIRP is also **supposed to** come up with a statement on NIR this year. **Once we get all this we will call for a meeting** and work on another booklet. What is pretesting? (*Interviewer explains pretesting of communication materials*). Oh interesting, it was not done.

The phrase “unknown phenomena” to describe NIR suggests that the impact of RF on public health is unknown (see Excerpt 5.13: MOH). Hence MOH, describes NIR as something unfamiliar or mysterious and this is further corroborated through temporalisation with the articulation “even after 10 – 15 years of research...the test cannot be replicated” and this suggests uncertainty. The inference is that MOH understands that educating the public on RF is an uphill task because of its ambiguity.

MOH's role in educating the public is also indicated to be transactive as it hinges on the statement from ICNIRP on RF. However, the phrases “supposed to” and “Once we get all this...” hint on implausibility and suggest that MOH is waiting for ICNIRP's statement which may be indefinite. Further, the articulation “we will call for another meeting” highlights through temporalisation that the whole process of coming up with

another booklet is bureaucratic and time consuming. This reflects a blame avoidance strategy adopted by MOH to rationalise its lethargic response to address the health debates on RF. This corresponds with the way MCMC [see Chapter 4 sub-section 4.2.1.2 (a)] has ‘othered’ MOH for being too passive and inactive in its initiatives to deal with contestations on RF.

Further the articulation “What is pretesting” describes the inexperience of MOH, an agency entrusted with the task of producing the communication materials on RF. This is validated with the admission that the materials have not been pretested. MOH’s level of commitment comes under scrutiny as the booklet is not evaluated for comprehensibility by the target audience. This goes against the basic tenet in communication which is to “deliver the right message to the right audience in a language that the audience understands and accepts (Drewniany & Jewler, 2011, p. 18). The lack of responsibility and competency in delivering effective communication materials on RF by a powerful agency like MOH affects public trust because it has failed in imparting information to the general public successfully.

Excerpt 5.14: MOH

One of the engineers from MOH also informed us that the booklet is too technical. We want to come up with a new booklet but we have been told to do come up with guidelines for so many other things that we don’t have the time.

MOH’s action in educating the public is deactivated with the phrase “the booklet is too technical” inferring that the educational booklet meant for the public is difficult for a lay person to comprehend due to inappropriate language (see Excerpt 5.14: MOH). The articulation “One of the engineers from MOH also informed us” infers that MOH is aware of this problem. However, the articulation “we want to come up” agentialises MOH’s intention of revamping the booklet to make it more comprehensible for the

general public. However, the articulation “but we have been told to do come up with guidelines for so many other things” generalises that the agency has a heavy work load. For this reason, MOH’s action is temporalised with the phrase “we don’t have the time” indicating that they are short-handed or that the health debates on RF is not top priority, and therefore more pressing matters take precedence over redoing the booklet. Hence MOH is legitimising their inadequate action on RF on time and human resource constraints.

Excerpt 5.15: MOH

These booklets are distributed to all the participants of seminars or talks on the health effects of RF: These booklets were also distributed to all the State Health Departments in Malaysia. It is also **made available on request**. This booklet can also be downloaded from the MOH website, <http://engineering.moh.gov.my>. I don’t have the figures for the number of hits this website gets. It is handled **by the IT people**.

The fact that the booklets are distributed to all participants and State Health Departments in Malaysia denotes that MOH’s actions is transactive because the beneficiaries are the public (see Excerpt 5.15: MOH). Also the phrase “made available on request” confirms that MOH’s actions is agentialised because it infers that they are responsible in distributing the booklet to anyone who wants a copy. The act of distribution is also represented via deagentialised as the document exists online. On the other hand, the accountability of monitoring the website is represented via distillation through the phrase “by the IT people” signalling that the agency’s work is completed once the document is uploaded on the website and from then onwards the “IT people” are responsible for the material.

The inference is that the actions of each department within MOH are autonomous because they do not report to each other. It hints that there is no inter-department communication or feedback on the initiatives taken by departments within MOH on

educating the public on RF. This signifies that there is lack of accountability and each section in MOH is merely completing their task. Hence, MOH needs a “mechanisms to promote greater accountability and transparency, as well as enhancing the skills of the people in the public administration” (Lau, 2012, p. 2) because this is crucial in building trust.

5.4.2 Reaction

Excerpt 5.16: MCMC1

So far Ministry of Health **tried initiating updating this book** but **unfortunately this was not formalised so it did not take off**. We will have to wait for another meeting to see if it will take off. **You know people have other things to do and if it is not formal than it becomes difficult**.

In Excerpt 5.16: MCMC1 the role of MOH is deactivated as there is no progress on updating the information booklet. The phrase “tried initiating” alludes that there is intention but the articulation “unfortunately this was not formalised so it did not take off” indicates that the project was stalled. The expression “not formalised” indicates that the process is interactive and involves bureaucratic red tape but the decision makers involved in approving the updating the book are backgrounded. However it can be inferred that there is a hierarchical system of administration in MOH which perhaps slows down decision making and this is indicated in the articulation “We will have to wait for another meeting to see if it will take off”. This indicates via temporalisation the cycle of waiting “for another meeting” and hints that this does not guarantee that a meeting to discuss this update will take place in the near future. The phrase “if it is not formal than it becomes difficult” describes that rigid procedures need to be followed before work can be done on the book. Again the articulation “You know people have other things to” indicates that updating the book is not a priority for MOH. MOH expresses a similar response for their inaction in sub-section 5.4.1 Excerpt 5.14: MOH, citing lack of time and manpower.

Excerpt 5.17: Telco A

They came up with a booklet, a guide to mobile phone... something like that **but unfortunately I think they never distributed this book well enough**. They **had it in the store for some time** and, then you have to request for it, they gave it to you if you asked for it **but they did not really reach out very far**.

In Excerpt 5.17: Telco A, the telcos deactivate MOH's action with the phrase "but unfortunately I think they never distributed this book well enough" and the phrase "had it in the store for sometime". The inference is that there is little or no movement of the booklets to the general public. Besides, MOH's actions are also represented through spatialised with the phrase "but they did not really reach out very far" indicating that MOH is not proactive in ensuring that the public receives the information booklets. A similar representation of MOH as being too passive is expressed by Politician C in Chapter 4 sub-section 4.5.2.1. Overall the telcos' reaction hints that MOH's efforts lack initiative and even implies that there is wastage of public funds as they do not accomplish their responsibility of educating the public effectively. The telcos are also shifting the blame in this contestation to MOH because of its lukewarm attempt in educating the public on RF. Consequently the telcos are absolving themselves of any wrong doing.

Excerpt 5.18: Resident C

I have **yet to see any news or publicity from the ministry** on the exposure of the harm and effects. **I didn't read about it**. **If they could publish those in newspaper as well**, it would be more helpful because **older generation will not surf internet**. **Some of them rely heavily on the daily newspapers**.

In excerpt 5.18: Resident C, MOH's initiatives is again deactivated. The phrase "yet to see any news or publicity from the ministry" objectivates MOH's actions by temporalisation hinting that their educational initiatives on RF have not filtered down to some members of the public though they invested time, effort and public funds in these programs. Further, the articulation "I didn't read about it" suggests that MOH's actions are nontransactive as the educational plans are stagnant and have not moved to

the target audience. The articulations “If they could publish those in newspaper as well”, “older generation will not surf internet” and “Some of them rely heavily on the daily newspapers” highlight through distillation two aspects that MOH overlooked in their initiatives: firstly print media is still relevant to the Malaysian public, and secondly senior citizens are generally not tech savvy and so not all of them use the internet. This indicates that MOH does not conduct a thorough assessment of their intended audience and this is reflected in their choice of media which is deemed to an ineffective as the information is not accessible by public.

Excerpt 5.19: Politician D

I think the materials **are appropriate but the mode of transmission** to the stakeholders or members of the public is **too passive**. It’s like I’ve printed the publication, I’ve done my part, and now it’s up to you to go and find the channel. I do not think the members of the public know how to find a way to access the publication. Most of the publication, we **don’t even have a digital format** that can be downloaded.

The politician contradicts the telcos, the residents and even MOH on the suitability of the materials by declaring that the informational materials “are appropriate” (see Excerpt 5.19: Politician D). Instead, the politician highlights MOH’s actions in the articulations “but the mode of transmission” and “too passive” to suggest that they are not using the appropriate channel to reach out to the public, and that they lack initiative. MOH’s action is also descriptivised in the articulation “It’s like I’ve printed the publication, I’ve done my part, and now it’s up to you to go and find the channel” to imply that they are leaving it to the residents to source for the information on RF. This indicates that MOH is not acting responsibly to ensure that the information on RF reaches their intended audience. Similar reactions to MOH’s initiatives are also echoed in sub-section 5.4.2 by the telcos in Excerpt 5.17: Telco A and the resident in Excerpt 5.18: Resident C.

MOH's initiatives are perceived to be ineffective as the public is unaware of the availability of the booklet on RF. This shows through generalisation that the communication flow from the source to the target audience is not successful. However, the politician delegitimises her own credibility with the articulation "don't even have a digital format" as a digital format is available online. This suggests that perhaps the politician is just cashing in by aligning with the public to appear popular. This is reflected in the politician's claim that firstly the materials are suitable for the public when in reality it is not and secondly when she denies that there is a digital version when the publication exists online.

Excerpt 5.20: Politician C

There isn't much publicity and I think their **awareness on the existence of such a website by MCMC and MOH is very negligible**. That can be measured by the number of visitors to the websites. So **I put up six talks** to pass the **myth of radiation impact**. **I think we look at this seriously**; it is part of public education, and **I personally wrote the copies**

In Excerpt 5.20: Politician C, the phrase "the existence of such a website by MCMC and MOH" indicates that MCMC is also involved in educating the public on RF. However the articulation "There isn't much publicity" deactivates the effectiveness of the websites because it infers that the current state of affairs is due to lack of attention by staff managing these websites. Further, the articulation implies that the lack of publicity is the result of apathy and casualness in both MOH's and MCMC's efforts of imparting information on RF to the public. The phrase, "very negligible" indicates that the majority of the public is clearly unaware of this websites. This reinforces the lack of seriousness on MOH's and MCMC's part in providing the right information on RF to the public. The inference is that the website is only a window dressing because its effectiveness is irrelevant to these agencies.

The excerpt also highlights that the politician has taken on the task of educating the public. The personal pronouns “I” in the articulation “I put up six talk...” and “I personally wrote the copies” asserts that the politician’s action is nontransactive because it is an initiative carried out by him solely. The politician’s reaction infers that that he has gone beyond the call of duty to educate the public on radiation though he is not an expert on RF. The politician activates his own role in educating the public as he identifies through distillation that he has written the texts for his talks with the phrase “...personally wrote the copies”. He implies with the pronoun “we” that the party collectively views the health debates seriously but that he is personally taking the initiative to educate the public because of the ineffectiveness of MOH and MCMC.

The term “myth” suggests that the politician is bias and not sensitive to the views of the public because it hints that he regards the public’s perception and fear towards RF as a misconception. This casts doubts on the neutrality of the politician’s views on the health debates specifically if empathy will be shown to the residents’ concerns. It also suggests that the politician is using his power to educate the public on RF because the role of MCMC and MOH in his initiative is backgrounded. This highlights the over-confidence of the politician in handling an issue that clearly needs the competence and involvement of an expert.

The act of educating the public is not coordinated but done on an ad hoc basis by anyone who has a personal interest in the contestation. Both MCMC as the regulator of the telecommunication industry in Malaysia and MOH as the agency responsible for public health are sidelined by the politician. This implies a lack of control by the agency or agencies that have the authority and responsibility in communicating with the public on RF related issues.

5.5 Protests by Residents

Dohle, Keller, and Siegrist, (2010) indicate that site selection for telecommunication structures have often resulted in conflicts between the telcos and government agencies on the one hand, and residents on the other. Likewise, the data shows that the residents and the activists protest because they perceive RF emission from the telecommunication structures is damaging to health and that the telcos do not follow guidelines when erecting the telecommunication structures. The reaction to the protests comes from politicians from both sides of the divide, MCMC, the local government, the telcos and the experts.

5.5.1 Action

Excerpt 5.21: Resident A

...don't install in front of our block enough. **We** don't care where they install, **so long not in front of us. Don't affect our residents here. If they can, they want, they insist on installing here, they should** give **us** a letter. You give **us** a **guarantee letter** that this is not harmful to **our** health. I want it in black and white. You give **us**, you confirm it is not harmful to **our** health. If anybody gets cancer **we** sue them.

In Excerpt 5.21: Resident A the phrases, “don't install in front of our block” and “so long as not in front of us” indicates through spatialisation that the residents' protest is aimed at the proposed telecommunication structures that are going to be situated in front of their apartment block. The phrases “If they can, they want, they insist on installing here” suggests that the action is transactive. The residents are referring to the negative impact of the telcos and the approving authorities' actions on them. Furthermore the pronouns “us”, “we” and “our”, hint that the residents' action against the telcos and the approving authorities is collaborative. The modal verb “should” suggest that the residents want an assurance from the authorities “in black and white” that these structures are not health hazards. This infers through distillation the specific response the residents expect from the telcos and the relevant authorities. This protest also shows

that proper guidelines have not been followed as the residents are clearly not consulted and hence they feel that they can seek recourse through legal action. Slovic (1999) attests that using the legal system to solve this problem on RF may not be fruitful as managing risk “within an adversarial legal system that pits experts against experts contradicting each other’s assessments” may further erode trust among the stakeholders in this contestation (p. 698).

Excerpt 5.22: Resident A

I am **doing a signature campaign**. This signature campaign is going to the CM’s (Chief Minister’s) office, I am not playing the fool. **All the residents** down here **are coming together** we are **signing and protesting against this installation**.

The residents protest is an interactive action and this is indicated with the phrase “doing a signature campaign” as it shows that the residents are expressing their displeasure by petitioning against the construction of the telecommunication structures (see Excerpt 5.22: Resident A). It infers that the residents’ aim of this signature campaign is to express their dissatisfaction to the Chief Minister over the telcos’, MCMC’s and the local government’s conduct over the location of telecommunication structures near their homes. This is indicated by the expression “are signing and protesting against this installation”. Their action is specially directed to the telcos but the approving authorities are possibly also implicated in this violation because of their lack of enforcement. The articulation “I am not playing the fool” infers that the residents’ protest is uncompromising and that it should not be viewed lightly. The phrases “all the residents” and “are coming together” suggest through agentialisation that the residents are taking the responsibility collectively to keep these structures away from their neighbourhood. It signifies that they are united and unanimous in their demands. The residents’ protests highlight that the social expectation placed in the telcos and policy makers to work for the benefit of the public is affected leading to distrust among these stakeholder groups.

Excerpt 5.23: Activist C

So everybody is irresponsible right now, the government, the telcos. So the people have to just fight for their rights. And we want the people who set up these towers to be responsible for the health of the residents

Activist C deactivates the actions of the government and the telcos with the phrase “So everybody is irresponsible right now, the government, the telcos” indicating that these two groups are negligent because the telcos are building the telecommunication structures discretely without engaging the residents (see Excerpt 5.23: Activist C). But, the phrase “So the people have to just fight for their rights” suggests that the protest by the residents is a transactive action as it is spurred by the undependable behaviour of the government authorities and the telcos. Similar criticisms are levelled against the government and the telcos in Excerpt 5.21: Resident A. The articulation also shows through agentialisation that the act of fighting “for their rights” is carried out by the residents themselves. The articulation “we want the people who set up these towers to be responsible for the health of the residents” hints that the residents act of protesting is legitimised as the telcos, MCMC and the local government lack accountability. This also signals that the telcos and the government bodies act in their self-interest and that this forces the residents to object collectively because their health is compromised.

5.5.2 Reaction

Excerpt 5.24: MPSJ

I have **tried to explain** to the residents **from the report** I receive that the RF is much lower than the level allowed. I really cannot do much. I’ve arranged for MCMC to meet them to prove **that the report is genuine**. Of course we have arranged such meetings for the telcos to meet with the residents and to explain to the residents but **the residents don’t accept anything**

In Excerpt 5.24: MPSJ, the local council’s reaction to the residents’ protest is deactivated with the phrases “tried to explain” and “really cannot do much”. This suggests that their effort to rationalise with the residents is met with resistance and that

there is a deadlock for further dialogue. The focus of MPSJ's reaction is objectivated with the articulation "from the report" because it indicates that their attempt to legalise the presence of the telecommunication structures centres on the findings stated in the report. The report is again given prominence when the local council tries to justify its validity by getting MCMC and the telcos to corroborate "that the report is genuine".

However, the phrase "the residents don't accept anything" implies that the residents are flatly refusing to listen to the local government on the siting of these structures. The local council seems to have accepted their unsuccessful attempt with resignation. This also highlights that the residents mistrust the authorities as the findings in the report are disregarded by them. There is a clear divide in the communication dynamics between the authorities and the residents: the authorities are trying to legitimise the telcos' actions based on factual argument while the residents delegitimise this attempt by doubting the truthfulness of their explanation. This reaction by the residents stems from the notion that the local authorities, MCMC and the telcos are parties with vested interest while they are the innocent victims who are put in harm's way.

There are contradictions in the way the local government view the protests by the residents and the construction of telecommunication structures by the telcos. In subsection 5.3.2 Excerpt 5.11: MPSJ, the local government acknowledges that telecommunication structures are erected without prior approval. This inconsistency indicates blame avoidance and manipulation by the local government to evade responsibility, and concede that enforcement of guidelines in the construction of these structures is slipshod.

Excerpt 5.25: MCMC2

We usually measure if there are complaints but in Penang **we measured about 52 sites** and we put up the news saying that after measuring 52 sites we find that **the sites are safe**.

The reaction by MCMC to the residents' protest is deactivated with the articulation "We usually measure if there are complaints" (Excerpt 5.25: MCMC2). This highlights that MCMC looks into the RF emission levels and siting of telecommunication structures only when the residents protest. This reflects that MCMC is more reactive than proactive as they wait for the residents to complain before they spring into action. Their reaction is also descriptivised with the phrases "we measured about 52 sites" and "the sites are safe". This is an attempt by MCMC to legitimise their response as it shows that they steadfastly carry out tests to ensure that RF emission levels are kept within the safety limits. It also indicates that the residents' complaints are unsubstantiated.

The politician from the opposition supports the residents' protest and this is evident in Excerpt 5.26: Politician A and Excerpt 5.24: Politician B.

