Disease Representations in Late Modernity:
Lung Cancer Stories in the Canadian Print Media

Jessica Berger

Thesis submitted to the
Faculty of Graduate and Postdoctoral Studies
In partial fulfillment of the requirements
For the Master of Arts degree in Communication

Department of Communication
Faculty of Arts
University of Ottawa

Abstract

The following thesis describes and analyses the representation of lung cancer in the Canadian print media. The thesis employs a theoretical framework comprised of Giddens' theory of reflexivity and Goffman's theory of framing, to understand the social dynamics of negotiation behind the disease's portrayal in the media, in a late modern context. Late modernity was defined by institutional reflexivity and a focus on understanding and mitigating risk. The research was conducted through a content analysis and examined quantitative trends that contributed to a subsequent qualitative interpretation. The results show that the coverage of lung cancer decreased over time. The analysis shows a discourse of a biomedical institution that has unsuccessfully controlled the disease, a lack of patient advocacy, particularly among celebrities, and a continued conflation of smoking behaviour and lung cancer, all of which contributed to the decreasing coverage. The framing processes point to a society focused on understanding risk through studying the disease's causes, as well as one concerned with legislative debate and behavioural prevention. The emergence of a frame focused on the patient's lived experience might contribute to an improved representation of the disease.

Dedication & Acknowledgements

Dedication

This thesis is dedicated in memory of my aunt, Marian Louise Grant (1953-2007).

> Change, we were sure, was for the better always. We were revisionists; what we revised was ourselves. It's strange to remember how we used to think, as if everything were available to us, as if there were no contingencies, no boundaries; as if we were free to shape and reshape forever the ever-expanding perimeters of our lives. I was like that too, I did that too. – Margaret Atwood, *The Handmaid's Tale*, 1998.

Acknowledgements

I would like to thank Dr. Isaac Nahon-Serfaty for supervising my thesis, and guiding the project from an idea in the mind's eye through to completion. He provided invaluable insight, advice, and support over the past two years. I will always cherish our conversations!

I would also like to thank Drs. Mahmoud Eid and Rukhsana Ahmed for their feedback; they have each offered unique comments and criticisms that led to the production of a better thesis. I particularly appreciated Dr. Eid's guidance on crafting a satisfactory methodology, and the many insights stemming from Dr. Ahmed's health communication course.

In many ways this thesis is a team undertaking, so special thanks are to my parents, Robert and Susan Berger for their encouragement and assistance, Jonathan Buset for his love and support, and to Richard Buset and Elizabeth McWeeny for their generosity. Thanks also to all of my siblings, Katharine and Jonathan, as well as my extended family, friends, and colleagues in Montreal, Ottawa, Thunder Bay and elsewhere.

Table of Contents

List of Tables and Figures

Tables

Figures

Chapter One: Introduction

> AstraZeneca Plc, Europe's second-largest pharmaceutical firm, said yesterday that the number of deaths linked to its lung cancer drug Iressa in Japan had risen to at least 173 by Jan. 31. The dead were among 473 patients who developed lung disorders blamed on the drug, including interstitial pneumonia, a company official said at a briefing on an interim report by specialists on side-effects from the drug. The fatality figure did not include patients who died from side-effects other than lung disorders. (*AstraZeneca lung-cancer drug linked to 173 Japan deaths*, *National Post*, 2003)
>
> ***
>
> Here are the top five leading causes of death in men: Lung cancer. This is the No. 1 cause of cancer deaths in men and women. As soon as you stop smoking, your risk of the disease drops. (*Live*, *National Post*, 2008)
>
> ***
>
> But asbestos has a big problem. When used, it promiscuously sheds tiny dust fibres. Once inhaled, the fibres become tangled in lung tissues, where they wreak havoc - typically lung cancer, asbestosis and mesothelioma, a rare, painful and almost always fatal cancer of the lining of the chest wall. … Since it's a carcinogen, Canadians don't use much of it any more. Even the asbestos in the Parliament Buildings is being removed. But the country remains one of the world's biggest purveyors of the deadly mineral, selling abroad 95 per cent of the output from the country's two remaining mines, both in Quebec, a business worth about $93-million a year. … It's not just that Canada is home to companies that sell asbestos abroad. The federal and Quebec governments actively promote it, spending tens of millions since 1984 to encourage the remaining markets, mainly in developing countries. (*Asbestos shame*, *The Globe and Mail*, 2007)
>
> ***
>
> The Diagnosis we're discussing is, of course, the one wherein the doctor begins to speak, in a very good-natured manner, ("Well, the test results have given us some answers...") and then goes on to say a lot of stuff that doesn't really make any sense ("The tumour is what we call squamous or sessile ..."), and somewhere in there announces that you are going to die. Way way sooner than you thought. "Ah," you think, "time to go mountain climbing." (*Each day like it's my last*, *National Post*, 2009)
>
> ***

In his book, *The Emperor of all Maladies*, Siddhartha Mukherjee (2010) writes about cancer's long history, detailing that documentation of the disease dates back to 2,500 B.C.E. His book chronicles the progressive biomedical understanding of the disease over time, relaying evolving detection and treatment techniques, while interweaving the story with individual anecdotes. Indeed, in the last 4,500 years, as people have been diagnosed and died from the disease, the social perception and political management of cancer has evolved along with

biological and epidemiological understandings. Yet as Susan Sontag (1978) relates, as its causes are generally still not well understood, cancer remains a great mystery in contemporary society. While many other diseases can be appropriately managed through prevention and treatment, the sheer volume of patients who are diagnosed with and die from cancer points to the work that is still needed to control the disease. The most recently available Canadian statistics from 2005 state that cancer is the second leading cause of death, with 68,790 people dying from the disease that year, after diseases of the circulatory system (Public Health Agency of Canada, 2005). The Canadian Cancer Society (2012) estimates that in 2012, there will be 186,400 new cancer cases and 75,700 deaths from the disease. Furthermore, according to Public Health Agency of Canada (2007), cancer accounts for $14.2 billion in economic costs. Cancer, therefore, has enormous individual, social, political and economic impacts in contemporary Canadian society.

In addition to being understood as a global burden, cancer has come to encompass and also be divided among many different biological manifestations of the disease, meaning that all are linked to abnormal cell growth, but occur in various systems and organs in the body. For instance, leukemia results from the multiplication of abnormal immature white blood cells (Canadian Cancer Society [CCS], 2009b) while colon cancer results from a site-specific growth in the colon and rectum (CCS, 2009a). Lung cancer, the focus of this thesis, is a cancer that originates in the lungs (CCS, 2009c). The Canadian Cancer Society (2012) reported that lung cancer is the second leading cause of cancer morbidity (after prostate cancer) with 25,600 new diagnoses expected in 2012, thus representing 13.7% of all cancer cases. Lung cancer is also the leading cause of cancer mortality with 20,100 deaths expected in 2012, representing 26.6% of all cancer deaths (CCS, 2012). Lung cancer is thus a particular burden on Canadian society, leading to thousands of annual diagnoses and premature deaths.

In considering cancer as a unified entity, meaning "cancer" in general, as well as by site, meaning the differences between types of cancers such as the breast, pancreas, etc., one must also consider the qualities of the disease(s). In other words, social scientific researchers should have an understanding of how cancer and different cancers are regarded, as there are implications for individuals and society. In such a respect, the media, and media content in particular, are arguably an important source to better understand how the disease is negotiated. Understanding the nuances of the disease's representation can reflect on the changes needed, if any, to support patients and caregivers, as well as improve public health policies and social support programs. The need for insight into the representation of lung cancer in a Canadian media context is the foundation of the following thesis.

1.1 Research Framework, Methodology and Objectives

The goal of the thesis is to conduct a content analysis of Canadian print media to better understand how lung cancer is portrayed and negotiated. By examining one of Canadians' main media vehicles, the newspaper (Interactive Advertising Bureau of Canada, 2010), the data collected and analysed may reveal the underlying social dynamics behind the disease. To examine the portrayal of lung cancer in the Canadian print media the thesis employs a theoretical framework stationed at the intersection of Giddens' theory of reflexive social actor negotiation in late modernity and Goffman's theory of framing. Giddens (1991) argues that social actors create understandings of topics based on a dynamic process of negotiation, and differentiates between traditional and late modern societies. He posits that the media are a part of a mediation system, wherein individuals are increasingly exposed to a plethora of information that affects one's self-understanding as well as the broader social world (Giddens, 1991). Within a mediated, reflexive context then, social actors negotiate knowledge claims over time, shaping contemporary society

and one another's understanding of a topic. Goffman (1974) defines framing as a "schemata of interpretation" (p. 21), wherein the way a topic is discussed includes some aspects while excluding others, thus giving a situation meaning. Particular frames present in the media may reveal the broad dynamics through which a topic is negotiated. Describing and interpreting how the disease is portrayed with particular attention given to the framing processes and the social actors featured in a late modern context offers a unique way to understand how the discourse on disease emerges. From this theoretical standpoint the implications of the media content for individuals as well as society can then be extracted.

In fact, there is much empirical evidence that point to the media's influence in society. Scholars show that the print media act as a source of information for citizens, and can influence individual awareness as well as behaviour (Meissner, Potosky, & Convissor, 1992; Redmond, Baer, Clark, Lipsitz, & Hicks, 2010; Stryker, 2003; Wade & Schramm, 1969; Winkler, Kanouse, Brodsley, & Brook, 1986). Other scholars point to the influence of media on public health policy (Brown, Zavestoski, McCormick, Mandelbaum, & Luebke, 2001; Bryant, 2009; Clarke, 2005; Klaidman, 1991). Interestingly, a plethora of research has examined the media's qualitative representations of the breast and prostate cancer and described their societal and individual implications (Clarke, 1999a, 1999b; Clarke, 2004; Donelle, Hoffman-Goetz, & Clarke, 2005; Halpin, Phillips, & Oliffe, 2009; Kedrowski & Sarow, 2007; Kolker, 2004). Only a few studies, however, discuss the representation of lung cancer that therefore points to the need for this study.

The research presented therein was conducted through a content analysis, a popular technique in communication research, of Canadian print media. Three hundred eight articles published between 2000 and 2010 from the *National Post* and *The Globe and Mail* were examined. In previous studies, content analysis has been used to conduct both qualitative and

quantitative research, where the former involves description and interpretation and the latter involves the counting of occurrences. In this thesis, the quantitative trends point to interesting aspects to be studied in the qualitative analysis, with the aim of providing a more comprehensive understanding of the disease' portrayal.

To understand the portrayal of the lung cancer in the Canadian print media, specific research objectives guided the collection and analysis of the data. The thesis thus aims to (a) relate the changes in portrayal over time with regard to frequency of occurrence, length of and emphasis of articles; (b) describe the themes, frames, tones and social actors implicated in the cancer's representation and their changes over time; (c) relate the representation of smoking and non-smoking lung cancer patients and its change over time; (d) explore each frame in depth and relate the process of reflexive negotiation among social actors within each of the frames. The first objective thus examines overall quantitative coverage trends while the second and third objectives provide avenues for the descriptive analysis of the disease's overall qualitative portrayal. The fourth objective allows for a thorough analysis of each of the frames and thus to reveal the larger social processes of reflexive negotiation in late modernity. The overall aim is to offer a baseline understanding of lung cancer's portrayal that may contribute to improved understandings of disease negotiation in society as well as reflexive improvements in public healthy policy and advocacy, and societal and individual perceptions.

1.2 Summary of Thesis Chapters

The thesis is divided into five subsequent chapters as follows: *Chapter Two* reviews the literature and describes the theoretical framework in which the research is undertaken. The chapter thus relates the theories of reflexive negotiation in late modernity brought forward by Giddens, and considers the empirical evidence that point to the media's influence in society.

Framing theory as developed by Goffman as well as its contemporary applications is then elaborated upon. The chapter concludes with a review of research on the media's representation of disease, cancer and lung cancer therefore providing a narrowly defined theoretical context for the subsequent research. *Chapter Three* presents the content analysis methodology, discusses the quantitative and qualitative considerations of the approach, and describes the particular elements of the research undertaking. *Chapter Four* presents and analyses the overall results with respect to the first three research objectives mentioned above within the context of the literature and theoretical framework. *Chapter Five* undertakes a subsequent framing analysis, aiming to build on previous research in disease and cancer framing and address the fourth objective, by describing and discussing the frames in depth as well as the dynamics of negotiation within the frames, again within the context of the literature and theoretical framework. *Chapter Six*, the conclusion, summarises the research undertaking and results, explores the contributions of the research and the implications of the findings, as well as discusses the research's limitations and avenues for future study.

Chapter Two: Literature Review and Theoretical Framework

In acknowledging that the world's current social structures are remarkably different from previous structural patterns, a need is created for communication research to be conducted within a framework that elucidates the particular implications for modern society. A perspective on society's contemporary structuring processes provides a broad standpoint from which to uncover and examine the flow of discourse on particular topics as represented in the mass media. The following chapter thus introduces a theoretical review of modern social structures through an overview of the principal processes and concepts found in Anthony Giddens' (1991) theory of reflexivity in late modernity. After the discussion of late modernity, the chapter presents an overview of the media's role in portraying health-related topics in contemporary society, followed by Erving Goffman's (1974) concept of framing and subsequent expansions on the latter theory as related to media content. The chapter then reviews studies on the media's portrayals of disease, cancer and lung cancer. Finally, the previous considerations are synthesized in order to create a satisfactory theoretical framework through which to analyse the representation of lung cancer in the Canadian print media.

2.1 Reflexivity in Late Modernity

Much of Giddens' scholarship aims to discuss the relationship between *individual agency* and *social structures*. In the *Constitution of Society*, Giddens (1984) defines agency as concerning "events of which an individual is the perpetrator, in the sense that the individual could, at any phase in a given sequence of conduct, have acted differently" (p. 9). Meanwhile, he defines structure as "organized set of rules and resources" (Giddens, 1984, p. 25) involved in the "reproduction of social systems" (p. 185). Giddens (1984) supports a theory of mutual dependence between individuals and society, entitled *structuration theory*. Giddens emphasizes

that his understanding of the relationship between agency and structure, unlike functionalism and structuralism, does not privilege structure over agency. Rather, the theory claims that society is comprised of processes that guide and constrain individual action, yet individual actions are that which fundamentally comprise macrological societal structures (Giddens, 1984). In his conceptualization of the interconnected relationship between agency and structure, social interaction rather is a central tenet at the reproductive root of the social agent themselves as well as the macrological social structures that constrain interaction (Giddens, 1984). In other words, without interaction, social agents cannot exist nor can social structures be reproduced. Giddens' (1984) scholarship on the duality of structure and agency's draws on a sociological tradition that examines how society is reproduced through everyday social practices.

In examining the tension between structure and agency and the reproduction of society, Giddens (1984) draws from Goffman's (1959) book *The Presentation of Self in Everyday Life*, which reveals the complexities through which social interaction is sustained. For instance, Giddens relies on Goffman's term *copresence* to relate the centrality of day-to-day interaction in reproducing society. According to Goffman, copresence is implicated in any social situation wherein two or more people are aware of one another's presence. Within such situations, individuals undertake meaningful work to participate in and sustain social interaction (Goffman, 1959). For Goffman, an individual body can sustain or diverge from relatively well-established, or taken-for-granted, social interaction patterns, revealing the work individuals must perform to successfully operate in society as well as the fragility of social life. Giddens (1984) agrees with Goffman that individuals must monitor and adjust their behaviour in relation to others and that the work undertaken in social encounters is that through which society is reproduced. Thus every social interaction plays an important role in comprising larger social structures that also

influence those interactions (Giddens, 1984). Giddens (1991) advises that everyday social interaction is rooted in the development and sustainability of generalized trust.

Giddens (1984, 1991) relates that individuals develop trust to help manage proceedings in everyday reality, and therefore a process emerges through which society is reproduced. Giddens (1991) reflects on an individual's initial development of trust, which he argues is enveloped in the emergence of an understanding of the 'me' and 'other' established in early childhood, when an infant learns to accept that their parent's presence and absence is temporary. The trust infants develop upon accepting the 'me' and the presence of others becomes generalized over time, and helps us to successfully interact in the social world (Giddens, 1991). Giddens (1984, 1991) refers to the generalization of trust as *ontological security*, meaning that individuals accept themselves as they are as well as accept the world at large. The development of ontological security allows individuals to successfully interact in a multitude of social situations, taking for granted the social backdrop they reproduce (Giddens, 1984, 1991). Ontological security is reminiscent of Goffman's (1959) speculation on the patterns of social interaction, where certain ways of being in the world are seen on a spectrum of normality to abnormality, where normal proceedings are taken for granted, and abnormal proceedings point out the work required to establish the former patterns. The discussion of ontological security reveals the entrenchment of established patterns through ongoing socialization as well as their fragility.