Excerpt 5.26: Politician A

Yes, we have been standing together with the local residents in different areas to protest on this matter especially those **illegal towers** which are located & **built very near to the residential areas**.

The phrase "we have been standing together with the local residents" in Excerpt 5.26: Politician A, activates the agency of local residents in organising protests against illegal towers and significantly, the politician credits himself and his party with equal agency in supporting the residents' efforts. The pronoun "we" acknowledges that the residents are closely connected to the membership of the politician and his party as part of a legitimate group. This agentialises the role of the politicians and the residents as the act of protesting is clearly brought about by both these agencies. The phrases "illegal towers" and "built very near to the residential areas" deactivate the action of the

telcos as it indicates via spatialisation that they are not transparent. These articulations descriptivise the irresponsible action of the telcos in an attempt to justify the residents' protests.

Excerpt 5.27: Politician B

Now people are protesting even if it is not directly concerning them or in their neighborhood. **People are more aware.** They look at the structure and **find it fishy**, they start making noise. People who are not connected also complaint. Now **I ask the residents of Penang**, do you want to protest before the structure is put up or after? **You got to protest the moment they are thinking of putting it up.**

Similarly in Excerpt 5.27: Politician B, the action by the residents is deemed to be nontransactive as the politician describes it is an independent act by the residents. The politician infers that the residents' are protesting based on their own knowledge that RF is harmful. This is supported with the phrases "People are more aware" and "find it fishy" indicating that the public is more empowered now because they have better knowledge about RF and as a result they are more vigilant of any unusual activities by the telcos. This corresponds with the oppositions' representation of the residents in Chapter 4 sub-section 4.5.4.2, where they dismiss political involvement in the protests and identify the residents as being knowledgeable about RF.

However, the phrase "I ask the residents of Penang" suggests that there is political involvement as the pronoun "I" shows the politician's personal involvement or his intention in the contestation. The proper noun "Penang" activates the role of the ruling state government in the contestation. Political interference by the opposition is evident in the articulation "You got to protest the moment they are thinking of putting it up" as the pronoun "You" infers that he is speaking to the residents and coaxing them to stand up against telecommunication structures in their neighbourhood. The discourse delegitimises the residents' awareness on RF but instead highlights the persuasive and manipulative role of the politician from the opposition.

Nevertheless, the opposition's reaction in Excerpt 5.26: Politician A and Excerpt 5.27: Politician B is consistent with the opposition's 'self' representation as an ally to the affected residents in Chapter 4 sub-section 4.5.3.1. It implies that the opposition is using its power to manipulate the residents and legitimise their role as their mouth-piece in this contestation. They are aligning with the 'out-group' who they claim are being treated unfairly by the telcos and the politicians from the ruling state government to possibly advance their own political agenda and not to find a solution to the health debates on RF.

Excerpt 5.28: Politician D

Do you want the service or not? The whole area no phone line, no line huh, no internet connectivity huh, who suffer? Do you want that or not? So I ask them back the question lah? So you have all these the most militant resident association in Subang Jaya area, so in the end who affected, who suffer?

In Excerpt 5.28: Politician D, the politician from the ruling state government on the other hand, deactivates the act of protesting as a negative action that brings about more harm than good. The articulation "Do you want the service or not? ... Do you want that or not?" sounds confrontational as the politician highlights the repercussions of decommissioning these telecommunication structures: "...whole area no phone line, no line huh, no internet connectivity...". Hence, the residents' action is delegitimised because it is inferred that telecommunication services will be disrupted. The expression "militant resident association" is a strong negative connotation of the residents because it describes them as aggressive, defiant and unreasonable. The politician also naturalises the presence of these structures for convenience and uninterrupted communication. The phrase "...so in the end who affected, who suffer?" hints that the residents will ultimately suffer because of their own wrongdoing.

The response from the politicians from ruling state government conveys a negative representation of the residents. However, the politician is portrayed as progressive and committed in improving the residents' quality of life by providing good telecommunication infrastructure. The residents are pictured to be unreasonable and unable to see the bigger picture. A similar reaction is echoed by the politician in Chapter 4 sub-section 4.5.2.2 where the residents are stereotyped as retirees with low levels of knowledge on RF.

The reaction from the politicians from both sides of the divide legitimises the roles they play in this contestation: the opposition as the residents' ally and the politicians from the ruling state government as a transparent and responsible government. Nevertheless, the representation is such that each side is trying to delegitimise the 'other' by looking at the health debates in conflicting ways. This shows that each side supports the views and position of their own political parties in this contestation and that there is no genuine concern for addressing the real problem which is the health debates on RF.

Excerpt 5.29: Telco A

So we have tests equipment and we ask MCMC to conduct tests to show emission levels that are within the requirements and we get the agency, MINT who have specialised equipment to test the level and it **clearly shows no threat** but these residents are still weary, they are not really convinced. So what we did was last year **was we also engaged media groups.**

In Excerpt 5.29: Telco A, the telcos' reaction to the protests is activated with the phrase "we have tests equipment and we ask MCMC to conduct tests" which shows that they respond to the protesters by requesting MCMC to verify the RF emission levels. This indicates that MCMC as a neutral party holds more weight and that the telcos have a credibility problem with the residents. This corroborates with MCMC's representation of the telcos in Chapter 4 sub-section 4.2.1.2 (a). Besides MCMC is the regulator of the

telecommunication industry in Malaysia and hence is believed to have more power, influence and authority to conduct the tests on behalf of the telcos.

Additionally, an independent body, MINT is also invited to validate the RF readings and the phrase “who have specialised equipment” indicates through distillation that the act of measuring the emission levels are conducted by an expert agency with superior equipment. This legitimises the validity and reliability in the tests undertaken by both MCMC and MINT parties. Further the phrase “clearly shows no threat” suggests that the tests have proven that the telcos have not breached any guidelines and that the protests are baseless. Such disclosure justifies the telcos’ safety procedure and reinforces their ‘self’ representation as a complaint organisation that adheres to strict guidelines (see Chapter 4 sub-section 4.3.1). It highlights that the telcos are making a concerted effort to verify the RF emission levels by engaging specialised agencies.

Furthermore, the phrase “So what we did was last year we also engaged media groups” shows through activation that the telcos are frustrated with the residents’ sceptical response and are therefore cooperating with the media to reach out to the public. The media’s involvement is useful in risk communication as it aids in shaping public perception (Bohlin & Host, 2014, p. 2). It also infers that the telcos are using the opportunities provided by the media to get their side of the story across to the residents as the media is an influential actor in this contestation.

Excerpt 5.30: Expert 2

So the protest is sometimes due to jealousy because like I mentioned most of the rooftop structures are **paid monthly rental** of RM 1,000 to RM2,000 by the telcos. The people next door who don’t get anything are obviously unhappy.

In Excerpt 5.30: Experts 2, the expert’s response suggests that there is something more sinister in the residents’ protests. The phrases “So the protest is sometimes due to

jealousy” and “paid monthly rental” generalise that the economic factor is the motive behind these protests. This is confirmed via agentialisation in the articulation “The people next door don’t get anything are obviously unhappy” indicating that the protests are initiated by the disgruntled residents who do not receive this monetary inducement from the telcos. Therefore, it is inferred that the protests are motivated by the residents’ lack of rental income and not RF’s impact on health.

This economic motivation has reverberated in several representations as a motivating factor for the residents’ protests (see Chapter 4 sub-sections 4.2.1.2 (c), 4.2.2.3 (c), 4.2.3.4 (c), 4.3.2.3, 4.4.3, 4.5.2.3, 4.8.2.3). Interestingly, the opposition, the activists and the media in their representation of the ‘other’ do not cite economic reason as a motive for the residents’ protests. This infers that either the politicians from the opposition are unaware of this motive or are ignoring this motive and using this conflict for their own political mileage. The activists on the other hand are so ingrained with their own belief that RF is injurious to health that they are indifferent to all other information. The media as indicated in Chapter 4 sub-section 4.7.1.1 is probably providing fair reporting by only reporting “what each side is saying” and therefore is unaware of the motive of some of the residents who oppose these structures. The reaction to the residents’ protests by the various stakeholders support Slovic’s (1999) view that each stakeholder group looks at the issue based on their own vested interest and own interpretation of the issue.

5.6 Media Reporting on RF Related Issues

The media plays an important role as it shapes many people’s opinions on health related issues. According to Yasui (2013) and Covello (2010), one of the challenges facing risk communication is media bias and the fact that it is difficult to convey science related information to the general public in layman’s terms. Therefore the actions of the

media and the reactions to their style of reporting are covered in sub-sections 5.6.1 and 5.6.2.

5.6.1 Action

Excerpt 5.31: Journalist C

We will not question the facts given because we trust the source because it's **technical information** unless the information given is obviously incorrect. We will quote the source as a **statement from an expert**. **We only quote from the source. The news is recorded from what they have said, it was not from us.** We just record whatever is said by both sides. **We are not aiming or targeting anyone we are just covering a socio-political issue.** We cover the RF issue and not anyone in particular.

RF is difficult to comprehend and as such, the media deactivates their action in reporting this issue with the clause “We will not question the facts given because we trust the source” (see Excerpt 5.31: Journalist C) by asserting that they merely report the news in an impartial manner. The articulation “because we trust the source” highlights the element of truthfulness in their reporting as it is based on experts’ opinions. Further, the phrases “technical information” and “from an expert” descriptivise that the media has no hand in influencing the public because RF is a specialised area in science in which the journalist has limited knowledge. This is again substantiated with the articulations “only quote from the source” and “The news is recorded from what they have said, it was not from us”. It is clear that the action is transactive as the act involves the experts who are the actors that provide the information and the journalists who process the information for the news coverage.

Therefore, the media legitimises that their news reporting is not biased as it is based on factual information and not on their interpretation of the issue. Accordingly, the media’s actions are generalised with the phrases “not aiming or targeting anyone” suggesting that they have no ulterior motive and that any inference of news biasness is

“due to the distortion in the environment outside of the control of the media” (Eveland & Shah, 2003, p.103). This is supported by the articulation “just covering a socio-political issue” as it emphasises through distillation that the media coverage on RF is an environmental problem that involves actors from both the social and political spheres and that the conflicting views on the media reports are due to difference of opinions or any other unknown agenda. This denotes that the media merely reports the news based on information from the experts and that social, political, and historical factors shape people’s perception of risk (Slovic, 1999).

Excerpt 5.32: Journalist C

The newspapers **cover news based on issues that will interest the target market**. Besides this RF issue we cover all types of news like political news and sports news. **The first thing about reporting is we have to choose an interesting headline** to attract reader’s attention because we are market driven and we need to maintain or increase our readership our circulation.

The media relies on readership and circulation to remain profitable. This is indicated in Excerpt 5.32: Journalist C, in the phrase “cover news based on issues that will interest the target market”. The articulation infers that the media’s action is transactive because it publishes news that is relevant and appealing to their intended audience to achieve the goal of increased circulation. The articulation “The first thing about reporting” descriptivises media reporting by highlighting that there are prerequisites for writing news reports in order to generate interests. Further, the phrase “have to choose an interesting headline” shows via distillation the micro-action in reporting that it is instrumental in drawing readers to the article. The emphasis on the headlines hints that the headlines are tweaked to be attention grabbers, while the actual article is written objectively. This perhaps indicates why the media is accused of sensationalising news.

Nevertheless, the newspaper industry is activated with the clause “we are market driven and we need to maintain or increase our readership, our circulation” indicating

that they operate like any other profit-making enterprise. Hence, the presupposition is that the media's motivation is linked to profits and monetary gain. Cookson (2010) supports this by stating that the scientists expect the journalists to play an educational role or health promotion role "which is alien to the media's independence" as "its primary role is to entertain, interrogate, expose, and to ultimately to sell papers or attract viewers or listeners" (p. 113).

5.6.2 Reaction

Excerpt 5.33: Telco A

We have tried and I think from our perspective **we work very closely with the media** because **when there are complaints we are very open to share and speak to the media** because at times **the powers are low and the emission is low but they still want us to remove the towers**.

The telcos react to media reports on RF positively as they too are tapping the media in this contestation to get their message across to the public (see Excerpt 5.33: Telco A). Consequently, their actions are seen to be transactive because the articulation "we work very closely with the media" implies that there is strong cooperation between two parties namely, the telcos and the media to address public complaints. This action by the telcos is also confirmed in sub-section 5.5.2 where they acknowledged that they work with the media to address this conflict on RF. Accordingly, the telcos activate the the media with the phrase "when there are complaints we are very open to share and speak to the media" indicating that the media is willing to engage with other stakeholders in the dispute. This supports the media's assertion that they provide equal voice to the parties in the contestation. The articulation "the powers are low and the emission is low but they still want us to remove the towers" hints that the telcos' operations are affected by the residents' demands and hence they appreciate the media's role as it provides

them an avenue to highlight the setbacks of decommissioning strategically located telecommunications structures.

The inference from the telcos is that the media does report fairly. Also the telcos are of the view that they should not antagonise the media but should instead work with them to get their side of the story told to the public. In this social action, both the telcos' and the media's roles are legitimised as the media's portrayal infers that its reporting is impartial while the telcos on the other hand indicate that as a complaint organisation, it has nothing to hide.

Excerpt 5.34: Activist 1

The media is fair in the reporting. In fact, a reporter from the media alerted me on this issue and that's when I started noticing these structures. The media comes for our press conferences and they do report accurately.

In Excerpt 5.34: Activist 1, the activist activates the action of the media by appraising them positively with the phrase "is fair in their reporting". This indicates that the media reports do not incite the public to react negatively against RF but instead that they are reporting responsibly and not distorting the issue. The activist hints that the relationship with the media is transactive and this is inferred with the phrase "the media alerted me". This implies that the beneficiary of the media's action is the activist as the information by the media has created awareness on RF. As a result, the activist's perception towards RF is agentialised as the activist is influenced by the media. This is further supported by the articulation "that's when I started noticing these structures" inferring that the activist only came to know about the telecommunication structures and RF through the intervention of a reporter from the media.

The reaction of the activists corresponds to the activists' representation of the media in Chapter 4 sub-section 4.6.2.1 where it is inferred that the media operates in a

direction favourable to the activists. There is a possibility then that the media and the activists are on the same side of the fence as they are influenced by the same ideology. Similarly, Eveland and Shah (2003) posit that when there is ideological similarity, the individuals use their “interpersonal environment and the information conveyed to them, to infer reality” (p. 106).

Excerpt 5.35: Resident A

I get most of my information from the internet but the media especially the Chinese newspapers **are good**. They **give good write-ups** because **they have a section on health**

In Excerpt 5.35: Resident A, the resident descriptivises the action of the Chinese media positively with the phrases “are good” and “gives good write-ups”. This reaction by the residents corresponds to the reaction of the activists in Excerpt 5.34: Activists 1. This suggests that the articles in the Chinese newspapers apply the same standard of judgement as them in this contestation. Besides, the articulation “because they have a section on health” shows that the resident views the media via distillation as it asserts that the Chinese media considers RF’s impact on health as important because it has a health column that covers this issue. The articles in the health columns are probably negative reports on RF but the resident feels that the media is doing their job. The interpretation of the news gives an indication of the direction of the attitude of both the resident and the media, or it can be inferred that the resident is influenced by the media’s views on RF.

In addition, the phrases “give good write-ups” and “have a section on health” show that the action of the media is transactive because they obviously know their target audience and are feeding them with news that interests them. This probably leads to an increase in circulation and profits. This concurs with the media’s action in sub-section 5.6.1 Excerpt 5.32: Journalist C, where the journalist highlights that the media

ultimately needs to maintain or increase their circulation like any profit-oriented organisation.

Excerpt 5.36: Expert 6

They search for things to write, they want to sensationalise things. Some of them you know contact us and of course we do reply and **some of them are quite fair** as they will write what we say **but they like to sensationalise the news because such news sells newspapers.**

In Excerpt 5.36: Expert 6, the articulation “They search for things to write, they want to sensationalise things” indicates that the expert views the media’s action as nontransactive. The inference is that the media reports news on RF to achieve its own goal which is to increase circulation. It suggests that the media is inquisitive and looks for a scoop to boost their circulation and this scoop mentality is the scion of many competing news media agencies. It also hints that the media does not share its responsibility with the experts in providing the public with accurate information but instead is focussed on profits and this is indicated in the articulation “because such news sells newspapers”. It suggests that the newspapers are using the RF conflict for their own benefit.

The media’s action is also descriptivised with the phrase “some of them are quite fair” inferring that a handful of journalists do stick to facts cited by the experts and do quote them accurately. However, the articulation “but they like to sensationalise the news because such news sells newspapers” generalises the action of the media on the whole. It complements the study of Lorente & Alonso (2014) who highlight that usually the media presents “a dramatic depiction of the scientific community enacting quarrels and disagreements” (p. 4).

5.7 Summary

This chapter examines five (5) thematic social actions in the discourse of RF and its impact on health. The social actions are granting approval for the siting of telecommunication structures, construction of telecommunication structures, educating the public on RF, protests by the residents and finally media reporting on RF.

The representations generally corresponded with that of the 'self' representation of the social actors in Chapter 5 and so legitimise their role in the social practice. However, the reactions from the affected stakeholders' delegitimise these representations as they feel that there are contradictions in the actions and 'self' representation of the actors.

The approval process amplifies the tight and rigid bureaucratic process of the local councils, MCMC and the technical committee. Responsibility and accountability is shared among the approving authorities based on their areas of specialisations. The representation shows through agentialisation the area of influence of each partner in this process. This infers that decision making and conflict resolution can be difficult because each agency has different areas of jurisdiction. The process is also deagentialised by a set of guidelines that the telcos are required to comply to in order to be granted approval. The residents are also given voice in the approval process as they can object the construction of telecommunication structures, but the local government has the power to determine the validity of their objections. The analysis also uncovers the powerful role of the politicians who can over-ride the decisions made by the approving committee.

The response from telcos infers that they are not contesting such tight and rigid regulations and this supports their 'self' representation as a compliant organisation that

toes the line to avoid monetary loss. It also highlights the power dynamics between the telcos and MCMC who is the regulator because the telcos highlight MCMC's involvement in granting approval for telecommunication structures and backgrounds the other stakeholder's roles in this social action.