According to Giddens (1991), as individuals reproduce society, the dynamic tension evolves over time. The evolution of society leads him to differentiate between contemporary and traditional societies; Giddens argues that much of the world is currently in a late modern period, characterized by four distinct macrological processes: *industrialization, capitalism, surveillance* and *military combat*. Industrialization refers to the control of the production process through

technological innovations, capitalism to market competition dynamics as well as labour exploitation, surveillance to the general monitoring and coordination of a population's activities, and militarism to the control of means of global violence (Giddens, 1991). In a late modern context, these four processes hold both real and potential worldwide effects (Giddens, 1991). In the former case, each one is comprehensively pervasive throughout the world, influencing interaction and also being reproduced every day (Giddens, 1991). With regard to these processes' potential impact, Giddens argues that their disruption could have global repercussions; he provides examples of nuclear weaponry and the global financial system, which if either deployed or disturbed, their effects would reverberate throughout the world. Late-modernity's pervasive processes can be found in its behemoth institutions, such as transnational corporations, nation-states and the biomedical institution (Giddens, 1991). Giddens notes that these institutions' simultaneously operate at both the global and local levels: global in the sense of their impact throughout the world, and local with regard to their effect on and reproduction through individual lives and actions.

These above-described late modern processes and their accompanying institutions hold enormous implications in part because the world is becoming increasingly connected. Giddens and Pierson (1998) relate that, "distant events and actions have a constant effect on our lives" (p. 98). For example, decisions that are made in The Hague can have direct and almost immediate implications for lives in Montreal, Addis Ababa, and Mumbai. These global interconnections are facilitated by modern communication technology such as the printed text and the electronic signal where knowledge and information can be transferred independent of both time and space (Giddens, 1991). Giddens (1991) argues that these modern communication processes allow individuals' experiences to become increasingly mediated, where individuals are aware of

occurrences in distant places in both time and space that influences one's "self-identity and the basic organization of social relations" (p. 4). Thus individuals and social structures are increasingly interconnected and affected through mediated interactions, pointing to the central role of the media in late modernity.

The development and expansion of communication technologies allow for the relatively easy transfer and growth of knowledge across the world (Giddens, 1991). Giddens (1991) argues that anyone may become a specialist on any topic given the time and the resources. As opposed to traditional societies where only privileged members of society accessed knowledge, a variety of sources can now compete for claims of authority (Giddens, 1991). Paradoxically, despite the availability of knowledge to all, increased specialization creates an interdependent web where individuals rely on and trust in one another to share expertise when making decisions (Giddens, 1991). Importantly, in Durkheimian fashion, Giddens posits that the world is becoming increasingly specialized, and thus an individual can only hold a fraction of the world's knowledge. Nonetheless, modern claims to authority are tentative at best, as even though late modernity is comprised of systems of expertise, knowledge is available to many, instead of a few (Giddens, 1991). Giddens' (1991) also relates that, in late modernity, many aspects of social activity are susceptible to "chronic revision in the light of new information and knowledge" (p. 20). According to Giddens, both institutions and individuals make decisions based on the best knowledge available, but as new information consistently emerges, so too is knowledge updated and social activity revised.

The potential revision to knowledge creates an uncertainty in society uniquely ascribed to late modernity (Giddens, 1991). The uncertainty is somewhat mitigated by systems of expertise who seek to calculate, project and mitigate risk (Giddens, 1991). For instance, through ongoing

research, health professionals seek to assess and project an individual's risk of contracting a particular disease, and thereby prescribe certain behaviours or treatments to mitigate that risk. In such a respect, late modernity can be further described as principally future facing, where decisions are made based on risk calculation and control (Giddens, 1991).[1] Giddens' advises that to acknowledge the presence of risk is to accept that fate does not exist and so society's focus turns to controlling risk and thus one's destiny. Yet, he advises that even risk assessment is uncertain at best as all knowledge is open to the possibility of revision, and thus so too is risk to recalculation (Giddens, 1991). Giddens' provides the example of smoking behaviour that was once prescribed by biomedical professionals to help individuals relax is now advised against, based on revised biomedical understanding of its health risk.

The uncertainty found in late modernity is connected to the concept of *reflexivity* (Giddens, 1984, 1991). Unlike in traditional societies, where a person's life path was generally predetermined, in late modernity, individuals have the opportunity to make many more decisions of whom they want to be in their lifetimes (Giddens, 1991). Formerly rigid divisions between gender, race and class are becoming increasingly permeable (Giddens, 1991). Giddens (1991) provides the example of traditional societies that generally dictated that men should work outside the home while women manage the familial life. In late modernity such traditions are open to revision, where both men and women can choose the context in which they would like to work (Giddens, 1991). Many individuals live in a context of "the openness of social life … the diversity of 'authorities'" (Giddens, 1991, p. 5). The openness to a variety of choices creates uncertainty for individuals in how to live their lives (Giddens, 1991). As mentioned, individuals

[1] To further elaborate on the potential consequences of late modernity, Giddens (1991) argues that as humans intervened in nature some risks were reduced, for instance maternal death during childbirth. With technological innovation, however, new risks are manufactured such as through the development of nuclear weaponry, holding the potential of global repercussions.

therefore rely on systems of expertise to help them make decisions (Giddens, 1991). Giddens (1991) advises, however, that reflexivity refers not only to an individual's self-consciousness in decision-making, but also to a reflection on the workings of society and its according adaptation. As implied above, institutions and expert systems are also reflexive, consistently updating their knowledge and approaches (Giddens, 1991). Giddens' (1991) theory of reflexivity in late modernity therefore reveals a social order that hangs in a precarious balance, revealing both global interdependence and a situated taken-for-grantedness that is constantly negotiated and revised in light of new knowledge and risk recalculation.

Giddens' (1991) perspective on late modernity offers a unique, macrological standpoint through which to examine how media topics are negotiated among social actors. His scholarship can help to examine contests for authority and the importance of risk management and uncertainty mitigation in a late modern context as revealed in media content. Importantly, Giddens (1984) also elaborates that there is a balance between social structures and the agents who produce the content, as will be discussed next in the context of framing.

2.2 The Media's Role in Late Modernity and Health-Related Issues

Giddens (1991) argues that we live in an increasingly interconnected world due to the advancement of communication technology; past and distant events are now globally transmitted almost at once, and are accessible to many instead of the few, thus influencing individual lives as well as social structures and institutions. The media serve an important role in reproducing late modernity's global interconnectedness, because through the printed word and electronic signal members of the media communicate on topics and distribute information across the world (Giddens, 1991). Giddens (1991) is careful to say that the "media do not mirror realities but in some part form them" (p. 27), providing the example of news stories that cover death when most

individuals are not often directly exposed to death. Indeed, media content is something other than the daily lives of individuals, but does help shape those lives. Yet Giddens (1991) also argues that although media stories do not "add up to a single narrative" (p.26), media stories do present "unities of thoughts and consciousness" (p. 26), meaning that media content can reflect how various topics are negotiated in society. Seale (2002) claims that popular media must be understood in order to understand individual experiences, as the former so directly influences how people experience various topics, including health. Seale (2003) refers to Giddens (1991) and states that the "culturally available narratives, stories, [and] scripts" (p. 514) influence the reflexive negotiation of self-identity. Thus, the mass media provide some of the cultural tools that inform an individual's identity over time, and are a critical part of society's reproduction.

The process through which the mass media and individuals connect is a related subject of scholarly concern. Scholars argue the mass media join producers and audiences in three phases: *production, representation* and *reception* (Hall, 1980; Seale, 2003; Weeks, 2009*)*. Production refers to collecting and developing information into a reproducible product that is then distributed (Weeks, 2009). Representation can be defined as the distributed content, which can reflect both aspects of the production process as well as potential audience interpretations (Hall, 1980; Seale, 2003; Weeks, 2009). Reception refers to the myriad of meanings audiences derive from the representation phase, as developed through their individual cognitive processes (Hall, 1980; Seale, 2003; Weeks, 2009). These three phases are best thought of as an evolving spiral, as individuals who receive mass media content are also those who produce mass media, and knowledge and information continue to grow over time (Seale, 2003; Weeks, 2009). Many scholars focus their studies on the influence of the production and representation phases on audience reception.