There are ambiguities in the telcos' representation pertaining to obtaining approval for the siting of telecommunication structures and the construction of these structures. The telcos claim that they are compliant to MCMC's guidelines and are responding to customer demands in choosing siting locations. However, the residents maintain that the construction of telecommunication structures is a nontransactive act because it is carried out by the telcos in a covert manner. In support, the politicians from the ruling party highlight the existence of illegal structures and the local government too affirms that some telcos install structures without going through the proper approval process. These contradictory actions by the telcos undermine their credibility. It activates the telcos as powerful organisations that can circumvent the system as the inference is that there is neither a proper monitoring nor a reporting mechanism to monitor the construction of telecommunication structures.

MOH is passivated in their role of educating the public on RF because the analysis indicates that they lack initiative and accountability. They have come up with a booklet on RF that is too technical and which has yet to be updated. An electronic version is made available online but the website is not monitored. They attribute this to lack of manpower and work overload. MCMC, the telcos, the residents and the politician from the ruling state government deactivate MOH's initiatives because it is not proactive enough in disseminating information on RF to the public. The politician from the ruling state government has also taken it upon himself to educate the public on RF. This

highlights a lack of coordination among the stakeholders responsible for safeguarding public health.

The residents' protests activates the telcos' irresponsibility as telecommunication structures are placed too close to residential homes. This indicates that they do not adhere to guidelines. The analysis also reveals that the telcos, the local councils and MCMC are irresponsible, lack accountability and are acting in their self-interest. These agencies claim that the residents' protests is with no basis as reports from recent testing show that RF emission levels are low and pose no health risk. The residents view these reports with scepticism. The politicians from the opposition however support the residents and this is seen as a form of manipulation to win public support. This hints that there is lack of credibility and trust among the stakeholders as each group looks after its own self-interest.

The media debunks the accusations that they sensationalise news and that they are bias in their reporting. They legitimise their actions by claiming that their reports are based on factual information and that they are mainly quoting direct from the source. They also claim that they give equal voice to all stakeholders. However, they acknowledge that they operate like any business entity and therefore rely on readership and circulation to survive.

The telcos, activists and the residents' response to the media and its reporting on RF related issues is favourable. The telcos see the media's role positively as they infer that working with the media gives them an opportunity to tell their side of the story to the public. The activists and residents feel that the media reporting is fair and knowledgeable which perhaps reflect that they transcribe to the same beliefs and values.

The experts however, view the media's actions negatively because they perceive that the media sensationalises news and creates rifts in the scientific community.

On the whole, the actions of the stakeholders suggest that there is lack of trust and credibility among the stakeholder groups. There is a tendency for agencies with similar views to legitimise their systems and beliefs as more reliable and delegitimise the actions of the 'other' that have opposing beliefs. This then poses challenges for risk communicators as there is no consensual agreement and co-operation among the various stakeholders.

CHAPTER 6: APPLICATION OF FINDINGS FOR EFFECTIVE RISK COMMUNICATION

6.1 Introduction

This chapter applies the findings from Chapters 4 and 5 to the adapted Key Steps in Applying Effective Risk Communication framework to formulate effective risk communication strategies to address RF's exposure on public health. So, the objective of this chapter is twofold: to use the findings on the adapted framework to identify the hindrance in effective risk communication (sub-section 6.2) and based on the identified gaps to formulate recommendations for successful risk communication strategies (sub-section 6.3). The chapter concludes with a summary of this chapter (sub-section 6.4).

6.2 Application of Findings

This section employs the findings from the analysis of the representations of social actors (Chapter 4) and social actions (Chapter 5) to the adapted Key Steps in Applying Effective Risk Communication framework. However, my adapted Key Steps in Applying Effective Risk Communication framework has been adjusted to reflect the relationship between social practices and risk communication. The application of the findings from Research Questions 1 and 2 on the adapted framework shows this relationship as a dialectical relationship between a particular discursive event and the situation(s), institution(s) and social structure(s), which frames it (Fairclough & Wodak, 1997).

The recalibration of my adapted framework is in line with Wodak's and Meyer's (2009) view that critical in CDA does not necessarily relate to pessimism but it is a critical investigation of a social phenomenon that does not inevitably have to be taken

for granted but can be challenged and rectified if necessary. Similarly, Fairclough (2014) states that the essence of CDA is not solely the critique of discourse but the explanation of how discourse associates with other elements of the existing reality so as to get a good understanding of the problem.

Therefore, the adjustment to the framework takes into consideration to CDA's tenets which is to adopt critical goals when investigating verbal interactions, to ascertain how discourse shapes and is in turn, shaped by social structures, and to apply the findings to address social issues (Fairclough et. al. 2011).

Figure 6.1: Dialectical Relationship Between Social Practices and Risk Communication, illustrates the adjustments to my adapted Key Steps in Applying Effective Risk Communication framework.

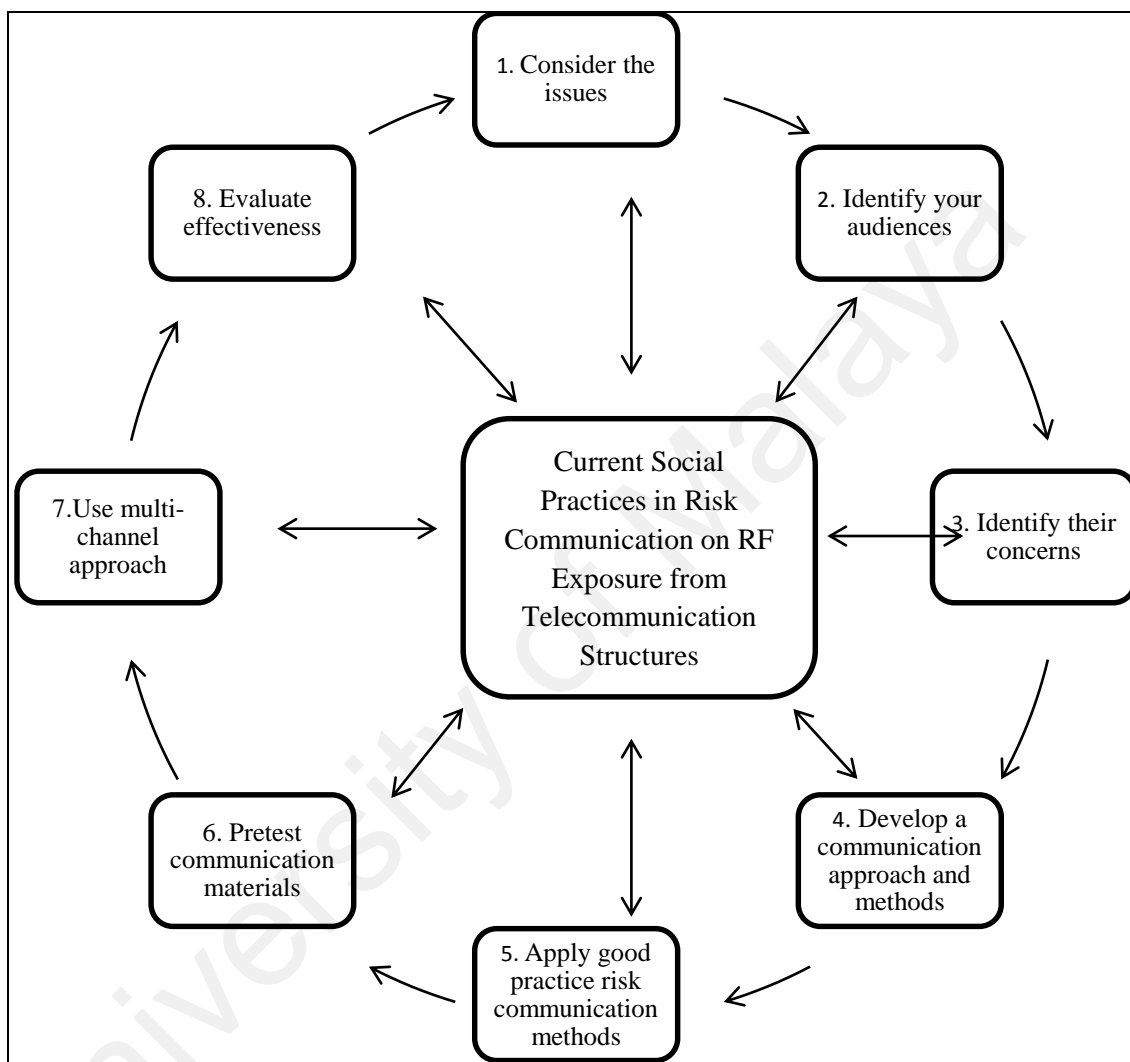


Figure 6.1: Dialectical Relationship Between Social Practices and Risk Communication

The findings from Research Questions 1 and 2 are applied to my adapted Key Steps in Applying Effective Risk Communication framework as shown in Figure 6.1. The 8 steps in the framework are explained sequentially in sub-sections 6.2.1 to 6.2.8.

6.2.1 Step 1: Consider the Issue

The social actions of the various social actors determine if site assessment has been perceived to be done transparently with the affected residents and other stakeholders. Kemp (2009) contends that the issue should be looked at from three perspectives: the importance of the site to the telcos, the presence of any sensitive local siting issues, and finally, on any other local community concerns.

The analysis of the social actions pertaining to the construction of telecommunication structures infers through agentialisation that the telcos are responding to customers' demands and MCMC's requirements in terms of quality service. Their actions are also deagentialised as they are required by law to conform to quality performance regulations. In addition, the telcos' 'self' representation as a compliant organisation suggests that site selection is done to comply with the needs of the public, the regulator and the law (see Chapter 5, sub-section 5.3.1 Excerpt 5.7: Telco A, *...planning done by our network team...feedback from marketing department, customer service...coverage requirement*). However, in Chapter 4, sub-section 4.4.1.1, the resident assumes that proper guidelines are not followed as they are clearly not consulted (Excerpt 4.39: Resident E: *...whom can I complain to?...most residential areas have these towers...nothing we can do...we're voiceless to them*). This is also reflected in the act of constructing these structures as the resident describes the activities of the telcos as being rushed, vigorous and unannounced (see Chapter 5 sub-section 5.3.2 Excerpt 5.9: Resident D, *...did it in daylight...wondering what was going on...did nothing when telco started the construction*). This suggests that the telcos erect the telecommunication structures stealthily without engaging the local residents. In addition, the politicians and even the local councils through existentialisation acknowledge the presence of many illegal structures (see Chapter 5 sub-section 5.3.2 Excerpts 5.10: Politician C, *...there*

are illegal installation..., and Excerpt 5.11: MPSJ , *...they just install without submitting approval application...*). This infers a lack of enforcement as the social actions in the approval process denotes a stringent procedure (see sub-section 5.2.1). The presence of illegal structures reflects a lack of credibility of the organisations that are entrusted with the power to oversee that the approval process and implementation of decisions are executed according to laws and guidelines. The actions of the telcos have prompted the residents to protest against the construction of telecommunication structures that do not adhere to guidelines as these structures are deemed to be harmful to health, yet it is built close to sensitive areas like residential neighbourhoods (Chapter 5, sub-section 5.5.1, Excerpt 5.21: Resident A, *...don't install in front of our block...*).

The controversy over RF has also drawn the politicians from the opposition into the conflict as they have become the mouth piece for the residents (Chapter 5 sub-section 5.5.2, Excerpt 5.26: Politician A *...Yes, we have been standing together with the local residents....*). The involvement of politicians complicates the issue because of their manipulative nature (see Kasperson, 1986, Mitchell, 1992, Slovic, 1993, Frewer *et al.*, 1996, Peters *et al.*, 1997, Slovic, 1999, Petts *et al.*, 2001, McComas, 2003, Hansson, 2015). This signals that the motivation for the politicians from the opposition in particular, is political mileage rather than genuine interest in the welfare of their constituents. The findings in Chapter 4 corroborate with this assumption (see sub-sections 4.2.1.2(c) Excerpt 4.9: MCMC 1 *...used by one party against another party...here it is politically motivated...*, 4.2.3.4(c) Excerpt 4.29: MPPP, *The politicians are using this issue to garner support...*, 4.5.1.2 Excerpt 4.57: Politician C, *...he thinks he might lose votes...and just outright object to it...*, 4.6.2.1 Excerpt 4.71: Activists A, *...used this issue to make noise and gain political mileage...*, and 4.7.2.3 Excerpt 4.79: Journalist B, *The tower game has moved from a perception to a political game...*). The

political involvement has created a power struggle between the ruling state government and the opposition, and this hampers conflict resolution as in most cases, each party wants to win rather than find an amicable solution to the problem (see Leiss, 1995).

Besides, MOH and the local government through identification have activated the Chinese community for being vocal for cultural reasons as they do not want these towers close to their homes because of 'feng shui' (Chapter 5 sub-sections 4.2.2.3(a) Excerpt 4.14: MOH, *...just want the tower removed because of bad feng shui...*, and 4.2.3.4(b), Excerpt 4.27: MBPJ, *...The Chinese do not want towers erected in front of their house, feng shui problem...*). Relatedly, MCMC, the telcos, the politicians from the ruling state government, the media and the experts have mitigated the role of the residents for their negative perception on RF and have attributed this to their low levels of knowledge on the issue (Chapter 4, sub-sections 4.2.1.2(b), Excerpt 4.8: MCMC 1, *...if you have the wrong perception than it's difficult to convince you...*, 4.3.2.2: Excerpt 4.35: Telco B, *...one-sided view, not based on facts and figures*, 4.5.1.2(b) Excerpt 4.56: Politician D, *...they have not been educated, ...not aware, ...have been misled...*, 4.7.2.2 Excerpt 4.78: Journalist C, *...not really educated but are scared and listen to rumours, and they don't really understand...*, and 4.8.2.2 Excerpt 4.83: Expert 2, *...it is very difficult to speak to the public who have formed opinions and refuse to change...*).

Other issues that have emerged from the analysis are the residents' jealousy over rental income received by landlords from the telcos (Chapter 4 sub-sections 4.2.1.2(c) Excerpt 4.10: MCMC1, *...because of jealousy over rental...*, 4.2.2.3(b) Excerpt 4.16: MOH, *...some complain because of rental, they don't get the rental...*, 4.2.3.4(c) Excerpt 4.28: MBPJ, *“...the rental is good...This leads to jealousy”*, 4.3.2.3 Excerpt 4.37: Telco B, *...like I mentioned about rental and money...* and Excerpt 4.38: Telco A,

...one man very vocal...if we want to settle the problem he can help us solve the problem by using his shophouse...it is all about money, 4.5.1.2(c) Excerpt 4.57: Politician C, *...It's all about rental, business and benefits*, 4.6.2.3 Excerpt 4.73: Activists C, *...They are only seeing dollars and cents ...*, and Chapter 5 sub-section 5.5.2 Excerpt 5.30: Expert 2, *...so the protests is sometimes due to jealousy...rooftop structures are paid monthly rental of RM1000 to RM2000 by the telcos...*). In addition, the residents themselves especially those who do not receive this income 'others' the actions of the telcos and the landlords for being unfair as they are exposed to RF, while the landlords receive the revenue (see Chapter 4 sub-sections 4.4.1.3 Excerpt 4.42: Resident A, *...No sweat just put the structure on the rooftop, every month you collect RM5200 clean. At whose expense? At our expense of course...*, and Excerpt 4.43: Resident C, *...they earn a lot of money...money comes first, concerns later*). This suggests that there is firstly, lack of trust among the residents themselves, and secondly, some residents who protest have a hidden economic motive rather than health concerns associated to RF emissions.

So, the findings highlight the following issues from the viewpoint of the telcos, the residents, and the community:

- i. The telcos consider the sites important for its operations. However, the inference is that it does not adhere to guidelines as the residents are not consulted prior to the construction of telecommunication structures. This creates an erosion of trust as the telcos are not transparent in site assessment and in the construction of the telecommunication structures especially since there are illegal structures. The failed expectation from the actual performance of the telcos has contributed to distrust among the stakeholders. Additionally, the credibility of MCMC, MOH

and the local government is affected as these bodies are part of the approval body for the siting of telecommunication structures. This probably explains why the government and the industry officials are viewed by the public as less trustworthy (see Markon et al., 2013; Covello, 1993).

- ii. The pressing issues for the residents are RF's impact on public health and the lack of adherence to siting guidelines near sensitive areas like residential zones and schools. This major concern is clearly ignored or overlooked by the telcos. The actions of the telcos signify self-interest and this goes against its 'self' representation as a complaint body. The perceived lack of apathy from the telcos towards the residents denotes unequal power relations, and the suppression of the rights of the residents as it infers that the residents are not consulted or included in the site assessment and construction process. Hence, the residents view the telcos' actions as not credible and this lack of trust is a significant contributing factor to the health debates on RF.
- iii. The community in general feels some of the residents' health concerns are not genuine as it is inferred that some residents have an ulterior economic motivation: rental income from the telcos. The Chinese community also does not want these structures close to their homes for cultural reasons. In addition, the approving authorities, the telcos, the politicians from the ruling party, the media and the experts blame the residents' negative risk perception on their low levels of knowledge on RF. The issue is also complex with the involvement of politicians from the opposition as this group of stakeholders are perceived to have an ulterior motive too which is to win votes from the electorates in the next general election.

In summary, the issues reflect conflicts between ‘us’ versus ‘them’ based on ideologies “associated with group interests, conflicts and struggles” that are related to social groups, institutions, organisations and other forms of social structure (van Dijk, 1998b, p. 5). The issues have primarily contributed to an erosion of trust. Renn (2010, p. 90) contends that “trust is the invisible product of a successful and effective risk communication”. He adds that trust cannot be built over-night and he advocates an atmosphere with a systematic feedback and dialogue to enable trust to grow. Hence Renn (2010) adds that there is a need to look at strategies that foster the growth of trust like “listening to the public concerns and, if demanded getting involved in responsive communication” (p. 90).

6.2.2 Step 2: Identify Your Audience

The telcos are the agents responsible for the construction of the telecommunication structures. As such, Kemp (2009) advises the telcos need to identify the audience from two perspectives in order to formulate effective risk communication strategies. The first perspective is to identify who is affected directly by the telcos’ actions and the second, is to ascertain who will be indirectly affected like the regulator, the local government, the politicians and the media.

The residents are directly involved based on several perspectives. Firstly, in terms of spatialisation, the residents living in the vicinity of the telecommunication structures portray themselves as the affected participants in this contestation as they perceive themselves to be direct receivers of the negative impact of RF which they claim is harmful to health (Chapter 4 sub-section 4.4.1.1 Excerpt 4.39: Resident E, *...I know this thing is unhealthy and inappropriate to be erected in residential area...*, and sub-section 4.4.1.2 Excerpt 4.40: Resident C, *...My main concern of the tower is radiation...*,

Chapter 5 sub-section 5.5.1, Excerpt 5.21: Resident A, *...give us a guarantee letter...you confirm it is not harmful to our health. If anybody gets cancer we sue you...*). Secondly, through identification by age, the residents who are aged above forty years are directly implicated and genericised as being gullible for they are influenced into believing that the RF emission from these antennas are harmful to health (Chapter 4, sub-sections 4.2.3.4(b) Excerpt 4.27: MBPJ, *...but those aged above 40 usually they will complain...*, and 4.5.1.2(b) Excerpt 4.56: Politician D, *...They are the one whole bunch of retirees who have nothing better to do...*). Thirdly, the Chinese community is directly involved because they are activated for being vocal due to cultural reasons (see sub-section 6.2.1 Step 1: Consider the issue). Finally, most stakeholder groups (except the politicians from the opposition) mitigate the residents' role for having low levels of knowledge on RF (see sub-section 6.2.1 Step 1: Consider the issue).

The other stakeholders that are affected indirectly in this contestation are MCMC, the local government, MOH, the politicians, the activists, and the media.

MCMC's and the local government's roles are significant in the approval process. MCMC is involved in verifying the technical aspects of the telco structures while the local government approves the site for construction (Chapter 5 sub-section 5.2.1 Excerpt 5.1: SSP, *...The telcos need permission from MCMC. The structures need planning permission from the local council...* and Chapter 5 sub-section 5.2.1 Excerpt 5.3: MCMC 1, *...So on the technical part yes we control that but on locations are under the local council, But before a tower can be erected it has to go through a technical committee with the local council itself...*). MOH's involvement is significant from the aspect of safeguarding public health (Chapter 4 sub-section 4.2.2.1 Excerpt 4.11: MOH, *...The MOH's Inter-Agency Advisory Committee will continue to monitor and review*

the latest scientific findings and subsequently advise the government and the public..).

This is in line with the ‘self’ representation of these three organisations: MCMC’s representation as a trusted body on RF in Malaysia, the local government’s portrayal as custodians of safety and compliance and, MOH’s representation as a monitoring and reviewing body on RF and health related issues and, as a collaborator on risk communication initiatives on RF. Therefore, the construction of telecommunication structures by the telcos in sensitive areas and the presence of illegal structures place these agencies in a predicament as it signifies that these organisations lack accountability and this affects their competency and credibility (see Chapter 5 sub-section 5.3.2 Excerpt 5.10: Politician C, *...There are illegal installations but not notified to MCMC...*, Excerpt 5.11: MPSJ, *...I am quite upset with certain telco companies then they just install it without submitting the proper approval application and then we are blamed by the residents...*). It also indicates that these government bodies though powerful, are either colluding with the telcos or are ineffective and incompetent in this contestation. Slovic, Cvetkovich and Lofstedt, Siegrist, Earle, Gutscher, Viklund, and Siegrist, et al. state that “an important factor in the way people perceive and handle risks is the amount of trust they have in authorities to regulate risk” (cited in van Dongen, Claassen, Smid, & Timmermans, 2013, p. 946). Institutional performance impacts trust as the faith and goodwill that the public have in these organisations becomes questionable.

The politicians from the opposition and the activists are also involved indirectly as they take on the role of instigators. The politicians from the opposition act as a trustworthy ally and a mouthpiece for the affected residents, and encourage the residents to protest against the telcos and the government bodies involved in the approval process (see Chapter 4 sub-sections 4.5.2.1 Excerpt 4.59: Politician A, *...main focus is to help*

the rakyat (public) in the problems they face..., Excerpt 4.60: Politician B, *...I am interested in this field because I'm a doctor, and I'm a parent... I find this issue of RF alarming so I want to help ...*, Chapter 5 sub-section 5.5.2, Excerpt 5.26: Politician A, *...Yes, we have been standing together with the local residents...*). The activists act as a pressure group that creates awareness on the perceived harmful effect of RF emission from telecommunication structures (Chapter 4 sub-section 4.6.1.1 Excerpt 4.67: Activists A, *...We want to create this awareness at national level so that is why we've asked Himpunan Hijau to join us to make our team stronger...*).

The media too plays an integral part in this contestation as it sees itself as duty bound professionals who give neutral coverage of news that is of public interest (Chapter 4 sub-section 4.7.1.1 Excerpt 4.74: Journalist A, *...The people want news and as a media company we have to cover this news to let the people know...* and Chapter 5 sub-section 5.6.1 Excerpt 5.31: Journalist C, *...We just record whatever is said by both sides. We are not aiming or targeting anyone we are just covering a socio-political issue...*). However, the other social actors accuse the media of sensationalising the issue and having its own agenda which is increasing circulation and attracting advertising revenue (see Chapter 4 sub-sections 4.2.1.2(a) Excerpt 4.5: MCMC 1, *...so the media sensationalise and people then start discussing and arguing about this issue...*, 4.2.3.4(a) Excerpt 4.23: MPPP, *... they should not just highlight the negative aspect of this issue but give an unbiased view...*, 4.5.2.2(c) Excerpt 4.66: Politician B, *...the media have their own vested interest ...Look closely, who are the advertisers? Off course they are these big telecommunication companies...*, 4.8.2.1 Excerpt 4.82: Expert 3, *...The media is very powerful and the media is not interested in talking to people like me because what I say is not sensational...* and Chapter 5 sub-section 5.6.2 Excerpt 5.36: Expert 6, *...They search for things to write, they want to sensationalise things...*).

However, the media does have a positive appeal to the residents and the activists (see Chapter 4, sub-section 4.4.2.1 Excerpt 4.44: Resident C, ...*Chinese dailies that alerted me on the issue...it was also very good that the Chinese newspapers covered the news...* Chapter 5 Excerpt 5.34: Activists 1, ...*The media is fair in the reporting. In fact a reporter from the media alerted me on this issue...*). The telcos though have taken a different stand and infer that courting the media is beneficial as it gives them an avenue to tell their side of the story (see Chapter 5 sub-section 5.6.2 Excerpt 5.33: Telco A, ...*we work very closely with the media ...we are very open to share and speak to the media because at times the powers are low and the emission is low but they still want us to remove the towers...*).

The stand taken by these social actors suggests that there is reproduction of ideologies. Ideological socialisation to a certain extent is achieved through discursively expressing, defending or legitimising their ideologies in the contexts of interaction (Oktar, 2001, p. 314). Van Dijk (1998a, p. 69) claims that ideology is a “self-serving schema for the representation of Us and Them as social groups”. This ‘Us’ and ‘Them’ representation impedes trust and openness because the legitimising and delegitimising of each other’s roles and actions uncover power struggles and inequalities.

Table 6.1 summarises the breakdown of the audience:

Table 6.1: Breakdown of Direct and Indirect Audience

Direct audience	Indirect audience
Residents : I. living near the telecommunication structures II. aged above 40 years III. from the Chinese community IV. who have low levels of knowledge on RF	I. MCMC II. The local government III. Politicians (Opposition) IV. Activists V. Media

6.2.3 Step 3: Identify their Concerns

In this step, Kemp (2009) indicates that it is prudent to understand if the affected residents recognise the need for these telecommunication structures. He also states that the telcos need to identify whether the residents have health concerns about these structures, and if the residents consider these structures to be intrusive.

In Chapter 5 sub-section 5.3.1 the siting decisions are agentialised because the telcos are responding to customer's demands for better service and less dropped calls. This infers that the public is aware of the need for the telecommunication structures as MCMC receives complaints from the public pertaining to the telcos poor service and bad coverage (see sub-section 6.2.1 Step 1: Consider the issue). The actions of the telcos are also concretised because the construction of these structures is based on the requirements of MCMC. The need for better service requires the construction of these structures. This is also highlighted by the politician from the ruling state government when she informs the residents that insufficient telecommunication structures results in poor internet connectivity and erratic reception for mobile communication (see Chapter 5 sub-section 5.5.2 Excerpt 5.28: Politician D, "*...The whole area no phone line, no line huh, no internet connectivity huh, who suffer? Do you want that or not?*").

The residents are aware of the need for the structures. However, the public's bone of contention is that the construction of these structures is close to their dwelling units. In Chapter 5 sub-section 5.5.1 Excerpt 5.21: Resident A, the articulations "*don't install in front of our block*" and "*...so long as not in front of us*" suggests that the problem is more geographical and is in line with Cousin and Siegrist's (2010a and 2010b) and, Dohle, Keller and Siegrist's (2010) assertion that the public generally enjoys the

convenience of mobile communication but are opposed to having base station sites near their neighbourhoods.

The residents' main concern is the impact of RF emission from the telecommunication structures on their health. In Chapter 5 sub-section 5.5.1 Excerpt 5.21: Resident A, the resident is urging the authorities to give them assurance "*in black and white*" that the telecommunication structures are not health hazards. Similarly in Chapter 4 sub section 4.4.1.1 Excerpt 4.39: Resident E, the resident through specification states "*this thing (the telco base station) is unhealthy and inappropriate to be erected in residential areas*". Another resident portrays the telcos as being inconsiderate because they cannot be trusted in safeguarding public health since the telecommunication structures are constructed close to residential homes (see Chapter 4 sub-section 4.4.2.1 Excerpt 4.45: Resident C, "*...they must make sure that the radiation emitted will not be harmful in any way to the health of people living in closest proximity. I have no confidence in them...*"). This implies that the presence of telecommunication structures is not the issue but the location of these structures is a problem because of perceived health risks.

This is echoed by the politicians from the opposition because they support the residents and portray them as the affected party: "*...the waves emitting from the towers are affecting their health...*" (Chapter 4 sub-section 4.5.2.2(b) Excerpt 4.64: Politician B). The activists also stress that "*...the health risk is already there...*" (Chapter 4 sub-section 4.6.2.1 Excerpt 4.69: Activists B). But the telcos mitigate the residents' role by affirming that when "*...they see antennas, they see towers, than they are worried*" (Chapter 4 sub-section 4.3.2.2 Excerpt 4.34: Telco A) and "*...there are instances when towers are built but the dishes are put there but it's not switched on and they say they*

already have a headache... it is peoples' perception..." (Chapter 4 sub-section 4.3.2.2 Excerpt 4.35: Telco B). The telcos are thus inferring that the residents' negative perception is unsubstantiated and is a reflection of their low level of knowledge on RF.

The residents' main concern is that RF is harmful to health and yet the telecommunication structures are constructed or located close to their homes. As such, the telecommunication base stations and antennas are deemed to be intrusive. It is also inferred to be intrusive for cultural reasons. These reasons are discussed in sub-section 6.2.1 Step 1: Consider the issue. Clearly, the inference is that the telcos have contravened the guidelines on siting of telecommunication structures and this has eroded the atmosphere of mutual trust and respect. Besides the 'blame game' by MCMC, MOH and the local government in addressing the issues faced by the affected residents, suggest lack of honesty and openness in dealing with the issue. The telcos, MCMC, MOH and the local government are interdependent in this contestation and hence, need to speak in one voice to tone down the health debates on RF so as to create an environment conducive for risk communication.

6.2.4 Step 4: Develop a Communication Approach and Methods

Kemp (2009) highlights that notification, consultation and dialogue communication methods can be employed by the telcos with the residents. Kemp states that the telcos can use a standardised notification which is a one-way communication to meet national regulations for the majority of sites. He encourages consultation with key stakeholders for locations in which resistance is anticipated. He explains that this two-way communication requires a longer period of notification so as to have ample time for resolving local issues and concerns. Finally, he says dialogues may be necessary for environmentally sensitive areas like schools and hospitals which usually see

contestations from the residents over locations of telecommunication structures. The findings infer that currently the telcos do not notify, consult or hold dialogues prior to the construction of telecommunications base stations and antennas.

Conversely, the residents' 'self' representation as being helpless, marginalised and voiceless suggests that the construction of telecommunication structures have been imposed on them without any form of consultation (in Chapter 4 sub-section 4.4.1.1 Excerpt 4.39: Resident E, ...*To whom can I complain to? What can I do? It doesn't look like I have any choice on the matter...*). Similarly, the residents infer through functionalisation that the telcos operate in an irresponsible manner because the base stations and telecommunication antennas are located in the vicinity of residential homes (see Chapter 4 sub-section 4.4.2.1 Excerpt 4.45: Resident C, ...*I want the telcos to be more considerate ... health of the people living in the closest proximity... At the moment, I have no confidence in them*). The presumption is that the residents do not trust the telcos to act responsibly to safeguard public health. The activists too appraise the telcos negatively as they imply that the telcos are motivated by a bigger market share and higher profits and that the public's wellbeing is not a priority (Chapter 4 sub-section 4.6.2.3 Excerpt 4.73: Activists C, ...*They are only seeing dollar and cents. Sweep everything under the carpet let the people die, never mind. People get cancer, go ahead...*) and this suggests that the construction of telecommunication structures are undertaken without any form of communication with the public. The protests by the residents too suggest that the telecommunication structures are constructed without the residents' consent (Chapter 5 sub-section 5.5.1 Excerpt 5.21: Resident A, ...*If they can, they want, they insist on installing here, they should give us a letter. You give us a guarantee letter that this is not harmful to our health...*).

So the findings from Chapters 4 and 5 allude that the telcos currently do not have a communication approach to engage with the residents prior to construction of the telecommunication structures. This goes against good management practice in risk communication which is to anticipate and address community concerns to build trust and to avoid protests and media campaigns against the telcos and relevant authorities (Kemp, 2009, p. 12).

However, MCMC represents the telcos in Chapter 4 sub-section 4.2.1.2(a) Excerpt 4.4: MCMC 1, (*...It is difficult for telcos to approach the public directly because they are the interested party and are going to make profit out of this. So public won't listen to them...*) as suffering from a credibility problem. Similarly in Chapter 4 sub-section 4.7.2.1 Excerpt 4.77: Journalist B also echos that the telcos have a problem with credibility (*...the only people who quote facts and figures are the telcos. And unfortunately, these big companies don't come across as very sincere when they quote facts and figures...*). As such, the telcos rely on MCMC instead to play a central role in communicating with the residents and activists. MCMC on the other hand is more reactive than proactive as it only acts when it receives complaints from the residents (see Chapter 5 sub-section 5.5.2 Excerpt 5.25: MCMC 2, *We usually measure if there are complaints ...* and Chapter 4 sub-section 4.5.1.2(a) Excerpt 4.51: Politician C *...MCMC can take a more proactive role...too busy with their own bureaucracy...only surface when there are big issues, too big an issue*). But the local government represents MCMC, MOH and the telcos as important organisations that shift the responsibility of dealing with the protesters to them (Chapter 4 sub-section 4.2.3.4(a) Excerpt 4.22: MPPP, *...MCMC and the telcos need to "turun padang" (go and meet people on the ground) ...must play a big role... As for MOH I'm not too sure of their role... should not leave the the dirty job of dealing with the protestors to the local council...*). The

local government infers that it is the sole and reluctant agent left to deal with the protestors.

The inference here is that the telcos are aware that it has a problem with trust when dealing with residents. But instead of addressing this setback and trying to build bridges directly with the residents, they are depending on MCMC to tackle the problem. But there are blame avoidance tactics involved as the local government claims that the problem of dealing with the protestors has been pushed to them and that now they are reluctantly dealing with this responsibility. There is ambiguity pertaining to the agency that is responsible in communicating with the affected residents. It also denotes lack of inter-agency communication and co-operation resulting in blame avoidance tactics to deflect responsibility. Wyatt (2012, p. 157) affirms that blame is “a particularly important sort of record-keeping that goes beyond mere description, it can be considered a grading plus an ascription of responsibility”.

Hence, openness and transparency are regarded as an effective formula for increasing legitimacy and trust (Hood & Rothstein, 2001). In this case, the telcos use MCMC to communicate with the residents because it is the regulator of the telecommunication industry in Malaysia and as such is a more legitimate actor for this role. However, the local government asserts that the telcos, MCMC and MOH have left this ugly task to them. This is a form of manipulation and van Dijk (2006, p. 360) states that manipulation “implies power and power abuse”. The telcos and the government agencies have the power to deal with the conflict but the power is abused through inefficiency, incompetency and lack of accountability and this can be inferred through their blame avoidance techniques. The agencies responsible in the management of risk

must look and act competent to build trust (Kemp, 2009, Renn, 2010 and Covello, 2010).

Renn (2010, p. 90) agrees with Kemp and stresses on the importance of stakeholder involvement and public participation in the communication process and he adds that this improves the quality of decision making and avoids “damaging and time-consuming confrontation”. Renn is also of the view that stakeholder involvement and public participation should be organised at the beginning of the communication process. He maintains that a more proactive rather than a reactive communication strategy is necessary. But the findings suggest that MCMC, MOH and the local government authorities are more reactive because these organisations only act when there is a complaint.

6.2.5 Step 5: Apply Good Practice Risk Communication Methods

A basic communication model consists of the source or sender, the message, the channels of communication, and the receiver of the message (Lane, King, & Reichert, 2011; Moriarty, Mitchell, & Wells, 2009). Covello (2010) and Kemp (2009) contend that the messenger must be a trusted party who has high credibility, the message must be simple and concise, and the choice of channel should be based on the receivers needs. Kemp (2009) highlights ten golden rules to communicate effectively in “high-concern, low-trust situations” which is to choose words carefully, use three key messages, guarantee compliance in site and equipment used, use simple language, empathise with the people’s concerns, use pictures, listen actively, and attend meetings with residents promptly.