Through production and representation, the mass media, and print media in particular, are argued to play an important role in shaping individual reception and therefore, understandings on various issues. Several scholars seek to positivistically explore the effects of print media as potentially influencing individual behaviour or increasing awareness of topics (Martin, 1976; Scheufele, 2002; Tichenor, Donahue, & Olien, 1970). For example, Martin (1976) demonstrates that individuals rely on the print media for information, while Tichenor, Donahue, and Olien (1970) show that newspapers influence individuals' awareness of various topics. Such examinations provide empirical evidence of the influential role of the mass media on individuals, and therefore the important role of the media in shaping societal reproduction. In fact, Kline (2003) asserts that decades later "it is essentially taken for granted that the mass media are a source of information for individuals (p. 560). Other scholars seek to specifically examine the mass media's role in health-related issues.

With regard to health-related topics, researchers purport that the mass media hold implications for both public health policy and individual lives. On the former point, many scholars claim the media influence public health policy (Brown et al., 2001; Bryant, 2009; Clarke, 2005; Klaidman, 1991). Klaidman (1991) specifically names governments, corporations, and public interest groups as those who seek to influence the production and representation of health-related issues in the media so as to influence public health policy. Other scholars argue that health-related print media influence individual knowledge, attitudes and/or behaviour (Meissner et al., 1992; Redmond et al., 2010; Stryker, 2003; Wade & Schramm, 1969; Winkler et al., 1986). Such studies reveal the importance of this particular communication process in society. To better understand how the media and social actors participate in the emergence of disease representation in late modernity, another Goffmanian concept, *framing* can be applied.

2.3 Framing

In *Frame Analysis*, Goffman (1974) aims to identify some of the basic social structures that help individuals organize and make sense of the various situations they encounter in their daily interactions. He elaborates that when an individual enters a social situation, they ask themselves "what is it that is going on here" (Goffman, 1974, p. 9, emphasis omitted)? Goffman argues that *framing* is a dynamic process that allows individuals to create categories for various events, thus fitting social situations into recognizable patterns, and then to proceed with day-to-day life. Goffman (1974) contends that a *frame* "allows its user to locate, perceive, identify and label a seemingly infinite number of concrete occurrences defined in its terms" (p. 21). Framing, is therefore, according to Goffman, a process of cognitive organization of potentially innumerable aspects of a social situation. To draw on a popular metaphor, frames can conceptually resemble a picture frame, a frame that includes some aspects of a canvas while excluding other aspects (Dorfman, Wallack, & Woodruff, 2005). Importantly, the individual's ability to discern different frames relates the centrality of the individual as well as larger social structures that influence individual understandings of social situations. For Goffman (1974), undertaking a framing analysis allows a scholar to expose and examine those exact "principles of organization" (p. 10) featured in social situations, meaning the important frameworks in which society and individuals operate. From his initial studies, a rich social scientific field focused on examining media content emerged.

Framing theory is often employed in contemporary communication research. In fact, Weaver (2007) reports that contemporary communication research more often employs framing theory than other closely related concepts of agenda setting or priming. Indeed, many scholars agree that framing theory is contemporarily understood and employed in multiple ways (Borah,

2011; D'Angelo, 2002; Entman, 1993; Scheufele, 1999; Weaver, 2007). Entman (1993) argues that framing theory is a "fractured paradigm" (p. 51) where contemporary studies lack a definitive statement of the theory that unifies the research performed under its umbrella. D'Angelo (2002) counters, however, that framing theory is best conceptualized as a research program, inclusive of three social scientific paradigms, namely the *cognitive*, *critical* and *constructivist* perspectives (see also Reese, 2007). The cognitive paradigm examines the psychological processes through which individuals learn meanings, or more specifically examines how frames and an individual's prior knowledge interact (D'Angelo, 2002; Reese, 2007). The critical paradigm examines power relations at the macrological level, where frames are seen as "controlling, hegemonic, and tied to larger elite structures" (Reese, 2007, p. 149; see also D'Angelo, 2002). The constructivist paradigm draws on symbolic interactionism, wherein scholars purport that "human behaviour results from how people interact and … use symbols to create meaning" (Hallahan, 1999, p. 206; see also D'Angelo, 2002; Reese, 2007). Reese (2007) elaborates that the constructivist perspective generally regards frames as "benign resources" (p. 149) where framing is a cultural tool individuals employ when forming opinions (see also D'Angelo, 2002, Gamson & Modigliani, 1989). Reese (2007) and D'Angelo (2002) advise that an awareness of these perspectives allows for a more comprehensive understanding of framing processes, and thus allows for more fluid examinations of how society creates meaning.

With regard to framing found in the media, Ytreberg (2002) elucidates that the media provide examples of the everyday life that Goffman sought to explore, therefore offering accounts of social interaction. Ytreberg (2002) notes that the concept of *scripting* in media texts, however, introduces the idea of "comprehensive and institutionalized planning" (p. 488). The organized, planned frames present in media content are thus arguably different from those that

are present in day-to-day interactions (Giddens, 1991; Ytreberg, 2002). Recent scholarship often distinguishes between *frames in thought* and *frames in communication*. While "both are concerned with variations in emphasis and salience" (Druckman, 2001, p. 228) around a topic, the former refers to an individual's cognitive processes around understanding and making decisions on an issue, while the latter reflects how media content is shaped and presented (see also Berinsky & Kinder, 2006; Borah, 2011; Brewer, 2003; Chong & Druckman, 2007; Dorfman et al., 2005; Scheufele, 1999). Such distinctions between social scientific approaches to understanding framing and frames highlight the theory's evolution beyond Goffman's concept.

With regard to the production of media content, in the critical perspective of framing theory, several scholars argue that frames in communication play an important role for the elite who compete with one another to shape various issues (Berinsky & Kinder, 2006; Chong & Druckman, 2007; Edelman, 1993; Entman, 1993; Valenzano, III, 2009). Entman (1993) describes the elites as politicians, while Berinsky and Kinder (2006) broaden the group to include "Presidents, members of Congress, activists, policy analysts, candidates, and officials", (p. 641). Indeed, these scholars seek to demonstrate how the political elite manipulate frames in communication that then create conditions of hegemony and inequalities, thus skewing the perspectives through which topics are understood for political gain. Entman (1993) offers a contemporary interpretation that "to frame is to *select some aspects of perceived reality and make them more salient in the communicating text* (p. 52).[2] He theorizes that through enhancing the salience of particular aspects of an issue, the probability that receivers will perceive the information, discern meanings and thus process, internalize and store those aspects, is increased.

---

[2] Through his systematic review, Matthes (2009) found that Entman's (1993) definition of framing, as a process of selection and salience, is the most commonly employed definition in current studies that operate within the theoretical framework.

Thus, in his view, elites are motivated to influence the selection and salience of particular aspects of a topic as represented in the media (Entman, 1993). Edelman (1993) furthers that generally, "because alternative categorizations win support for specific political beliefs and policies, classification schemes are central to political maneuver" (p. 232). In such a perspective, elite social actors seek out media coverage and then manipulate particular portrayals of a topic.

Many scholars note, however, that the production of frames in communication is not entirely limited to elite members. Chong and Druckman (2007) hypothesize that elites choose frames that will resonate with the preferences of the audiences, and thus the latter can influence which frames are portrayed in the media. Gamson (1985) also provides the example of leaders of social movements who aim to frame their causes in particular ways, to emphasize certain features and therefore "to create and maintain a supportive climate for their efforts to mobilize their constituency" (p. 608). Most importantly, as mentioned earlier, Seale (2003) advises that the producers are themselves members of audiences (see also Hall, 1980). In fact, the cyclical process of media production, representation and reception reveal a fictitious polarized divide between the producers and receivers of media content. The shaping of frames in communication results from the deliberations of audience-conscious social elites as well as a variety of social actors who are reflexively reproducing society. Although certain aspects of a topic are indeed enhanced and made more salient as Entman (1993) argues, the framing process is not limited to the elite members of society, but is rather reflective of a dynamic process of negotiation.