The findings indicate that the source for health related communication on RF is unclear. The task of communicating with the public is not the sole responsibility of one organisation. MCMC as the regulator of the telecommunication industry in Malaysia represents itself as the trusted body on RF and via functionalisation state that it is qualified to speak on matters pertaining to RF (Chapter 4, sub-section 4.2.1.1 Excerpt 4.1: MCMC 1, *We are the trusted body on this issue here in Malaysia...*). However, the job of producing the risk communication materials on RF is entrusted to MOH as it is referred to as *...the actual custodian of RF-EMF* (Chapter 4 sub-sections 4.2.1.2(a) Excerpt 4.3: MCMC 1). Similarly, the Telco A in Chapter 4 sub-section 4.3.2.1 Excerpt 4.33: Telco A, highlights through functionalisation that MOH should play a bigger role because *...they have a section on radiation* but the telco mitigates MOH's role because it *... gives educational talks on RF, besides that there is nothing much...* . MOH's role is similarly mitigated by MCMC, the local government, the residents, the politicians from the ruling state government, and the media (see Chapter 4 sub-sections 4.2.1.2(a) Excerpt 4.3: MCMC1, *... They were appointed by the cabinet... appointed as the custodian for EMF. Most of the time they assist us in our awareness programs and roadshows...*, 4.2.3.4(a) Excerpt 4.22: MPPP *...As for the Ministry of Health, I'm not too sure of their role...* , 4.4.2.1 Excerpt 4.47: Resident C *...I have yet to see any news or publicity from the Ministry of Health on RF...* , 4.5.1.2(a) Excerpt 4.52: Politician D *...MOH is reluctant, they are too passive...* , and 4.7.2.1 Excerpt 4.76: Journalist A *...MOH and the related ministries must be more capable*).

However, MOH acknowledges in Chapter 5 sub-section 5.4.1 Excerpt 5.12: MOH through agentialisation that it is personally involved in the educational and awareness programs on RF (*...MOH has been involved in the awareness campaigns, road shows, seminars and talks nationwide to disseminate information to the general public and to*

allay their fears of the adverse health effects from EMF...). Again in Excerpt 5.14: MOH, it identifies its involvement in the articulation ...*We want to come up with a new booklet but we have been told to do come up with guidelines for so many other things that we don't have the time.* This infers direct involvement but whether MOH is solely responsible for the communication materials is backgrounded. However, MOH implies that communicating with the public is a collaborative task with MCMC (see Chapter 4 sub-section 4.2.2.2 Excerpt 4.12: MOH, ...*MOH will continuously collaborate and work closely with MCMC to disseminate information to the general public on the effects of RF emission...*). Further, in Chapter 4 sub-section 4.5.2.2(a) Excerpt 4.62: Politician B, the politician mitigates MOH's efforts as... *simply following whatever is done by WHO.* This suggests that initiatives are not implemented to cater to local needs. This hints that MOH is passive, it is not competent or that it is simply bogged down with too many other tasks that take precedence over RF emission from telecommunication structures.

In terms of channel, in Chapter 5 sub-section 5.4.1 Excerpt 5.14: MOH, MOH acknowledges that it distributes a booklet to the public on RF which is deemed to be too technical for public comprehension (...*One of the engineers from MOH also informed us that the booklet is too technical...*). MOH also distributes this booklet upon request and it is uploaded on the website but monitoring of the website is relegated to another department (Chapter 5 sub-section 5.4.1 Excerpt 5.15: MOH, ...*This booklet can also be downloaded from the MOH website, <http://engineering.moh.gov.my>. I don't have the figures for the number of hits this website gets. It is handled by the IT people...*). Similarly in Chapter 5 sub-section 5.4.2, Excerpt 5.19: Politician C highlights that MCMC too has a website that provides information on RF but the awareness of such a website is descriptivised as “very negligible”. The inference is that the materials, in

particular the booklet and the website are put together to comply with the requirements of producing communication materials. The fact that MOH acknowledges that the booklet is too technical indicates that not much thought was invested in ensuring the comprehensibility of the materials by the general public. This may also infer lack of openness in communication because it suggests that technical jargon is used as a form of manipulation to cover up something more sinister because the message is beyond comprehension by the general public. This casts doubts on the competency of the MOH which is entrusted with the task of producing simple, straight-forward and coherent communication materials for the general public.

The telcos too deactivate MOH's communication initiatives in particular MOH's choice of channel and method of disseminating information because the telcos highlight that the educational booklets have not been distributed effectually (see Chapter 5 sub-section 5.4.2 Excerpt 5.17: Telco A, ... *unfortunately I think they never distributed this book well enough. They had it in the store for some time...*). This again hints that MOH is not pro-active and lacks initiative in educating the public on RF. This is reaffirmed by the residents who are the receivers of the message in Chapter 5 sub-section 5.4.2 Excerpt 5.18: Resident C, because the resident states that she has ...*yet to see any news or publicity from the ministry*. This reflects MOH's lack of accountability and sincerity in addressing the controversies surrounding the health debates on RF. MOH's credibility as an organisation responsible for public health is affected and this contributes to the public losing trust in such organisations entrusted in protecting public health.

In Chapter 4 sub-section 4.2.2.2 Excerpt 4.12: MOH, MOH appraises MCMC's roadshows on RF positively (...*MCMC was doing some great road shows in which we*

took part). MOH affirms that it was involved as a panellist in these roadshows to speak on RF. This infers that communicating with the residents is not solely MOH's responsibility but that MOH is also personally involved in the road shows organised by MCMC as a spokesperson. In addition the politician from the ruling government in Penang agentialises his personal involvement in writing the copy for talks he conducts with the public on RF (see Chapter 5 sub-section 5.4.1 Excerpt 5.20: Politician C, ...*I put up six talks to pass the myth of radiation impact. I think we look at this seriously; it is part of public education, and I personally wrote the copies*). The politician backgrounds the involvement of MOH and MCMC in these talks. This hints that there is lack of coordination in the communication methods. The supposition is that various communication methods like booklets, websites, road-shows and ad-hoc face to-face meetings from various sources are currently used to engage with the affected residents.

The findings suggest that the communication efforts are ineffective as firstly, there is a lack of coordination on who should be the main source of information, and secondly, the choice of channel is ineffective as the booklet is too technical and not distributed widely and finally both MOH and MCMC have websites informing the public on RF. However, the existence of these websites is not publicised. Additionally, MCMC's meetings with the public are more reactive rather than active and initiated only when it receives complaints from residents (see Step 4 sub-section 6.1.4). As a result, the message on RF and its impact of health are not effectively filtered down to the residents who are receivers of the communication initiative (see sub-section 5.4.2).

Overall the findings from Chapters 4 and 5 indicate a lack of application of good risk communication methods. Both Renn (2010) and Covello (2010) advocate that applying good practice like the right choice of words in the communication materials and

showing empathy to the residents' concerns as important communication strategies. They also affirm that a lead spokesperson should be designated to communicate with the residents and they also suggest working with the media to get the information across to the public. This will ensure that the stakeholders particularly the telcos, MCMC, MOH and the local government speak in one voice. A clear and consistent message from the organisations responsible in assessing and managing risk aids in building trust and credibility. Currently, this is lacking in the communication approach and methods employed by the stakeholders who have the power and authority in informing and educating the public on RF's impact on health. This does not help in arresting people's misperception on RF because the public can get information on RF from various legitimate and spurious sources. This is especially so in the absence of a voice of authority from a trusted Malaysian agency.

6.2.6 Step 6: Pretest Communication Materials

Kemp (2009) suggests to pretest materials "whenever possible" (p. 18) for effectiveness but does not include the process separately in his framework. Pretesting measures the reaction of the target audience to the concepts and message materials before production (Bertrand, 2006) and therefore, it is given prominence as an additional stand-alone step in my adapted framework.

Chapter 5 sub-section 5.4.1 Excerpt 5.13: MOH, draws attention to the inexperience of MOH because pretesting has not been carried out on the information booklet on RF. MOH recognises that the information booklet that it produced is too technical and highlights that this flaw has been disclosed by "one of the engineers from MOH". The representative from MOH states that they have been unaware of pretesting the materials to gauge the comprehensibility of the message by the public (...*What is pretesting?*...

Oh interesting, it was not done). This denotes MOH's lack of competency because pretesting is a "data-driven process" that "provides opportunity for ensuring time, effort, and valuable resources are not wasted" because the information can be improved if there is confusion in the interpretation by the public (Brown, Lindenberger, & Bryant, 2008, p. 116). Such incompetence and lack of commitment in powerful institutions like MOH which is entrusted with the important task of educating the public on RF lead to erosion of trust. Brown et al. (2008, p. 116) emphasise that pretesting is an important demonstration of the communicator's commitment in assessing the target audience's "responses to messages, activities, concepts, and other public health education intervention". Hence, overlooking this process makes the risk communication initiative ineffective as the message is not filtered down accurately to the intended audience. For example, with pretesting, MOH may have avoided publishing a booklet on RF exposure that is perceived to be too technical for the layperson to comprehend.

6.2.7 Step 7: Use Multi-channel Approach

Kemp (2009) does highlight the need for "the most appropriate way to communicate with your audience" (p. 13) but does not emphasise a multi-channel approach. A multi-media approach in any communication initiative is important to cater to the audience's varying media consumption habits (Lundgren & McMakin, 2009; Adhikarya, 1994). This enables the message to be disseminated to a wider audience who prefers different forms of media. As such, the multi-channel approach is an integral step in the adapted framework.

The findings infer that currently different forms of media are used to reach out to the affected residents and the general public on RF and this is highlighted in sub-section 6.2.5 (Step 5: Apply good practice risk communication methods). The various methods

are talks and roadshows by MCMC, information booklet by MOH, talks by politician from ruling state government, and websites by both MCMC and MOH. However, in Chapter 5 sub-section 5.4.2 Excerpt 5.18: Resident C, the communication initiatives are deactivated because the choice of media does not appeal to all members of the target audience (*...If they could publish those in newspaper as well, it would be more helpful because older generation will not surf internet. Some of them rely heavily on the daily newspapers*). Similarly in Excerpt 5.17: Politician C, the politician from the state government also highlights a lack of commitment in the choice of the channel of communication (*...but the mode of transmission to the stakeholders or members of the public is too passive. It's like I've printed the publication, I've done my part, and now it's up to you to go and find the channel*). This indicates a lukewarm attempt at imparting information and that not much thought is applied to match the appropriateness of the media to the target audience.

The choice of the media needs to be audience appropriate for effective flow of information from the source to the receiver. The indifference showed by MOH and MCMC in choosing appropriate channels of communication reflects a lack of thoroughness and competency in the risk communication efforts as this one size fits all approach is clearly not effective. It signals a lack of sincerity and inclusiveness in reaching out to the audience.

6.2.8 Step 8: Evaluate Effectiveness

Evaluation should be a built-in component in risk communication to assess the outcomes of the initiatives or programs undertaken (Lundgren & McMakin, 2009; Adhikarya, 1994). This process will detect where improvements are needed for future initiatives.

The analysis in Chapter 4 sub-section 4.5.1.2(a) Excerpt 4.51: Politician C, hints that risk communication efforts are ad hoc and not an on-going process, and this hints that no formal evaluation of previous activities are undertaken (*...but they(MCMC) only surface whenever there are big issues, too big an issue*). Further, the analysis in Chapter 5 sub-section 5.4.1 Excerpt 5.14: MOH (*...One of the engineers from MOH also informed us that the booklet is too technical*) suggests that evaluation activities are not undertaken as the flaw in the booklet is inferred to be highlighted casually by someone else in the organisation and not through a formal evaluation process. Again in Chapter 5 sub-sections 5.4.1 Excerpt 5.15: MOH (*...I don't have the figures for the number of hits this website gets. It is handled by the IT people*) and sub-section 5.4.2 Excerpt 5.20: Politician C (*...awareness on the existence of such a website is very negligible. That can be measured by the number of visitors to the website*) it is implied that initiatives to communicate to the public are in place but the effectiveness on these measures are not evaluated.

As highlighted in sub-section 6.2.4, the task of communicating to the public is relegated mainly to MCMC and MOH because the telcos suffer from an image problem. However, the government authorities' (MCMC, MOH and the local government) scope of involvement is based on their organisations' area of specialisation, goals and values. The inference is that these authorities look at RF strictly to safeguard their organisation's interests and hence there is no powerful authority in this stakeholder group to lead and coordinate the overall risk communication efforts

6.3 Recommendations for Effective Risk Communication

Renn (2010) stresses that people all over the world are concerned about health risks and environmental quality. So, effective risk communication is important to establish “public confidence in the ability of the organisation to deal with a risk” (Covello, 2010, p. 143). Covello (2010) also explains that there are various objectives in risk communication with the overarching objective being to build, strengthen or repair trust. The other objectives are to raise awareness of a risk, to provide information to the public so that they will be equipped to respond to a risk, and finally to engage people in a dialogue about a risk to arrive at a consensus. The recommendations will touch on all the objectives as the findings infer that these areas warrant attention. The recommendations are as follows:

- i. A government body from MCMC, MOH and the local councils needs to be appointed to lead in the risk communication initiatives as currently the responsibilities of these agencies are pigeon-holed based on their areas of jurisdiction. This has resulted in blame avoidance tactics and power plays among the relevant authorities to evade responsibility. They need to speak in one voice to calm public fears and to quell panic (Clarke, Chess, Holmes, & O'Neill, 2006, p. 162). Covello (2010) too advises that it is imperative to “designate who will be the lead communication spokesperson” (p. 155). It is a difficult task but there is an urgent need for these agencies to put their differences aside in order to address the issue collectively and rationally for a permanent and coherent solution.
- ii. Stricter enforcement of guidelines needs to be implemented to firstly, arrest the construction of illegal structures, and secondly, to ensure that these structures

abide by the guidelines pertaining to the distance between the structures and residential homes and other sensitive buildings like schools. A lack of enforcement has an impact on the credibility of the agencies entrusted with the responsibility of ensuring that telcos comply with guidelines. This is also in line with Covello's (2010) four theoretical models in risk communication which are risk perception, mental noise, negative dominance and trust models (see Chapter 2 sub-section 2.2.2). These models emphasize that trust is an important communicative concept to build a bond between the messenger and receiver.

- iii. Dialogue with the affected residence needs to be established prior to the construction of telecommunication structures. This shows transparency and aids in building trust with the relevant authorities. A compromise is easier to achieve if the telcos, MCMC, MOH and the local council show empathy to the residents' concerns. The analysis reflects that the residents have not been consulted on the location/construction of telecommunication structures. Involving the residents in the process would point to a positive way forward that foregrounds collegiality with, as well as respect and empathy for the public. This is essential in creating an effective partnership with the public "which includes giving lay publics a seat at the table and an opportunity to voice their concerns" (Heath & O'Hair, 2010, p. 7) which is an important risk communication strategy.
- iv. The public prefers to get its information directly from a trusted and known source like medical personnel (see Covello, 1993). So, an influential person from the community who understands the benefits of telco structures should be engaged to appear with a medical personnel from MOH to allay the public's fear on RF. MOH is in-charge of public health and therefore can play a forceful role in subduing the public's fear as understanding of RF entails complex medical

and scientific matters. The representative from MOH should simplify the information for public understanding. Everyday language should be used to tailor the messages to the needs of the public (see Covello, 2010; Renn, 2010; Ruddat et al, 2010).

- v. The information provided to the residents either through face-to-face dialogue or through other communication materials should be balanced. It should also touch on the residents' concerns and provide solutions on how they can safeguard their own health against the perceived negative effect of RF. Ruddat et al. (2010) advises that risk communicators should not downplay arguments but give neutral reporting with balanced information. This approach provides a less bias view of RF and also empowers the public to take precautionary methods and still enjoy the benefits of modern technology.
- vi. The cultural norms and values of the Chinese community on *feng shui* need not be challenged but solutions to deflect bad *feng shui* energies can be included in the educational talks if this issue is of concern to the residents. This cultural issue should be addressed by a Chinese expert from the field. This would ensure that all residents' concerns are attended to and that no issue is trivial. Risk and the understanding of social systems and actors with diverse values, beliefs and emotions are crucial in risk communication (Aldoory, 2010).
- vii. The text and visuals in the information materials need to be pretested on members of the public to ensure easy comprehension. The materials are currently not pretested and therefore are too technical for understanding. A panel to oversee the content (both text and visuals) in the information materials should comprise representatives from the public, experts on RF, representatives from

MOH, MCMC and the local councils. A professional advertising agency should also be panel to advise if the copy, design and layout are suitable for the target audience.

- viii. A multi-media channel approach should be used to ensure that the message reaches the target audience effectively (see Covello, 2010; Ruddat et al., 2010). Interpersonal face-to-face communication, traditional media (print), and new media (website and social media) should be used to deliver the message. Print media should include brochures, booklets and, advertorials and editorials in local newspapers especially Chinese dailies. The websites/social media on RF should be advertised to the public and monitored. Information on RF should be updated online on a regular basis. This makes current information on RF readily available to the public.
- ix. Media organisations should be included in the risk communication initiatives as the public forms opinions from the media reports on health, environmental and safety risks. As such, MCMC and the telcos should work with the media to create a “more informed, empowered, solution-oriented public” (Lundgren & McMakin, 2009, p. 209). Lundgren and McMakin (2009, p. 207) also highlight that the media can be used effectively to report existing information, influence the way an issue is represented, bring an issue to the public’s attention or restrict its coverage, propose solutions or take a stand on an issue.
- x. Risk communication cannot be implemented on a piece-meal basis but must be an on-going process to change the negative perception of RF on health. Hence a comprehensive risk communication program should be designed in consultation

with the various stakeholder groups. This reflects Hampel's (2006) view that risk communication is not a task where bits of information are transported from the sender to the recipient of the communication but a process, where both sender and recipient interact in order to develop a common frame for the understanding of the problem.

- xi. Evaluation of the programs, strategies or tactics should be undertaken after implementation of such initiatives to gauge the outcomes and its effectiveness. It is important to assess the costs and benefits of the risk communication initiatives, identify any loopholes or challenges faced and then fine tune the programs to achieve better results. Risk communication is a long term institutional commitment and hence the development and communication practice should be monitored and evaluated for effectiveness.

The suggested recommendations are in line with the tenets of risk communication which are to build a trustworthy and reliable working relationship, improve transparency, provide stakeholders with trusted sources of information and reduce the helplessness of the affected residents by providing them with an avenue to be involved in the risk communication initiatives.

6.4 Summary

The adapted Key Steps in Applying Effective Risk Communication framework draws from the analysis of the social actors and social actions to identify the major issues in the health debates on RF. The eight steps in this framework identify issues from the residents and telcos perspective, and highlight the bottlenecks in the risk communication initiatives.

The residents main concern are that the telcos do not follow guidelines and as a result the telecommunication structures are constructed close to their homes, and this they affirm poses a threat to public health. Some residents also do not want these structures because of cultural reasons, while some are petty over rental income received by the landlords. The residents feel that there is lack of empathy from MCMC, MOH, the local government and the telcos. The main target audience are residents who have these structures close to the homes, who are aged above 40 years, and who are predominately Chinese.

The telcos on the other hand require these structures to keep up with public demand for good service, and to adhere to quality requirements set by MCMC. MCMC, MOH and the local government are involved in the approval process of the telecommunication structures. However, these agencies are involved in a blame game as there are no agency that is clearly in-charge in dealing with the residents' complaints and protests on RF. So, there are conflicts and power plays on how to handle risks. As such, the risk communication initiatives are on a piece-meal basis and more reactive rather than proactive, and the authorities do not speak in one voice. The communication methods are not coordinated, pretested or evaluated.

Eleven recommendations are formulated to address the current setbacks in the risk communication initiatives. The recommendations are put together to mainly repair, build and strengthen trust, because trust and credibility in agencies responsible for risk communication initiatives determine its effectiveness.

CHAPTER 7: CONCLUSION

7.1 Introduction

This final chapter gives an overview of the research focus and restates the research questions that have guided the study (Section 7.2). It also provides a summary of the research findings and an overall discussion of the study for Research Question 1 (Section 7.3), Research Question 2 (Section 7.4) and Research Question 3 (Section 7.5). The chapter also highlights the contributions of this research in Section 7.5, the scope and limitations in Section 7.6, and the implications for future research in Section 7.7. The chapter finally ends with the concluding remarks in Section 7.8.

7.2 Research Focus

This study examines the controversy on RF emissions from telecommunication structures. Some members of the public perceive it to be harmful to health though it is classified as non-ionising radiation. There are conflicting views from scientists and experts on the impact of RF emissions on humans. While part of the scientific community infers that RF is not injurious to health, there is an equally large number who attests that RF emission from telecommunication structures is cancer causing. WHO's International Agency for Research on Cancer (IARC) classification of RF emissions as "2B" "Possibly carcinogenic to humans" as opposed to 2A "Probably carcinogenic to humans" or 1 "Carcinogenic to humans" only adds to the confusion and attracts severe criticism from the scientific community. A layperson finds this classification ambiguous and this has created suspicion among the public because one is not sure if this is a strategy to mask the uncertainty of RF's impact on health.

As a result of these conflicting views on RF emission, the public wants the benefits of modern technology but they do not want these structures to be located close to their homes or sensitive areas like schools. There is however a steady rise in the construction of telecommunication structures to cope with the global upsurge in the use of mobile telecommunication devices. In Malaysia, some residents and activist groups are protesting against the construction of these structures in residential areas. This is despite assurance from both MCMC and the telcos that the RF emission level is regulated and conforms to the science-based standards imposed by WHO and ICNIRP which are world renowned bodies.

The RF emission levels however are not uniform globally. Russia, China, Switzerland and some European countries have deviated from WHO's and ICNIRP's standard and adopted a lower RF level and claim that their levels are also science-based. The activists in Malaysia are also campaigning for the RF standards to be lowered to the science-based standards adopted by China, Russia and Switzerland.

The telcos on the other hand require these structures to provide quality service which is a requirement by law. They contend that these telecommunication structures should be located strategically close to telecommunication users to provide better reception. They also highlight that the radiation emission from the telecommunication structures is lower if it sited close to the users. A sizeable segment of the public is sceptical of this rationale and is protesting against these structures based on the assumption that RF is harmful to health. Besides, there is no research to confirm that long term exposure to RF is safe. Thus there is a need to examine the underlying reasons behind the health debates on RF exposure by studying the way people talk about this issue and by the way they view the other stakeholders in this contestation.

By applying van Leeuwen's (2008) framework of the representation of social actors and social action in a thematic analysis, this study focuses on the social practices, i.e. the social actors and the social actions in the discourse on RF exposure particularly in terms of the conflicts and contestations that occur among the various stakeholders. This involves examining the representation of social actors and social actions of the various stakeholder groups that are directly involved in this issue as they view RF exposure through different lenses. Based on the analysis, this study explores ways to reduce the contestations of the various stakeholders by formulating recommendations for effective risk communication.

In line with the contestation on RF emission, this study sought to answer the following research questions.

Research Question 1:

How are the social actors involved in the health debates on RF exposure from telecommunications structures represented by the various stakeholders?

Research Question 2:

How are the social actions involving the exposure to RF from telecommunications structures represented by the various stakeholders?

Research Question 3:

How can the analysis of social practices improve risk communication on RF exposure from telecommunications structures in Malaysia?

The study uses qualitative data from spoken conversations which come from thirty-one (31) semi-structured interviews with representatives from seven (7) stakeholder groups. The stakeholders are directly involved in this conflict on RF emissions and they are representatives from MCMC, Ministry of Health, the local town/city councils/local

government, telcos, residents, political parties (from both the ruling government and the opposition), activists, experts and the media.

7.3 Representation of Social Actors (Research Question 1)

The ‘self’ representation of each stakeholder group corresponds with the roles they play in this contestation. In line with Markon’s et al. (2013), Covello’s, (2010), Heath and O’Hair’s (2010) and Renn’s (2010) views the discourse on RF among the various stakeholders differs based on their different social roles, dissimilar social identities and varied levels of knowledge. Except for the residents’ stakeholder group who portray themselves as victims, all other stakeholders represent themselves positively in this contestation. A positive ‘self’ representation is crucial in building relationships of trust with the stakeholders directly involved in the contestation. As Leiss (1995) asserts, trust is important for risk communication especially in seeking consensus among the various stakeholders on how to handle a perceived risk.

To build trust, the ‘self’ representation reflects the social actors’ affiliation with the institution he or she represents in the contestation as their discourse on RF carries institutional and social meanings. This supports van Dijk’s observation that social representations are shared among members of a social group based on knowledge from personal, group or cultural factors, on attitudes and finally on ideologies. A summary of the representations of the social actors involved in the health debates on RF exposure is provided in Table 7.1.

TABLE 7.1

Sub-sections 7.3.2 to 7.3.8 will highlight the ‘self’ and ‘other’ representations of each stakeholder group according to three main themes – credibility, knowledge and motivation..

7.3.2 Government Departments/Agencies Stakeholder Group

The ‘self’ representations of this stakeholder group hint that the administrative set-up in these government bodies is bureaucratic and hierarchal. The distribution of responsibility, power and authority is clear, but there are ambiguities in the coordination and implementation of risk communication initiatives. This can be inferred from the blame game in the discourse by both MCMC and the local government in which MOH is represented as being inactive though entrusted with power by the cabinet to deal with RF related issues. The local government also alleges that MCMC and MOH have shifted the responsibility of dealing with the protestors to them.

This lack of interagency coordination does not provide a remedy to the health debates as clearly the agents responsible for safeguarding public health are not speaking in one voice, leading to inept risk communication efforts. The inference is that each agency is looking after their self-interest and representing themselves positively to gain public trust, while the other partners are passivated for not doing enough to address the contestation on the health debates. In the representation of the ‘other’, MCMC and MOH are not represented as the negative ‘other’ but the representation indicates lack of initiative in decision making and risk communication initiatives. This impacts the way the public evaluates this stakeholder group in terms of credibility, responsibility and competence. Managing risk ultimately depends on the public’s trust of risk managers which is the government stakeholder group. Therefore, this stakeholder group needs to see beyond safeguarding their management roles and avoid the blame game. Instead, the

government bodies involved in risk communication need to be on the same page and execute their plans in harmony.

However, in the representation of the 'other', all three members of this stakeholder group portray the residents, politicians and the media negatively. They highlight that the residents in general have low knowledge on RF which clouds their perception on RF emission. They concur that the landlords protest when their properties are not chosen as suitable sites for the location of telecommunication structures because this denies them of additional rental income. The government agencies also collectively infer that the motivation for politicians is to garner votes from the electorates for the next general election. Additionally, they feel that the media has low credibility because it sensationalises news and is more "resident-friendly" in its reports on RF.

The representation of the 'other' absolves the government agencies of any wrong doing in the contestation. The residents are perspectivised based on socio-economic variables like age, ethnicity and cultural background for their lack of knowledge on RF. This 'self' and 'other' representation of the residents are based on a partial and inadequate assumption that residents that fall into this category conform to this stereotype. The residents are also viewed as instigators as their protest on RF emission is fuelled by greed for rental income and not out of genuine concern of its impact on health. The politicians' are represented as manipulators because they are using their power to sway the conflict to their advantage by taking a popular rather than a rational stand on this issue. The media is deemed to be less credible because of its reporting style, but this representation of the media also suggests that the media's primary role is to "entertain, interrogate, expose and ultimately sell papers" (Cookson, 2010, p. 112). Therefore, in the representation of the media, there is a link between credibility and

motivation because it is surmised that the driving force for the media slant is to increase in circulation and revenue.

7.3.3 Telecommunication Companies (Telcos) Stakeholder Group

The telcos' representation of 'self' and 'other' shows a distinct positive 'self' representation and a negative 'other' representation. But the telcos' 'self' representation as a compliant body contradicts MCMC representation of them as suffering from a credibility problem. This contradiction casts doubts on the integrity of the telcos. Further the telcos' representation of the 'other' infers that the telcos are trustworthy while the 'other' is deceptive.

They are also involved in the blame game where they attribute MOH's lack of participation for the residents' and politicians low level of knowledge on RF. They also generalise that the residents' involvement is motivated by their own personal agenda which is loss of rental income. The politicians' are also inferred to have an ulterior motive because of their blind support for the residents. The negative representation of the 'other' namely MOH, residents and the politicians, and the attribution of negative qualities to their personalities creates two sides to this conflict, in which the telcos are in the 'us-group' and the 'other' are depicted negatively to constitute the 'them-group'. This construction of the 'other' is displayed through the Foucauldian concepts of 'division' and 'rejection' (Foucault, 1972) and evokes an ideological dimension that portrays the 'other' as mad, irrational, immoral, evil, etc. (Reyes, 2011).

7.3.4 Residents Stakeholder Group

The residents see themselves firstly as helpless public because they infer they are voiceless in this conflict, and secondly as passive citizens because the majority are

unaware of RF's perceived health risk and finally as both wrongdoers and victims. The wrongdoers are landlords who are won over by the telcos with site-rental income for the telecommunication structures and the victims are residents in general who do not get any monetary gain but are exposed to the RF emission. So the residents' 'self' representation invokes that they are an 'out-group' facing problems brought about from both within (the landlords) and from outside sources. They associate themselves with a negative situation in which their rights are suppressed by the powerful 'in-group' (government agencies, telcos and experts) and the landlords.

The residents 'other' the telcos as the perpetrators to their problem because they do not follow siting guidelines for telecommunication structures. This representation conflicts the telcos' 'self' representation as a compliant group but it supports MCMC's portrayal of the telcos as facing a credibility problem with the residents. This confusing positive 'self' representation and negative 'other' representation affect trust because it brings about a critical divisive factor into the controversy specifically in the technological management of risk. Additionally, the residents' portrayal of MOH as lacking credibility because of their ineffectiveness and the negative depiction of the experts as colluding with the telcos for financial support adds to this divisive factor, and this gets in the way of risk communication initiatives. The negative 'other' representation of the telcos, MOH and the experts signify that the residents are clearly sceptical about them and that there is distrust because of disappointed expectations.

However, the residents' positive portrayal of the Chinese media suggests that they subscribe to common knowledge, beliefs, ideologies, norms or values. This reaffirms van Dijk's (2009) and Wodak and Meyer's (2009) observation that people tend to identify themselves or appraise positively to people or groups that support their way of

thinking. But there is also a high probability that the media is playing to the gallery to increase readership.

7.3.5 Politicians Stakeholder Group

The findings reveal that the politicians from the opposition often associate themselves with the affected residents to garner trust while downplaying their own political affiliations. The politicians from the ruling state government on the other hand hope to create trust by banking on their status as elected representatives who are committed to creating a progressive environment for the people. This is evident in the way they represent the residents: the opposition claims the residents are knowledgeable about RF, while the ruling state government attest that the activist and resident groups are not knowledgeable about RF but are prejudiced.

The polarised views of the politicians certainly create mistrust. This is apparent when the politicians frequently refer to the actions and viewpoint of their opponents. There is no consensus among the politicians, which indicates that they are competing with each other with the purpose of “winning” the support of the public rather than seeking for a plausible solution. This confirms the views of both Leiss (1995) and Trettin and Musham (2000) that the politicians are competing stakeholders who are in to win. This creates a dent in trust as the public are not gullible and can see through such duplicity.

The politicians from both sides of the divide highlight the indifference and irresponsibility of the government agencies in curbing the construction of illegal towers. Arguments such as these do not aid in resolving conflicts but instead breed mistrust as there is an inference that the health risk faced by the public is ignored. This blame game strengthens the arguments of Peters et al. (1996) that the government and the industry

are insensitive to the public and that such fears among the community hinder effective risk communication.

The politicians are generally involved in a blame game as their discourse on RF form chains of oppositional talk where they either counter or reject the views of the 'other'. So the politicians' representation of 'self' is mostly positive, while the 'other' is represented negatively. The politicians tend to align the 'self' with the 'in-group' that supports their own representation while they distance themselves from the 'other' or the 'out-group' as the latter group is deemed to be less trustworthy and does not share the same beliefs and values.

Attempts have also been made by the politicians, specifically the opposition, to swerve from the negative stereotype associated with politicians. They legitimise their rhetoric on RF risk related issues through personal experience as a parent, medical practitioner and a concerned citizen to build trust. Such altruism is an attempt to be viewed as more trustworthy. However, politicians are public figures and therefore, it is uncertain if such attempts would build trust or mistrust.

The term 'risk' also has different connotations depending on whether the politicians are part of the state government or the opposition. The opposition views the risk from RF emissions as life-threatening, while the politicians from the ruling state government corroborates that the risk is contained based on their policies and strict enforcement. The discourse on risk from RF exposure regardless of the politicians' affiliations is crafted to make them look responsible and reliable in the eyes of the public. However, the conflicting accusations make one party look trustworthy, while the 'other' is portrayed as untrustworthy. Trust, which is the foundation on which risk communication

is built on, becomes suspicious when politicians craft their discourse based on hidden agendas which, in this case, is to win votes from the electorates.

7.3.6 Activists Stakeholder Group

The activists true to the nature of their line of work see themselves as a non-profit group committed in helping affected residents, and creating awareness on the harmful effects of RF emission. The inference is that they are an authority of RF emission and they are taking on the role of educating and protecting the residents who are generally unaware of this issue. They have a dogmatic and bias view of the impact of RF emission on public health and are hoping to impose these views on the residents.

The rigid and limited views of the activists are highlighted by MCMC's and the politicians from the ruling state government's negative representation of them. The politicians from the opposition appraise them positively for their knowledge and awareness on RF emission. This 'us' versus 'them' and 'in-group' and 'out-group' representations validate Cormick's (2011) five key lessons on risk perception in which he identifies that people align with those whose values mirror their own. This is also reflected in the activists' negative representation of the telcos and politicians as wrong-doers who are untrustworthy, and their positive portrayal of the media because the media slant supports their opinions on RF emission.

MCMC Northern Region is portrayed positively as the 'other' by the activists and this reflects their sincerity in wanting to work with MCMC to come up with an amicable solution. Regardless of the activists' actual intention for this positive appraisal of MCMC, their role in this contestation cannot be downplayed or dismissed. This is because the constant blame game by the managers of risk has eroded the public's trust

in these institutions and has increased public's trust in citizen groups (see Peters, Covello, and McCallum, 1997).

7.3.7 Media Stakeholder Group

The media has courted a lot of controversy in this health debates on RF emission. Wilkinson (2010) states that in the field of risk research, the media is generally identified as a negative influence on the public perceptions of risk, but its 'self' representation as professionals who uphold journalism integrity disputes this assumption. The residents and the activists too look at the media as a source of information and as an avenue to publicise their frustration to the general public. This hints that the news reports are ideologically concordant to the residents' and the activists' views. This reinforces their positive perception towards the media because it operates in a direction favourable to them.

The other stakeholders accuse them of sensationalising the news or reporting favourably towards the telcos for advertising revenue. This alludes that the media is not credible as its reporting style goes against journalism norms of objectivity, accuracy, and balance. Incidentally, Eveland and Shah (2003) state that public concern about press bias is on the rise and this suggest that the media is ideologically slanted. They also highlight that "when bias was perceived it was more likely to be seen as bias *against* one's own position" (p. 104). So the ideological similarity or dissimilarity plays a part in the way the media is viewed.

In the representation of the 'other', the media's negative portrayal of MCMC, MOH and the politicians, resonate similar views expressed by the other stakeholders. The media however, does not represent the residents negatively but expresses that they

generally have a negative perception on RF. Just like MCMC, the media too describes the telcos as suffering from an image problem and this contradicts the telcos' 'self' representation as a compliant group. Hence, the media's representation of the 'other' seems unprejudiced but their 'self' representation as duty bound professionals is subjective as it is unclear if they have taken a media slant to increase readership and profits.

7.3.8 Experts Stakeholder Group

The experts identify themselves by activating their background, qualifications, experience and expertise on RF related issues to signify that they are knowledgeable and experienced professionals. This highlights the powerful position they hold as influencers in this contestation as their input based on their expertise can have an effect on the other stakeholders' reaction. While they validate their powerful position in this health debates based on their knowledge and capability, they disapprove of the role played by the media, the residents and the politicians role in this contestation.

The media is 'othered' for sensationalising news to attract readers. This is the general view of the majority of the stakeholders. But Kortenkamp and Basten (2015) doubt if, "presenting opposing viewpoints does increase perceptions of journalists' credibility" (p. 1). As Coleman (2012) highlights "institutions may be trusted by some people (whose expectations they meet), but not by others" (p. 37). He adds that "trust is not a universal relationship, but a socially differentiated, experientially variable response" (p. 37). So this representation of the media by the experts indicates that the media discourse does not mirror their views.

The residents are 'othered' in two areas: levels of knowledge and level of motivation while the politicians are 'othered' just on their level of motivation. The residents' portrayal suggests that their thinking towards RF is bias and that they protest when denied rental income. This infers that the experts are imposing their power on the residents by virtue of the knowledge and experience by stressing that their views on RF are authentic. The motivation for monetary gain and political advancement hints that the residents and politicians are manipulative and not trustworthy. So the experts' 'self' and 'other' representations are based on power and class distinction as the position they hold in the scientific community infers a higher status, while the residents', politicians' and the media's identity is constructed based on less noble qualities like biasness and dishonesty.