From the constructivist perspective, Gamson and Modigliani (1989) advise that three factors influence the production and representation of particular media frames: *cultural resonances, sponsor activities*, and *media practices* (see also Borah, 2011; Druckman, 2001; Gamson, 1989). Cultural resonances refers to the larger cultural themes found in a society, where

some frames more strongly resonate with cultural values than others (Gamson & Modigliani, 1989; see Snow & Benford, 1988). Sponsor activities refer to the influence of various social actors on news content, who are interested in promoting specific understandings of a topic (Gamson & Modigliani, 1989). Media practices refer to the journalistic norms and practices that lead to the production of media content (Gamson & Modigliani, 1989). Interestingly, Gamson and Modigliani (1989) claim that journalists generally give preference to official frames presented by established authorities. Gamson (1989) furthers that "frame analysis offers a way of specifying the relationships by focusing on the relative prominence of competing frames as a measure of outcome" (p.160). Therefore, it is possible that one frame is given preference and can come to dominate a news discourse, and examining the predominance of a particular frame can point to the dynamics of social interaction from which the dominant media frames emerge. As such, the dominance of particular frames within texts can point to a progression over time where particular frames that dominate the media's representation are reflective of a taken-for-granted perspective of social interaction.

With regard to other considerations of how issues are represented, critical scholar Bennett (2007) presents four journalistic practices typical of media production: the media tends to present *personal, melodramatic, noncontroversial*, and *fragmented* stories. Stories that focus on the personal ignore the "the big social, economic or political picture" (p. 40). Melodramatic stories emphasize crises and the present situation instead of describing and situating the stories within the past and future (Bennett, 2007). Noncontroversial stories privilege the return to order through authoritative channels when crises occur, while fragmented stories tend to isolate stories from one another (Bennett, 2007). Thus, this critical perspective provides arguments that frames that

incorporate these criteria may be given preference in media content, adding additional considerations to the constructivist perspective of how certain frames dominate media content.

Several scholars seek to explore how frames in communication influence frames in thought, thus on audience reception. As such, these researchers empirically examine an audience's cognitive responses, namely thoughts, attitudes and behaviours, when they receive particular communication frames (Berinsky & Kinder, 2006; Chong & Druckman, 2007, Kahneman & Tversky, 1987; Shen, 2004; Valkenburg, Semetko, & De Vreese, 1999). A landmark study by Kahneman and Tversky (1987) found that framing problems in particular ways influences an individual's decision-making. In their study of media representations, Iyengar and Simon (1993) sought to analyse the balance between *episodic news*, the tendency to portray individuals in a present situation, as compared to *thematic news*, news that explores the larger sociohistorical landscape around a topic. Their research demonstrated that the news is most often episodically portrayed, and that when audiences are exposed to this type of presentation, they are more likely to hold those individuals accountable for the problems presented. Other scholars criticise, however, that these types of experiments do not accurately reflect reality because individuals are typically exposed to numerous competing frames rather than only one frame (Berinksy & Kinder, 2006; Chong & Druckman, 2007). Chong and Druckman (2007) further assert that the individual agent potentially acts as a mediator to a frame's effects, where one's values and prior knowledge can mediate the response to a particular frame in communication (see also Borah, 2011; Hall, 1980). Some scholars also claim that framing effects can be moderated, for example, by whether the frame is delivered by a credible source, connected to cultural values, and if individuals are able to deliberate on a topic (Chong & Druckman, 2007; Druckman, 2001). Gamson (1985) gives further credit to the audience by

stating “our political world is framed, … reported events are preorganized and do not come to us in raw form. But we are active processors and however encoded our reality is, we may decode it in different ways. The vulnerability of the framing process makes it a locus of potential struggle” (p. 615). Thus, individuals are not blank receivers and may potentially assert their own interpretations of topics. The need to create experimental conditions that more closely mimic reality, an individual’s ability to mediate frames in communication, and the complexities of moderated framing effects call into question the supposed effects of frames in communication on frames in thought. Indeed, Scheufele (1999) presents framing effects as a feedback loop, wherein both frames in communication and frames in thought influence one another. In this way, Scheufele’s (1999) model reflects Seale (2003) and Weeks’ (2009) description of the mass media communication process, where each concept cyclically influences the others. The exact mechanisms through which media content influences an individual’s cognition has yet to be entirely explored or properly described, yet researchers can likely agree that the process is neither unidirectional nor total in its influence.

Ultimately, as Giddens’ (1984) and Goffman’s (1959) relate, there is a balance between structure and agency in social interaction, and as Giddens’ (1991) and Seale (2003) relate, media content is a part of a broader process of reflexive negotiation in late modernity. Goffman’s (1974) concept of framing provides an additional layer of understanding that certain principles organize social situations and that individuals select and highlight certain elements to make sense of them. D’Angelo’s (2002) description of the contemporary research program contends that the theory of framing evolved to incorporate three research paradigms, which has broadened understandings of the relationships between audiences and producers. In the context of reflexive negotiation, audience members are also the producers of content, and the framing processes

found in media content can point to the particular social dynamics of late modernity. Thus, Goffman's (1974) initial theory of framing and subsequent contemporary scholarship provide an important lens through which to examine variations in salience and emphasis that are found in particular frames, to understand whether and how certain frames have come to dominate media content over time, and to elucidate their implications. Employing framing theory can thus help to reveal the particular processes of reflexive negotiation among social actors in late modernity.

2.4 Disease Framing

To better understand the media's representation of disease-related topics, one must first consider how the issue is conceptualized in modern social theory. Boyd (2000) elucidates that *disease*, *illness* and *sickness* can be understood as differing concepts. Disease can be related to a biomedical definition, wherein a pathological presence in the body is determined and diagnosed (Boyd, 2000). Illness, however, can be viewed to represent the patient's own experience with a pathology, while sickness can refer to "the role negotiated in society" (Boyd, 2000, p. 10). Carel (2008) also elaborates on the distinctions, where there are important differences between the lived experience of the disease and the biomedical institution's objectification of the body. Thus, many scholars point out these diverging understandings of disease, and to the important role of the biomedical institution. According to Rosenberg (1992), "even a dangerous, but familiar and understandable, disease can be emotionally more manageable than a mysterious and unpredictable affliction" (p. xvii). Indeed, Sontag (1978) argues that the less a disease is understood, the more likely it is to be manipulated. In many cases, a biomedical diagnosis can facilitate the manageability of illness and sickness. Gwyn (2002) provides the example of a biomedical diagnosis supplying relief to parents whose child behaves uncontrollably but is subsequently diagnosed and treated for attention-deficit hyperactive disorder. The umbrella of

diagnosis, treatment and prognosis of a disease can therefore provide an impermeable layer that protects a patient and those connected to them. In other ways, however, a diagnosis can constrain and be a detriment to social actors. Connor-Greene (2006) provides the example of particular mental disorders observed in African slaves, where those slaves who had too much freedom were observed developing consequential physical diseases. Thus, the biomedical community's authority to name, dissect and treat a disease carries important connotations.

Several critical scholars attempt to understand the biomedical institution's role in society. Zola (1972) argues that the biomedical institution's predominance indicates a particular type of hegemony in which institutions collude to assert biomedical control. Some researchers echo that medicine's dominance reflects the interests of particular social actors, such as healthcare providers and pharmaceutical companies (Clarke & Everest, 2006; Lakoff, 2005; Thöer, 2009). Gwyn (2002) argues that medicine redirects society's resources toward the discovery of new pathologies and the development of new technologies while neglecting other aspects of health. The biomedical institution's role, however, can also reflect some of the conditions of late modernity. Rosenberg (1992) points out that, "Today, knowledge is increasingly specialized and segregated, and laypersons are more likely to accept medical judgments on faith" (p. xviii). In a late modern context, as the world grows increasingly specialized and reflexively seeks to control risk, individuals are arguably more likely to look to the biomedical profession to impart their expert knowledge on health-related topics (Zola, 1972; see also Giddens, 1991; Rosenberg, 1992). Furthermore, Zola (1972) argues that medicine is involved in the general surveillance of society, as practitioners report on an individual's health status. Thus, biomedicine's predominance is reflective of late modern social structures. Understanding the nuances of the

biomedical institution's importance in society is imperative to the discussion of the framing of disease-related topics in the media.