7.4 Representation of Social Actions (Research Question 2)

In line with Research Question 2, the representation of social actions analyses the different interpretations and different attitudes of the represented action (van Leeuwen, 1995). The analysis focuses on five themes that are prominent in the data: granting approval for the siting of telecommunication structures, construction of telecommunication structures, educating the public on RF, protests by the residents, and media reporting on RF related issues. These social actions play an important role in highlighting the factors that trigger disputes in risk communication efforts.

The findings of the representation of social actions are consistent with the 'self' representation of the social actors as the stakeholders legitimise their actions in the social practice. However, the reaction from the affected stakeholders' delegitimises the 'self' representations of the stakeholders as it highlights the inconsistencies of their actions and their 'self' representation in this contestation. The analysis thus highlights

the blame game among the stakeholder groups in the way they legitimise their own actions and delegitimise the actions of the ‘other’. There are different reasons for such actions and reactions namely “to obtain or maintain power, to achieve social acceptance, to improve community relationships, to reach popularity or fame, etc” (Reyes, 2011, p.782).

A summary of the analysis is provided in Table 7.2: Summary of representations of social actions and sub-sections 7.4.1 to 7.4.5 provide a general discussion on the analysis of each theme.

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TABLE 7.2

7.4.1 Granting Approval for the Siting of Telecommunication Structures

The social actors directly involved in this social action are MCMC, MOH, the local government and the telcos. The process is bureaucratic as the application for site approval needs to be vetted and approved by various agencies which have jurisdiction in their specialised areas. The involvement of various agencies and the diffusion of responsibility suggest that power is shared. Therefore it makes conflict resolution difficult in the event of disagreements as there is clear separation of power. There is high probability that each agency will want to protect its own interests. This is evident in the representation of the social actors in the government agencies stakeholder group as each agency is involved in a blame game.

The process also involves the approval of residents but the validity of the residents' objection is determined by the local government. This highlights the exercise of power and authority by the local government on the residents. This supports the residents' 'self' representation as voiceless in this contestation because their power is curbed though they are included as a party in the process. The politicians too play an important role in this process as the application can be rejected if they oppose these structures in their constituencies. The politicians are therefore in an authoritative position as they have the final say in the approval process. This also paves the way for abuse of power as such influence can be manipulated for their political advantage rather than for the actual benefit of the residents, and this mirrors the representation of the politicians who are deemed to be not credible and scheming in this contestation.

The telcos are required to comply with the guidelines and requirements in order to be granted the siting approval. The telcos do not dispute these requirements and accept the process as something they are required to do. This legitimises their 'self'

representation as a compliant group and hints that they are trying to appease the approving authorities and improve community relations.

7.4.2 Construction of Telecommunication Structures

In this social action, the telcos justify that the telecommunication structures benefit their customers by providing better reception. The telcos legitimise the actions by rationalising that these structures are constructed based on coverage requirements by both their marketing department and customers, and MCMC's requirements for quality service and less dropped calls. So the telcos are in a delicate situation as the public is equally vocal in the protests against the construction of telecommunication structures. They exonerate themselves of any wrong doing and paint the residents as unreasonable as the public wants good service but does not want these structures to be located close to their homes. This affirms Kleef's et al. (2010) opinion that the public is not against new technology but is opposed to the location of these structures.

The residents' reaction to the construction of these structures harmonises with their 'self' representation as helpless and passive because they are not consulted prior to the construction of these structures. This signifies an abuse of power by the telcos as they are clearly breaking the laws pertaining to the erection of such structures. The politicians and the local government verify the existence of illegal structures. This delegitimises the telcos' 'self' representation as a compliant group as they have clearly defied rules and regulations on the construction of telecommunication structures. It also shows that there are loopholes in the approval process. The telcos' actions legitimise MCMC's and the media's representation of them as suffering an image problem with the residents. The telcos' actions signify that the residents have no control over the construction of these structures in their neighbourhood. This relates to Dohle et al.

(2012) findings that the residents' fear and anger in the context of siting of base stations are based on three appraisal dimensions: control, certainty, and fairness which clearly is not in their favour. It also validates the residents' scepticism towards the government bodies (see Riedlinger & Rea, 2015; Peters, Covello, & McCallum, 1997; McComas, 2003; Frewer *et al.*, 1996); Mitchell, 1992; Kasperson, 1986) and the telcos as they are at the receiving end of manipulated outcomes.

7.4.3 Educating the Public on RF

MOH has received brickbats from almost all the stakeholder groups yet they are entrusted with the task of monitoring and reviewing information on RF emission. It is also part of their portfolio to advise the cabinet and alert the public on the latest findings on RF emission and its impact on health and this role is highlighted in their representation of 'self'. However, their actions infer that they are inactive and are dragging their feet on even updating a booklet on RF. Generally, MOH's actions indicate that they lack responsibility and competency in handling the task.

This passivity in the MOH's actions is highlighted by the rest of the stakeholder groups. Van Dijk (2001) affirms that power and dominance are connected with specific social domains like politics, media, law, education, science, etc. and their professional elites, institutions, rules and routines associated with these domains. MOH is part of a dominant organisation that plays an elite role in planning, decision-making and control on RF emission and other health related matters. So MOH's inaction is a form of misuse of power as the victims or targets of such mishandling of power are the public who are dependent on these institutions or organisations for information on public health and in this case information on RF's impact on health. Hence, even the telcos have shifted the blame and attributes MOH's apathy for the residents' lack of awareness on RF

emission's impact on health. MOH's slow moving and lethargic pace of operation highlight the bureaucratic and rigid culture in most public sectors. The inaction on MOH's part has resulted in a lack of coordination in the communication and information flow to the public.

This is implied through MCMC's efforts in organising roadshows and the politician's (from the ruling state government) attempt at writing his own speech on RF in an bid to educate the public. Such uncoordinated efforts may result in the dissemination of conflicting and unverified information to the public. This only causes confusion to the public and breaks the trust that they have on MOH and the government agencies to safeguard the people's health. Renn (2010) explains that if confusion cannot be resolved by the scientific and medical community, then it reduces the strength of confidence the public has on managers of risk.

7.4.4 Protests by the Residents

The protest by the public against the construction of telecommunication structures in the vicinity of their homes goes against their 'self' representation as a group of helpless and passive citizens. Instead, the residents' protests signify that it is a collective action by an oppressed group exercising their power with intention to influence a point of view. Their actions infer that they are victimised by the dominant 'in-group' and that they are resisting injustice by voicing their objections. The protests show that the residents are expressing their grievances stemming from being ignored in both the approval and construction stages of the telecommunication structures.

The reaction by the local government, MCMC, telcos, experts and the politicians from the ruling state government on the protest hints of blame avoidance as they deflect

culpability by labelling the residents as unreasonable. According to Hansson (2015), such reaction is expected in the face of such agencies losing credibility. The reasons behind the protests like illegal structures, inappropriate location of structures, or lack of residents or neighbours consent are backgrounded. By using blame avoidance tactics, these agencies legitimise their actions to maintain a positive 'self' representation and delegitimise the action of the residents. The politicians from the opposition however, support the residents' action as they have a more sinister reason: political advancement. Ultimately, in this social action "blaming and denying are strategically planned and serve positive 'self' representation and negative 'other' representation" (see Hansson, 2015, p. 3).

7.4.5 Media Reporting on RF Related Issues

In the analysis, the media claims that their reports on RF are not bias nor based on their own interpretation but grounded on information furnished by the experts. The inference is that the media "create(s) discourses of reality, often through a reliance on sources to help provide the media with context, important facts, as well as interpretations of different event" (Driedger, 2008 p. 25). So the media mitigates any claims that they sensationalise news but admit that they are market driven and rely on readership to remain profitable. But, MCMC, the local government, politicians from both sides of the divide, and the experts in this study concur that the news media plays an important role in risk communication but that "they are particularly prone to sensationalise the most negative aspects of technological hazards" (Wilkinson, 2010, p. 21). Wodak (2013) explains that this intensification and mitigation strategies in discourse are used to influence and perspectivise positive 'self' presentation and negative 'other' representation. So the trustworthiness and credibility of the media and the other involved stakeholders in this study are contested. This warns that formulating

and implementing risk communication initiatives are uphill tasks as the various stakeholders are clearly not on the same page.

However, the activists and the media affirm that the media reporting is fair and accurate. Essentially, this suggests the news reports reflect or support their views on RF emission. The telcos look at the media positively hoping that they can work together to provide the public with news from their perspective. Cookson (2010) admits that this line of thinking is slowly growing as there is a shift from a culture of complaint about the media towards a more sophisticated understanding of how to influence risk stories and to use the opportunities provided by media attention to get their messages across. He claims that the media is responding positively to this change and is becoming more sophisticated about risk communication concerning science and health. This is a good approach in building trust and it may pave the way for better collaboration among the stakeholders.

7.5 Recommendations for Effective Risk Communication

(Research Question 3)

The findings from the analysis of the social actors and actions have been applied on my adapted version of the Key Steps in Applying Effective Risk Communication. My model expands on Kemp's (2009) model by changing the framework to look circular rather than linear. Two additional steps (Step 6: Pretest Communication Materials and Step 9: Use multi-channel approach) are incorporated in my improved version and the final step (Step 8) in the model is renamed to Evaluate Effectiveness. These changes are congruent with the views of experts in risk communication (see Covello, 2010; Heath and O'Hair, 2010; Ruddat et al., 2010; Lundgren & McMakin, 2009; Adhikarya, 1994).

The recommendations are formulated based on the following standpoints derived from Research Questions 1 and 2:

- a. The telcos consider the sites where telecommunication structures are constructed as vital for their operations but they do not adhere to guideline strictly as firstly, there are illegal structures, secondly, some of these structures are located close to homes, and finally, the residents are not involved in the approval process as stipulated in the guidelines.
- b. The actions of the telcos have an impact on the credibility of MCMC, MOH and the local government as these agencies are part of the approval body.
- c. The pressing issue for the residents (especially those aged 40 years and above) is that these structures pose a health risk. Some residents do not want these structures because of cultural reasons and finally some of them protest out of jealousy because their neighbours get rental income from the telcos for allowing these structures to be installed on the rooftops or in the compound of their properties.
- d. The current risk communication initiatives are on a piece-meal basis with little or no participation of the residents.
- e. The risk communication methods in terms of choice of lead spokesperson, message content and media are ineffective.
- f. The risk managers namely MCMC, MOH and the local government have no clear leader in the risk communication initiatives and hence there is lack of coordination. The managers of risk are involved in a blame game and this has created an atmosphere where there is a lack of trust among the various stakeholder groups.

Based on these observations, the recommendations focus on building, strengthening or repairing trust among the various stakeholders. It highlights that risk communication is an on-going process so that risk managers are equipped to respond to risk effectively.

The recommendations touch on the appointment of a spokesperson/agency to lead the risk communication initiatives. A participatory approach which involves a dialogue with the residents is also encouraged. The recommendations also highlight ways to improve the communication process with pretested materials and a multi-media channel approach. Finally this section emphasises the need for evaluation of the programmes, strategies and tactics to determine the outcomes and the effectiveness of the risk communication initiatives with a view of identifying bottlenecks and proposing remedial actions for future programs.

7.6 Contributions of the Study

To date, there is no published research on the discourse on RF exposure from a risk communication perspective using CDA. Over the last 10 years however there have been extensive media reports which highlight the issue and this makes it all the more significant to investigate (see Kaur, 2014). As such, the premise of this study, which is a first-of-a-kind study in Malaysia, is based on the following standpoints:

- a. Risk communication on RF emission has always been looked from a communication angle and no research has incorporated linguistics examination nor a critical discourse analysis to analyse discourse on RF exposure from telecommunication structures in Malaysia. More specifically, there are virtually no studies at all examining the issues through the lens of social actors and social actions (van Leeuwen , 2008).
- b. No linguistic studies in risk has, thus far, taken into account, considered and/or analysed the viewpoints of all stakeholders involved in a contestation. This study has interviewed all stakeholder groups involved in the health debates on RF exposure and therefore the analysis provides the positions and perspectives of the

various stakeholders involved in the conflict. Such depth of information on the various stakeholders gives a clearer understanding of the problem.

- c. The findings from analysing the discourse on RF among the stakeholders can contribute to knowledge transfer in the telecommunication industry, and consequently translate into action and practice (Research Question 3). The recommendations in Chapter 6 could be incorporated in risk communication programmes by the telecommunication industry, and the government agencies like MOH and MCMC.
- d. This is the first study that has merged the concepts in risk communication and the adapted Key Steps in Applying Effective Risk Communication framework with linguistics, specifically critical discourse analysis, and van Leewun's Social Actor Network and Social Action Network frameworks. This enables the space to study the phenomena through multiple lenses which allow for a more multi layered analysis.

7.7 Scope and Limitation

The study looks at the discourses of various stakeholder groups on RF exposure from telecommunication base stations and rooftop structures in Malaysia, and specifically, at the ways in which the main actors involved in the issue are portrayed and the actions thereof are represented. The study does not consider media reports nor health reports pertaining to the issue, although they are referred to from time to time to ensure the robustness of the research. This is because the purpose of the study is to primarily ascertain the views of the main actors directly rather than depend on reported news. That said, a separate study will need to be undertaken in taking into consideration both personal and reported views, and health reports, on the issue at hand.

7.8 Implications for future research

This study only analyses spoken discourse from the various stakeholder groups involved in the contestation on the health debates on RF emission from telecommunication structures. Therefore, future research could be explored with the use of different types of data and methodology. Investigation on this issue can be extended to a larger corpus by examining media reports spanning a ten year period to determine any shifts in the attitude towards RF emission from telecommunication structures. The research could also be looked at from a field of media studies with the use of conceptual frameworks and methods of analysis from this field. Another direction could be to examine the discourse from the Gen Y age group on this issue and how it affects their telecommunication consumption patterns as they are more tech savvy and connected to modern technology. By also incorporating cross generational data from the baby boomers the study will be useful in highlighting if there are any differences in the perception of risk on RF emission and how the public from different age groups cope with such health and environmental risks. Future research could also explore discourse on RF exposure from a racial dimension to ascertain if there are any differences in the way the various races in Malaysia view the issue. The findings from these suggestions for future research will give fresh insights to the problem and help augment risk communication plans and strategies.

7.9 Concluding Remarks

It is fervently hoped that this study will serve as a catalyst that will help fuel a greater conversation in the public domain, as well as along the corridors of power, both at state and federal level, on risk communication programmes on RF exposure in Malaysia. This study is able to provide recommendations to the problems facing risk communication personnel as the findings reflect the viewpoints of various stakeholders involved in the

contestation. As such, this study may provide a starting point for future risk communication plans where everyone's voice is not only heard and respected, but acted upon through decisive action. It will require all stakeholders coming to the table in arriving at amicable solutions that benefit all as the findings and recommendations from this study have the potential to assist the Malaysian agencies involved in risk communication plans.

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APPENDIX A

GLOSSARY OF SCIENTIFIC AND TECHNICAL TERMS

B:

Base station: A mobile phone base station—or tower—provides coverage for one or more geographical areas. A mobile phone network is made up of base stations operating together to provide service to users moving from place to place within a coverage area. Mobile phone base stations must be carefully located in relation to each other, to ensure minimum interference and good coverage for users (Australian Communications and Media Authority, 2015).

C:

Carcinogenic: Carcinogen is a substance or agent that causes cancer. Related terms include the adjective "carcinogenic" and the nouns "carcinogenesis" and "carcinogenicity" (American Cancer Society, 2015).

Chemical bond: A chemical bond is a strong attraction between two or more atoms. Bonds hold atoms in molecules* and crystals together. There are many types of chemical bonds, but all involve electrons which are either shared or transferred between the bonded atoms (General Chemistry Online, 2015).

Cosmic rays: A stream of atomic nuclei of extremely penetrating character that enter the earth's atmosphere from outer space at speeds approaching that of light (Merriam Webster Online, 2016).

E:

Electromagnetic field (EMF): Electric fields are created by differences in voltage: the higher the voltage, the stronger will be the resultant field. Magnetic fields are created when electric current flows: the greater the current, the stronger the magnetic field. An electric field will exist even when there is no current flowing. If current does flow, the strength of the magnetic field will vary with power consumption but the electric field strength will be constant. Electromagnetic fields are present everywhere in our environment but are invisible to the human eye. Electric fields are produced by the local build-up of electric charges in the atmosphere associated with thunderstorms. Besides natural sources the electromagnetic spectrum also includes fields generated by human-made sources: X-rays are employed to diagnose a broken limb after a sport accident. The electricity that comes out of every power socket has associated low frequency electromagnetic fields. And various kinds of higher frequency radiowaves are used to transmit information – whether via TV antennas, radio stations or mobile phone base stations (World Health Organization, 2009).

Electromagnetic radiation: Electromagnetic (EM) radiation is a form of energy that is all around us and takes many forms, such as radio waves, microwaves, X-rays and gamma rays. Sunlight is also a form of EM energy, but visible light is only a small portion of the EM spectrum, which contains a broad range of electromagnetic wavelengths (LiveScience, 2015).

I:

Ionizing radiation: Ionizing radiation is radiation with enough energy so that during an interaction with an atom, it can remove tightly bound electrons from the orbit of an atom, causing the atom to become charged or ionized (World Health Organization, 2016).

Infrared radiation: Infrared radiation is a type of electromagnetic radiation, as are radio waves, ultraviolet radiation, X-rays and microwaves. Infrared (IR) light is the part of the EM spectrum that people encounter most in everyday life, although much of it goes unnoticed. It is invisible to human eyes, but people can feel it as heat (LiveScience, 2015).

N:

Non-carcinogenic: not causing cancer (Merriam Webster Online, 2016).

Non-ionizing radiation: Non-ionizing radiation is the term given to radiation in the part of the electromagnetic spectrum where there is insufficient energy to cause ionization. It includes electric and magnetic fields, radio waves, microwaves, infrared, ultraviolet, and visible radiation (World Health Organization, 2016).

R:

Radiation: Energy emitted from a source is generally referred to as radiation. Examples include heat or light from the sun, microwaves from an oven, X rays from an X-ray tube, and gamma rays from radioactive elements (World Health Organization, 2016).

Radioactive materials: Materials that emit radiation energy in the form of alpha, beta, or gamma particles or rays – all of which can damage living tissue (Source: World, Nuclear Association, 2016).