Social scientific research on the media's framing of disease has uncovered a number of general frames that can be applied to multiple sub-topics, namely the *Behavioural/Lifestyle, Biomedical, Socioenvironmental*, and *Structural/Critical* frames. The Behavioural/Lifestyle frame, sometimes labeled the *Individual responsibility* frame, can be described as where issues are framed as individual challenges, accentuating the individual's responsibility rather than societal contributions to the emergence of particular health concerns and diseases (Bryant, 2009[3]; Clarke, 2005; Clarke & Everest 2006; Hust, Van de Vord, & Chen, 2006; Kwan, 2009; Lawrence, 2004). The Biomedical frame focuses on health issues described in scientific categories as related to individual risk factors, diagnoses and disease treatment (Bryant, 2009; Clarke 2005; Clarke & Everest, 2006; Kwan, 2009). The Socioenvironmental frame focuses on the societal and environmental determinants of risk such as poverty, pollution, and social isolation as opposed to emphasizing individual risk factors (Bryant, 2009; see also Clarke & van Amerom, 2008; Kwan, 2009; Lawrence, 2004). Finally, the Structural/Critical frame is concerned with how society "organizes and distributes social and economic resources within a population" (Bryant, 2009, pp. 35-36; see also Clarke & van Amerom, 2008; Kwan, 2009; Lawrence, 2004). Notably, in their conception, Clarke and van Amerom (2008), Kwan (2009) and Lawrence (2008) merge the Socioenvironmental and Structural/Critical frames, and yet Bryant (2009) makes an important distinction between the two, saying that the former will not explicitly "direct attention to the influence of the larger economic, political, and social forces that

[3] Although Bryant (2009) refers to the mentioned frames as *paradigms* for understanding health, they are nonetheless parallel to frames and thus transferable to this understanding of disease representation in the media.

shape the local environments" (p. 35). Thus, the former frame is concerned with societal and environmental causes of disease, and the latter takes a critical turn, particularly towards public policy change. These four frames reflect some of the potential dynamics to be found in discussions of disease-related topics in the media.

In media studies, several researchers argue that the Biomedical frame is the predominant frame through which disease-related topics are portrayed (Bryant 2009; Clarke, 2004; Clarke & van Amerom, 2008; Clarke & Binns, 2006; Clarke & Everest, 2006). Importantly, the frame tends to conflate disease management with individual responsibility, as the former is concerned with diagnosis, treatment and recovery in individual bodies (Clarke & Binns, 2006; Kolker, 2004; Kwan, 2009; see also Zola, 1972). Many researchers further argue that the media tend to emphasize individual responsibilities as opposed to the socioenvironmental causes of and responsibilities toward disease, on topics such as heart disease, mental illness and criminality, obesity, and women's health (Clarke & Binns, 2006; Clarke & van Amerom, 2008; Kolker, 2004; Olstead, 2002, Roy, 2008). Issues such as tobacco-control are also reflected in an individual responsibility frame (Dorfman et al., 2005; Siu, 2009). Such findings are perhaps reflective of the earlier discussion on the media's presentation of issues as singular events related to individuals, thus obscuring the larger social, economic and political discussions on disease-related topics (Bennett, 2007). In addition, these findings point toward the establishment of these frames as the normal way to discuss disease. Interestingly, Kim and Willis (2007) and Lawrence (2004) recently found a trend toward a greater balance between presenting individual and societal attributions to obesity in the US media, thus pointing to how topics are continually negotiated. These findings must be confirmed in future studies as well as in other topics, although the results may indicate a shift in types of news coverage. In general, all of these

findings contribute to a better understanding of the frames found in media content related to disease, and point to the continued negotiation of its representation over time.

2.5 Cancer Framing

As discussed in the Introduction, cancer can be understood as an umbrella term for multiple manifestations of a complex disease. Even so, cancer as an inclusive entity carries many distinct connotations in the media, and thus many social scientific studies examine cancer's representation (Clarke & Everest, 2006; Clarke & van Amerom, 2008; Musso & Wakefield, 2009; Stryker, Emmons, & Viswanath; 2006). Some scholars posit that cancer is generally portrayed as a disease to be feared (Clarke, 2005; Clarke & Everest, 2006), highlighting Sontag (1978) and Rosenberg's (1992) claims of its unfamiliarity and mysteriousness. Clarke and Everest (2006) elaborate that cancer and fear are connected through the description of the former as silently growing in the human body, as an inevitability, as well as because of its increasing incidence rate. Importantly, a few authors argue that the Biomedical frame is a taken-for-granted backdrop against which cancer is discussed, in which the fear of cancer can be controlled through biomedical action (Clarke, 2005; Clarke & Everest, 2006; Clarke & van Amerom, 2008). Thus, this frame has arguably become the dominant, natural setting in which cancer is portrayed. Furthermore, a few studies demonstrate that augmented attention is given to cancer treatments as compared to prevention (Lewison, Tootell, Roe, & Sullivan, 2008; MacKenzie, Chapman, Johnson, McGeechan, & Holding, 2008; Slater, Long, Bettinghaus, & Reiheke, 2008; Stryker et al., 2006). In this regard, biomedical treatment is viewed as a way to manage cancer, thus assuaging fear. When discussed, cancer prevention is often portrayed as an individual responsibility, while socioenvironmental contributions to cancer are minimized (Clarke, 2005; Clarke & Everest, 2006; Musso & Wakefield, 2009). In their study of the Canadian print media

portrayal of cancer prevention, Musso and Wakefield (2009) found that behavioural/lifestyle factors such as diet/nutrition and smoking are predominantly cited as main cancer prevention methods. The predominance of the Biomedical and Behavioural/Lifestyle frames in the media's representation of cancer reflects the previously discussed findings on media framing, the role of the biomedical institution to control risk, and the media's framing of disease.

Other scholarly literature on the media's portrayal of cancer has shifted from examining cancer as a general concept, to examining one type or a few types of cancer, particularly breast or prostate cancer (Clarke, 1999a, 1999b; Clarke, 2004; Donelle et al., 2005; Halpin et al. 2009; Kedrowski & Sarow, 2007; Kolker, 2004). For instance, Clarke (2004) compared the portrayals of breast, testicular and prostate cancers in North American magazines. Her findings were that breast cancer is portrayed as a feminine disease while testicular and prostate cancers are portrayed as masculine diseases. She argues that "conflation of gender and disease directs attention away from other more serious causes of death for both women and men" (p. 549) and provides the example of heart disease as having a greater mortality rate in North America. The concept of directing attention to and away from one topic compared to another leads to a subsequent discussion of the media's wide cleavage in coverage of specific types of cancer.

Many studies demonstrate that cancers defined by disease-site are either under or overrepresented in the media as compared to their mortality rates. For instance, several scholars found that lung cancer is underrepresented while breast cancer is overrepresented in the Australian, British, Canadian and United States' (US) media (Hoffman-Goetz & Friedman, 2005; Hoffman-Goetz & MacDonald, 1999; Lewison et al., 2008; Jensen, Moriarty, Hurley, & Stryker,

2010; MacKenzie, Chapman, et al., 2008; Musso & Wakefield, 2009; Slater et al., 2008).[4] Kolker (2004) argues that breast cancer advocates in the US successfully developed support for their cause through employing culturally resonant frames of breast cancer as a biomedical epidemic, gender equity for women, and the harmful threat of breast cancer to families. This analysis thus complements Gamson and Modigliani's (1989) argument that media coverage is in part determined by sponsor activities and the creation and implementation of culturally resonant frames. Jensen, Moriaty, Hurley and Stryker (2008) further argue that some cancers, such as breast cancer receive more coverage because the stories fit within Bennett's (2007) journalistic norms of presenting accounts that focus on the individual and on the biomedical institution's authority. Lewison, Tootell, Roe and Sullivan (2008) advise that such overexposure holds important societal consequences, where women are likely to overestimate their risk of developing breast cancer as a result of the "resetting of the cultural milieu" (p. 574) due in part to increased media coverage. Stryker, Emmons and Viswanath (2006) further that disproportionate attention given to particular cancer types draws attention away from other types of cancer, due to limited news space. A lack of attention to some cancers could therefore have negative societal repercussions. Understanding the framing of cancer as well as the framing of specific cancer types that receive more media attention, leads to a complementary research inquiry of how an underrepresented cancer, such as lung cancer, is framed, if at all.

2.6 Lung Cancer Framing

Goffman (1963) defines *stigma* in terms of a person "possessing an attribute that makes him different from others in the category of persons available for him to be, and of a less

[4] In parallel, Stryker, Emmons, and Viswanath (2006) point out that much scholarly research focuses on examining the representation of and discourse around breast cancer, while other types of cancer receive little attention.

desirable kind" (p. 3). Thus, individuals are perceived by others to have somehow failed in achieving the "ordinary and natural" (Goffman, 1963, p. 2). Lung cancer is argued to be a biomedical diagnosis that results in "stacked stigma", where patients are faced with social stigma as a result of the relationship between lung cancer and cigarette smoking, poor prognosis and a lack of advocacy (Conlon, Gilbert, Jones, & Aldredge, 2010, p. 98). Indeed, across international media, lung cancer is underrepresented compared to its mortality rate, pointing to the stigma associated with the disease. Hoffman-Goetz and MacDonald (1999) in fact advise that coverage of lung cancer in Canadian women's magazines decreased between 1991 and 1997. MacKenzie, Chapman and Holding (2010) speculate that the Australian media's neglect may be a result of the link between lung cancer and smoking, where lung cancer is seen as a "self-inflicted disease" (p. 66), which they argue has roots in tobacco industry advertising where smoking and tobacco use are portrayed as an individual choice. Lawrence (2004) confirms that lung cancer is primarily attributed to the consequence of individual behaviour and Wakefield, McLeod and Smith (2003) show that when tobacco control is portrayed in a negative light, a smoker is most often portrayed as one "who actively chooses to start and continue smoking" (p. 299), thus making them responsible for health-related consequences. The self-infliction of lung cancer then potentially leads to diminished public sympathy and thus to a lack of media attention (MacKenzie, Chapman, & Holding, 2010). Interestingly, MacKenzie, Johnson, Chapman and Holding (2009) found that the Australian news media, however, overly conflate tobacco and lung cancer, as compared to its actual causation of the disease as well as other types of disease such as emphysema and other types of cancer. The fusion of lung cancer with smoking behaviour therefore potentially holds important implications for its coverage in the media.

An important distinction has been made between lung cancer diagnoses that result from smoking as compared to other causes and its coverage in the media. Indeed, about 85% of lung cancer cases can be attributed directly to smoking (Health Canada, 2009), but lung cancer occurs in those who are former smokers, have been exposed to second-hand smoke, or as a result of environmental exposures such as radon and asbestos (The Lung Association, 2010). MacKenzie et al. (2010) noted that over two-thirds of statements on lung cancer referred to smoking status, thus distinguishing between those caused by smoking and those by other sources. The authors noted that discussions of lung cancer attributed to smoking portray these individuals as responsible for their disease, while those that explore lung cancer in non-smokers sympathetically portray the individuals. MacKenzie et al. (2010) subsequently found that television news focuses predominantly on non-smokers who develop lung cancer. The division between smokers and non-smokers perhaps contributes, as the authors argue, to a further lack of sympathy toward this subpopulation of patients.[5]

MacKenzie et al. (2010) found that their corpus of articles on lung cancer primarily discussed disease incidence, followed by celebrity diagnoses and treatment. In tandem, Hust, Van de Vord and Chen (2006) reported that focusing on incidence equates this type of cancer with death and also reported a slight increase in the coverage of lung cancer in the United States' (US) print media following Peter Jennings' death in 2005. In line with Bennett's (2007) argument, celebrity cancer diagnoses lend well to the media's practice of personalizing news stories, and Clarke and van Amerom (2008) found that the discussion of celebrities tends to

---

[5] Conlon, Gilbert, Jones, & Aldredge (2010) found that a divide also exists within the lung cancer community between smoking-related and non-smoking related lung cancers, where non-smokers who develop lung cancer are quick to announce their non-smoking history. In one report, a social worker recalled a never-smoking patient entering a support group and stated, "She believed that she did not deserve to have lung cancer but the others in the room did deserve it" (p. 103). In the same study, another social worker related that the divide between the smokers and non-smokers has done "a disservice to the world of lung cancer" (p. 101).

support the individual responsibility perspective. Indeed, Hust et al. (2006) advised that the increased coverage related to celebrity diagnoses missed an opportunity to educate the public about lung cancer. Furthermore, MacKenzie et al. (2010) advised that the articles on Linda Reeves' mention that she was a non-smoker, thus contributing to the divide in the discourse on lung cancer between those found in smokers versus non-smokers. More attention should be given to the predominance of these themes and how they are framed, to understand which elements are emphasized and made more salient, and to elucidate the implications for contemporary society.

To date, only MacKenzie et al.'s (2010) study examined lung cancer's representation in the media within the context of contemporary framing theory, with regard to the framing of responsibility among smokers and non-smokers in the Australian media. The study did not, however, examine the presence of the Biomedical, Socioenvironmental and Structural/Critical frames or analyse the implications of the presence or lack of presence of these frames within the context of late modernity. Thus, the imperative becomes to employ framing theory to study how the representation of lung cancer in the media emerges and who is represented. Such an undertaking can allow for a broader understanding of the social dynamics behind the disease's negotiation in the context of reflexivity in late modernity.

2.7 Conceptual Framework and Research Rationale

Giddens' (1984, 1991) theories provide a macroscopic lens through which to examine the dynamics behind the representations found in media content. For instance, his view on the duality between agency and structure allows for an analytic perspective that incorporates an understanding of individual determinacy in, as well as the constraints that social structures can impose on one another (Giddens, 1984). Furthermore, Giddens' (1991) perspective on reflexivity in late modernity allows for an understanding of the particular context within which institutions

and social actors negotiate their claims to authority as revealed in media content. Finally, Giddens (1991) argues that individuals live in an increasingly mediated world and therefore to understand media content is in fact a way to better understand how individual experiences are in part shaped. Research conducted within this context could potentially lead to a better understanding of the emergence of particular media representations and its implications for contemporary society.

Contemporary framing theory applied to media content through a framing analysis is a popular method employed by social scientific researchers to make sense of media texts. Through examining the predominance of certain frames and actors, imbalances in particular representations thus can be studied. Employing a framing analysis within Giddens' (1991) perspective of reflexivity in late modernity allows for an understanding of the conditions of late modernity and dynamics of interaction that lead to the emergence of particular frames, such as the importance and managing uncertainty and risk. Overall, employing this theoretical framework can thus lead to a broad criticism of society through examining media content.

A legacy of empirical research demonstrates that mass media hold an important place in society, influencing public policy as well as an individual's knowledge, attitudes and behaviour and shaping their experiences. The literature provides evidence that the print media play an important role in presenting particular understandings of health-related topics. It is therefore important to study media content related to lung cancer because of the substantive societal and individual implications. Studies have shown lung cancer to be underreported in the media, but little is understood on the Canadian print media's actual portrayal of the disease. Given the disease's breadth in Canadian society, however, social scientific researchers should have a better understanding of how the topic is represented. Examining and better understanding the

representation of lung cancer can thus not only reflect on the social dynamics of late modernity, but also potentially shape public policy and individual experiences.

In 2003, Kline called for research that "continues the project of identifying the manner in which discourse impinges on the meaning and behaviours related to health and illness" (p. 575). Furthermore, Jensen et al. (2008) argue that, "identifying ways to package prevention, detection, and coping stories in ways that satisfy journalists and audiences might help to reduce imbalanced reporting of the cancer continuum" (p. 21). To achieve a more balanced reporting of lung cancer vis-à-vis other cancers, as well as to balance the reporting of lung cancer itself, one must first begin with the scholarly project of how the topic is portrayed. Examining Canadian print media content on lung cancer, revealing the frames employed and their relative prominence, as well as the implicated social actors within a late modern context can contribute to the aforementioned projects and relate the implications for individuals and society.

The next chapter presents an overview of the research method employed in this initiative.