RF: Radiofrequency (RF) energy is another name for radio waves. It is one form of electromagnetic energy which consists of waves of electric and magnetic energy moving together (radiating) through space. The area where these waves are found is called an electromagnetic field. Radio waves are created due to the movement of electrical charges in antennas. As they are created, these waves radiate away from the antenna at the speed of light (U.S. Food and Drug Administration, 2014)

RF-EMF: Radiofrequency (RF) electromagnetic radiation (EMR) is the transfer of energy by radio waves. RF EMR lies in the frequency range between 3 kilohertz (kHz) to 300 gigahertz (GHz). RF EMR is non-ionising radiation, meaning that it has insufficient energy to break chemical bonds or remove electrons (ionisation) (Australian Radiation Protection and Nuclear Safety Agency, 2015)

T:

Telecommunication antennas: Telecommunication antenna" means a structure intended to radiate and/or receive a source of non-ionizing electromagnetic radiation (NIER) and accessory equipment related to broadcast services, private radio services, pagers, beepers, data and common carriers including AM, FM, two-way radio, fixed point microwave, commercial satellite, cellular and PCS communication antennas (Wasco Municipal Code, 2016).

Y:

y-ray: Y-rays or Gamma-rays are a form of electromagnetic radiation, as are radio waves, infrared radiation, ultraviolet radiation, X-rays and microwaves. Gamma-rays can be used to treat cancer (LiveScience, 2015)

X:

X-ray: X-rays are powerful invisible rays that can pass through various objects and that make it possible to see inside things (such as the human body). An image that is created by using X-rays is usually used for medical purposes (Merriam Webster Online, 2016).

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APPENDIX B

IARC MONOGRAPHS ON THE EVALUATION OF CARCINOGENIC RISKS TO HUMANS

AGENTS CLASSIFIED BY THE IARC MONOGRAPHS, VOLUMES 1-114		
Group 1	<i>Carcinogenic to humans</i>	118 agents
Group 2A	<i>Probably carcinogenic to humans</i>	75
Group 2B	<i>Possibly carcinogenic to humans</i>	288
Group 3	<i>Not classifiable as to its carcinogenicity to humans</i>	503
Group 4	<i>Probably not carcinogenic to humans</i>	1

Source: <http://monographs.iarc.fr/ENG/Classification/index.php>

APPENDIX C

INTERVIEW GUIDE FOR MCMC

1. There is an increase in citizen action groups in Penang like the EMFS Radiation Protection Alliances. How does this affect your operations?
2. Which areas in Malaysia are the citizen groups and residents more active about RF exposure from telecommunication structures and why?
3. What steps are MCMC taking to address this issue? Could you please explain your risk communication initiatives?
4. Are the public's growing concerns on RF justified more so with the government's liberalization of telcos following the issuance of 4G license?
5. Who are the stakeholders that MCMC consults when you meet the public to address their concerns?
6. Is MCMC involved in the approval process for telecommunication structures?
7. How involved is the Ministry of Health in dealing with this issue?

APPENDIX D

INTERVIEW GUIDE FOR MOH

1. There is growing concern about the risk of radio frequency radiation on public health especially after the Consumer Association in Penang (CAP) published a CAP Guide titled “How Unsafe Is Your Mobile Phone plus The Dangers Of Transmission Tower”. What role is the Ministry of Health playing in addressing this fear?
2. In 1996 a committee was set-up by the Ministry of Health to study the effect of radiation on human through the use of radio-communication/cellular phones. Could you please share with us the findings from this study? Is this finding made public?
3. What is the current status of this committee? Is it still in existence?
4. The Malaysian Communications and Multimedia Commission has initiated awareness campaigns to educate the public on radio frequency radiation (RF) emission from telecommunications structures. Is the Ministry of Health involved in these awareness campaigns? If yes what is the ministry’s role?
5. In 2008, a booklet entitled “Guidance To Safety & Health Aspects of Base Stations & Mobile Phones” was published by the Ministry of Health Malaysia. Could you please let us know how many copies have been distributed? Are there any feedback on the booklet?
6. How could the public obtain a copy of this booklet? On demand request, web etc.?
7. How effective is this booklet in meeting its objectives?
8. Are there any laws/regulations which the Ministry of Health has enforced on RF exposure on humans? Do these laws/regulations comply with the regulations set by WHO regarding base stations and other transmission structures?

9. What initiative has the Ministry of Health taken to educate the public on the perception of RF exposure? Could you brief us on this?
10. What other measures do you think are needed to be undertaken to address this fear?
11. How does the Ministry of Health ensure that the Malaysian public is well protected from unnecessary exposure to RF?

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APPENDIX E

INTERVIEW GUIDE FOR LOCAL GOVERNMENT

1. Please explain the process taken by the local town council in granting approval to telecommunication companies for erecting base station.
2. Who sits on the committee which grants the approval?
3. Are there any safety standards that telecommunication companies must comply with before approval is granted?
4. Are the local residents consulted before approval is granted?
5. What action does the local council take to address protests or complaints by the public (or other complainants)?
6. What is the required distance of a base station location from a residential unit, housing project, school or hospital?
7. Are telecommunication companies required to get approval from the local council before placing antennas on buildings/places of worship?
8. Is the local council responsible if the base station collapses or if any danger arises from the installation of antennas on rooftops?
9. What role does the local council play in MCMC's awareness campaigns on RF exposure from base stations?
10. Do you feel that the residents are unreasonable when they protest about base stations being located near their homes or schools?
11. What are your views on RF exposure from telecommunication structures?

APPENDIX F

INTERVIEW GUIDE FOR TELCOS

1. Since cell phones can only be used in areas served by transmission stations: a) who determines the locations of these base stations? and b) what is the criteria used for determining these locations?
2. Do the base stations you operate comply with Health, Safety and Environment Regulations?
3. How safe is the Universal Mobile Telecommunication System (UMTS)? Does the electromagnetic tolerance in the environment pose any risk to mobile phone users?
4. There is an increase in citizen action groups in Malaysia like the Penang EMFS Radiation Protection Alliances. How does your organization address their concerns?
5. The public is alarmed by the conflicting views expressed by both scientists and those in the medical fraternity. How does your organization alleviate the fears of the general public?
6. Does your organization hold ongoing discussions with all stakeholders and in particular with the communities where your telecommunication structures are located?
7. What role does the Ministry of Health play as they are an important stakeholder?

APPENDIX G

INTERVIEW GUIDE FOR RESIDENTS

1. How did you get involved in this RF issue?
2. What is your main concern about RF from telecommunication structures?
3. Where do you get your information about RF?
4. Did you verify the facts to find out more?
5. Do you go into the WHO and ICNIRP websites for information on RF?
6. Do the telcos consult you and your neighbors before putting up telco structures?
7. What about the approving authorities like the local town councils and MCMC, do they inform you or your neighbors that telco towers will be constructed in your neighborhood?
8. What do you and your neighbors do when you find out that telco structures are going to be located in your neighborhood?
9. Do you or your neighbors seek help from the local wakil rakyat (politicians)?
10. Have you attended any talks conducted by MCMC on RF?
11. How effective is the Health Ministry in educating the people on RF?

APPENDIX H

INTERVIEW GUIDE FOR POLITICIANS

1. There is an increase in citizen action groups in Malaysia on RF from telecommunication structures. What are your views on this?
2. Do the local residents seek your assistance with regard to telecommunication structures being erected near residential areas?
3. The public is confused with some many views expressed by both scientists and those in the medical fraternity regarding the risk of cell phone radiation. As a wakil rakyat, have you personally investigated such an important issue that affects the wellbeing of the public?
4. Is the issue on RF exposure played up for political reasons or is it a genuine problem?
5. Do you think the media has played a responsible role in publishing information that is both truthful and unbiased to alleviate the residents' fears or raise the level of awareness of such perceived dangers? Have they done a good job so far? What are your views?
6. How effective is MCMC, MOH and local government in addressing the residents' concerns?
7. As RF exposure from telecommunication structures is an important issue, has it ever been discussed within your party by members at branch, divisional, state or national level? Could you share with us what are your party's views?

APPENDIX I

INTERVIEW GUIDE FOR ACTIVISTS

1. How did you get involved fighting for this cause?
2. Where do you get your information on RF?
3. Did you verify the facts to find out more?
4. Do you go into the WHO and ICNIRP websites for information on RF?
5. Are you invited by the telcos to discuss your concerns on RF?
6. Are you invited by the MCMC to discuss your concerns on RF?
7. How do you help the residents who seek your help?
8. Do you seek help from the politicians?
9. Is the media playing an important role in informing the public on RF related issues?
10. How effective is the Ministry of Health in addressing the concerns of the public on RF related issues?

APPENDIX J

INTERVIEW GUIDE FOR THE MEDIA

1. There is an increase in citizen action groups in like the EMFS Radiation Protection Alliances. Could you please let us know what role the media is playing in either dismissing such fears or raising the level of awareness of such perceived dangers?
2. Do the media ensure that all reports published are accurate and unbiased? Also, do the media provide adequate space and coverage to ensure that all stakeholders' views – the public, scientists, medical experts, telecommunication companies and relevant government bodies – are heard?
3. How qualified and well versed are the journalists in covering such issues as scientific and medical knowledge is required to ensure accurate reporting?
4. As telecommunication companies are one of the biggest advertisers in the country, there is growing public perception that the media publishes “positive articles” given their huge purchasing power. Please comment.
5. The media has often been accused of sensationalizing news reports to increase readership. Please comment.
6. As the Government has the final say in the issuance of licences, do you think that political parties and/or those with vested interests have raised the RF radiation issue when their favoured companies lost in the bidding process. What are your views?
7. How effective is MCMC, MOH and the local government in addressing this issue?
8. What are your views on RF from telecommunication structures?

APPENDIX K

INTERVIEW GUIDE FOR EXPERTS

1. What is the impact of radiation from telecommunication structures on humans?
Could you please share with us any findings from research done in the area?
2. Scientific evidence on radiation from base stations is conflicting and inconclusive.
How then can we alleviate the fears of the general public?
3. From an expert's point of view can the public's risk perception on radiation from base stations be changed? What can be done to educate the public on this issue?
4. The Malaysia Nuclear Agency conducts tests on radiation levels near base stations.
How do you convince the public that these tests are reliable?
5. MCMC holds awareness campaigns to educate the public on radio frequency radiation (RF) exposure from telecommunications structures. Are you involved in these campaigns? If yes, what is your role?
6. Many countries have already established laws/regulations to ensure that the public are not overexposed to RF. Are there any such laws/regulations in Malaysia?
7. In light of the fact that the residents near telecommunication base stations are concerned of the effect of "harmful radiation" on their health, who then in your opinion, carries more weight when addressing the public on this issue, the medical or science fraternity?
8. Are you involved with either MCMC or the Ministry of Health in preparing educational materials on radiation for distribution to the general public? How effective are these materials?
9. What other measures do you think are needed to be undertaken to address this fear?


Table 7.1 : Summary of Representation of Social Actors

Stakeholder		Representation of “Self”	Representation of the “Other”		
			Othering due to their level of credibility	Othering due to their level of knowledge	Othering due to their level of motivation
Government departments/agencies stakeholder group	MCMC	Trusted body on RF	<p>MOH is subordinated. Powerful but playing a secondary role.</p> <p>Telcos suffering from a credibility problem.</p> <p>Activists inconsistent on their stand on RF</p> <p>+ Media sensationalises news.</p>	Residents’ low level of knowledge is linked to their negative perception of RF	<p>Politicians’ involvement is politically motivated.</p> <p>*Residents motivated for economic reasons (rental income)</p>
	MOH	<p>I. Monitoring and reviewing body</p> <p>II. Collaborator</p>		<p>Residents are either prejudiced or influenced for cultural reasons.</p> <p>Activists influenced by unreliable source of information.</p>	Residents motivated for economic reasons (rental income)

	Local Government	<p>I. Custodian of safety and compliance</p> <p>II. Non-experts in RF</p> <p>III. Support agency to the other government bodies</p>	<p>MCMC, MOH and the telcos are not pro-active. Shifting the responsibility of dealing with residents to the local government.</p> <p>+Media reporting is bias giving greater importance to the residents' complaints</p> <p>←</p>	<p>Activists are not knowledgeable about RF.</p> <p>Residents do not have the correct information on RF.</p> <p>The Chinese are more aggressive in voicing their dissatisfaction for cultural reasons.</p> <p>Residents aged above 40 years are more conservative and not receptive to information on RF.</p>	<p>Residents motivated for economic reasons (rental income).</p> <p>Politicians' involvement is politically motivated.</p> <p>→</p>
Telecommunication companies (Telcos)	Compliant group		<p>The other stakeholders in general are portrayed as deceptive and inefficient.</p> <p>MOH is credible but plays a subservient role rather than a significant role.</p> <p>MCMC is reliable</p>	<p>Residents are not knowledgeable enough to view RF objectively.</p> <p>Politicians' level of knowledge on RF is questionable yet they support the residents.</p>	<p>*Residents motivated for economic reasons (rental income).</p>

Residents		<p>I. Helpless public</p> <p>II. Passive citizens</p> <p>III. Wrongdoers and victims</p>	<p>Chinese media is credible as it covers the negative effects of RF.</p> <p>Telcos unsympathetic and violates guidelines.</p> <p>MOH lacks credibility as it is inactive and insincere</p>		Experts support telcos for financial assistance for research and development initiatives.
Politicians	Ruling Party (State Government)	Transparent government	<p>MCMC not proactive and is bureaucratic.</p> <p>MOH is inactive</p> <p>Local government is laid back and slow.</p> <p>Telcos have not adhered to guidelines.</p> <p>Media reporting is biased as it does not favour the state government.</p>	<p>Activists are senior citizens who are not knowledgeable about RF.</p> <p>Residents in general do not have the correct information on RF.</p>	<p>Politicians from the opposition motivated for political gain.</p> <p>*Residents motivated for economic reasons (rental income).</p>

	Opposition (State government)	An ally to the affected residents.	<p>MCMC misleading the residents by not providing correct information on RF.</p> <p>MOH and expert (MINT) are not credible as they adopt guidelines blindly.</p> <p>Activists are sincere as they want to create awareness on the negative effects of RF emission.</p>	<p>Residents are protesting because they know about the harmful effects of RF emission.</p> <p>Chinese are more concerned about environmental issues while generally Malays are more laid back and unconcerned.</p>	Media favours telcos because of advertising revenue.
Activists		A non-profit group committed in issues related to RF exposure	<p>MCMC (Northern Region) plays a positive role and is sincere in its approach to the problem.</p> <p>Media reporting is credible as the health risk from RF is real.</p>	<p>Public in general have low knowledge on RF.</p>	<p>Politicians are motivated for political gain.</p> <p>Telcos are indifferent to residents' concerns on RF because of economic gain.</p>
Media		Duty bound professionals	<p>MCMC, the experts (MINT) and MOH are ineffective as they do not carry out their duties effectively.</p> <p>Telcos are suffering from an image problem</p>	Residents in general regardless of race have a negative perception of RF.	Politicians are motivated for political gain.

Experts	Knowledgeable and experienced professionals	<p>+ Media sensationalises news on RF.</p> 	Public generally have a very rigid understanding of RF.	<p>Politicians are motivated for political gain.</p> <p>*Residents motivated for economic reasons (rental income).</p>
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Note: * The representation of residents under level of motivation column refer to residents who are landlords whereas the residents under level of knowledge column represent residents in general.

+The arrows $\leftarrow \cdots \rightarrow$ linking the level of credibility and the level of motivation for the representation of the media infers that there is a connection between both themes in this representation. Sensationalising news points to low credibility but it also infers that the underlying reason is to increase circulation and revenue.

Table 7.2: Summary of Representations of Social Actions

Social Action	Action	Reaction
Granting approval for the siting of telecommunication structures	<p>Approval depends on adherence of guidelines.</p> <p>The approval process is compartmentalized and bureaucratised - needs to go through many government agencies that have jurisdiction in their specialised areas.</p> <p>The telcos are required to follow policies and protocol to obtain approval.</p>	<p>The telcos acknowledge that the approval is not guaranteed but is determined by their compliance to the guidelines.</p> <p>The telcos only acknowledge MCMC in the approval process and backgrounds the other agencies. This signifies that the telcos have a paternalistic relationship with MCMC who is the regulator of the telecommunication industry in Malaysia. As such, they are legitimising only MCMC's powerful position in the approval process</p> <p>The telcos naturalises the whole process as something that they ought to do in their line of business.</p>
Construction of telecommunication structures	<p>The telcos' action is transactive because it involves other parties such as the telcos' own planning/marketing department, customers who demand/complaint for better coverage and MCMC who has stringent quality requirements.</p> <p>The telcos' are placed in a delicate situation as they need to please customers who demand good service and those who oppose these structures.</p> <p>The telcos legitimise their role as they indicate that they are fulfilling the requirements set by the regulator and by law for quality service.</p>	<p>The residents, the politicians in general and the local councils feel that the stringent policies and bureaucratic red tape are not a deterrent to the telcos as there are many illegal telecommunication structures.</p> <p>The actions of the telcos and the reactions of the affected residents suggest that there are no checks and balances in the approval process as the telcos are able to still circumvent the system despite stringent rules and regulations.</p>

Educating the public on RF	<p>MOH is the main actor involved in educating the public.</p> <p>But MCMC also organizes roadshows and the politician from the ruling state government claims that he gives talks on RF</p>	MCMC, the telcos and the residents attest that MOH is not proactive in communicating with the public on RF emission.
Protests by residents	<p>Residents state that the telcos do not follow guidelines and construct the structures without informing them.</p> <p>Residents want the structures removed or they want an assurance from the authorities “in black and white” that the structures are not health hazards.</p>	<p>Except for the politicians from the opposition all other stakeholders (the local government, MCMC, politicians from the ruling state government, the telcos and the experts) claim that the residents are unreasonable and that some are motivated to protest because they do not receive rental income.</p> <p>The politicians from the opposition support the residents’ action.</p>
Media reporting on RF related issues	<p>The media states that their reporting is not biased but based on technical information from the experts. They also state that the news reports are not based on their own interpretation of the issue.</p> <p>The media affirms that they do not sensationalise news on RF but instead emphasise on the headlines to grab attention.</p> <p>The media highlights that they cover news based on issues that will interest their target market so as to maintain or increase circulation.</p>	<p>The residents and activists believe that the media reporting is fair and accurate.</p> <p>The telcos appreciate the media’s role as it allows them to tell their side of the story.</p> <p>The experts, MCMC, the local government and politicians from both sides of the divide claim that the media sensationalises the news on RF to increase circulation.</p>