Chapter Three: Methodology

In exploring the Canadian print media's representation of lung cancer, the research aims to complement and build on previous studies that examine the portrayal of disease in a variety of media. Examining and better understanding lung cancer's portrayal in the Canadian print media can thus potentially help to support or refute previous research, extend the theories employed, ascertain avenues for future research, as well as determine implications for individuals as well as public health policy (Frey, Botan, & Kreps, 2007a). To better comprehend the topic's representation I conducted a content analysis of a selection of the Canadian print media. The following chapter explores some general considerations tied to the methodology and outlines the particular aspects of the approach employed in my research.

3.1 Research Objectives and Questions

The primary research aim was to explore the representation of lung cancer in the Canadian print media. As mentioned in the introduction, there were four objectives that were designed to contribute to this undertaking. Thus, particular variables were considered to help uncover the representation and each of these aspects of coverage outlined below contributes to an overall understanding of the portrayal of lung cancer in the media. Three particular research questions were asked to help uncover the general trends in the representation of the disease. To uncover a quantitative, longitudinal view of the disease, the first research question was:

1) Has the coverage of lung cancer changed in terms of article frequency, word length and emphasis? If so, how?

For a qualitative, longitudinal understanding of the disease, the second research question was:

2) What are the themes, tones and frames of articles published on lung cancer and who are the social actors represented in lung cancer stories? Have these variables changed over time?

To understand a special issue connected with the representation of lung cancer, the third research question was:

3) Is the smoking status of the patient mentioned? How has this variable changed over time?

Each of these three research questions sought to address the first three objectives mentioned in the Introduction. To address the fourth objective, a particular framing analysis was undertaken as a way to move beyond description to better understand the social dynamics of negotiation around the disease's representation in late modernity.

3.2 Content Analysis Methodology

Content analysis is an important method for scholarly research whose application dates back centuries. Dovring (1954-1955) relates that content analysis' history can be traced to the 1700s, where scholars examined the use of religious symbols in church hymns. From there, content analyses evolved to include the examination of mass communication media such as newspapers, radio and presidential addresses (Frey, Botan & Kreps, 2007b; Krippendorf, 2009). Importantly, the methodology's development is rooted in a quantitative understanding, where researchers focused on the counting of items in texts to explain social scientific phenomena. Indeed, many content analysis methodologists, such as Berelson (1952), Holsti (1969), and Neuendorf (2002) purport the method to be a fundamentally quantitative approach in which data are objectively and systematically collected, coded, and described in terms of frequency and emerging trends over time. Content analysis has, however, been argued to hold the potential for combining qualitative and quantitative components (Altheide, 1998; Berg, 2007b; Jackson, 2003; Krippendorf, 2009; van Dijk, 1985). Indeed, Jackson (2003) argues that in the fundamental design of content analyses, researchers choose to categorize various aspects of texts, therefore making qualitative choices "as to what categories are relevant" (p. 205). In professing the

qualitative potential of content analysis, Berg (2007b) describes the method as "a careful, detailed, systematic examination and interpretation of a particular body of material in an effort to identify patterns, themes, biases and meanings (pp. 247-248; see also Neuendorf, 2002). Berg's definition of content analysis implies the possibility for a harmonious approach between identifying numerical patterns that allow a researcher to determine and describe similarities and differences in coverage over time, as well as qualitatively interpret and critically analyse in-depth themes and meanings present in the text under study. Indeed, a quantitative analysis can help make sense of and categorize a large amount of data, while a qualitative analysis can possibly uncover deeper meanings of the texts at hand within a social theoretical context (Fairclough, 2003). Ultimately, the combination of quantitative and qualitative elements in a content analysis allows for the development of a more comprehensive picture of the topic under study. The approach employed in my research embraces both these aspects through the use of numerical counting for the quantitative analysis, thus considering frequencies, averages, and changes over time. I subsequently undertook a qualitative descriptive and interpretative analysis of the trends that emerged from the numerical counting.

In contemporary research, content analysis is a popular technique employed by communication researchers to explore a variety of texts (Frey et al., 2007b), particularly with regard to health-related topics (Kline, 2006). In selecting content analysis as my research approach, I considered several advantages of the method. For one, the strategy provides readily available and inexpensive access to a wealth of data, thereby easily facilitating a limited-resources research endeavour (Berg, 2007a; Berger, 1998; Frey et al., 2007b). Furthermore, unlike other approaches that are based on direct interaction with the subjects of study, an unobtrusive method like content analysis allows researchers to avoid influencing their subjects

and thus potentially tainting findings (Berger, 1998; Bryman, 2008; Frey et al., 2007b). Berger (1998), Bryman (2008) and Frey, Botan and Kreps (2007b) also advise that content analysis allows researchers to work with recent and historical material, thus one is able to study "phenomena as they develop" (Berger, 1998, p. 26), as well as compare those phenomena to past occurrences. Content analysis' easy and inexpensive data accessibility, unobtrusiveness, and potential for a longitudinal yet current analysis make it an appealing approach to study the representation of lung cancer in the media.

There are a few important considerations on which to reflect prior to undertaking a content analysis. Berger (1998) advises that content analysts often face difficulty in determining appropriate sampling. In the case of my study, the examination of content from two national newspapers from 2001-2010 helps to ensure that cross-Canadian interests are represented as well as account for changes over time. Examining the most recent Canadian content allows for the emergence of results and discussions that could potentially have immediate personal and political implications. Berger (1998) also advises that content analysts should be careful to ensure that their findings are consistent with what the producers of the content intended. Indeed, just as Pan and Kosicki (1993) advise that the producers of news use particular signifying elements to communicate their intended meaning, so too should researchers take caution to ensure that the intended meaning of the text is preserved when coding and analyzing articles. Interpretation is unavoidable for content coding and analysis, and is in fact arguably desired (Altheide, 1998), and yet Hirsch (1967) reminds researchers that the purpose of textual analysis is to determine the intended meaning of the text. Hall (1980) refers to this concept as examining the text's preferred reading. Thus the necessity is to stay as close to the intended meanings of the texts as possible. Furthermore, Hall (1980) advises that audience members may each have different interpretation

of texts. Indeed, as mentioned, many communication scholars have come to understand that media consumers are capable of evaluating and appraising texts, and thus as Berger (1998) relates, "we must be careful not to assume too much when we analyze our findings" (p. 28). Bryman (2008), Krippendorf (2009), and Riffe, Lacy and Fico (1998) note that a content analysis alone is incapable of determining cause and effect, and researchers may thus only infer the potential antecedents and possible impacts of media content. Therefore it is essential to situate this study's findings with the context of production, reproduction and reception, of which the middle part of the cycle is examined. Riffe et al. (1998) ultimately note, "in the long run, one cannot study mass communication without studying content" (p.32). In other words, examining media content is an important part of the larger research program that seeks to study communication patterns and processes.

Two important considerations for any research undertaking are ensuring *reliability* and *validity*. Reliability refers to the consistency and repeatability of the results, while validity refers to the generalizability of the results (Merrigan & Huston, 2009; Wimmer & Dominick, 2006) and the research was conducted with these principles acting as guidelines. The reliability of the results is demonstrated through the meticulous study design that is outlined next, the development of the coding guide and list of operations, by the several months I spent reading, coding, rereading and recoding the data, and the numerous consultations with my supervisor and colleagues on the topic. The coded data are carefully documented and the original data are readily available should any other researcher like to reexamine them. The results are also valid based on the study's design that builds upon previous work, using a well-defined methodological framework with transferable concepts and operations, and the subsequent examination and comparison to previous studies on topics of cancer and disease representations in the media.

Furthermore, after a filtering procedure was employed, all remaining articles were coded which accounts for sample representativeness (Merrigan & Huston, 2009). In terms of personal biases, according to Platt (2010), being conscious of them allows a researcher to stay truer to the articles. As a former smoker and someone whose close relative died of lung cancer, I was conscious of these biases as I undertook my work, and aimed to stay true to the content and their intended meanings as outlined above. Finally, as mentioned, the content analysis aimed to be thorough in consideration of the dominance of certain trends as well as those that are not dominant, and thus there is an attempt to analyse and account for as many aspects of the disease's representation as possible.

With regard to some general qualities of the research undertaken, I aimed to employ a macroscopic approach by examining the representation of lung cancer as potentially influenced by larger societal processes within the context of late modernity and framing, and exploring the resulting implications for public health policy as well as individuals (McLeod & Tichenor, 2007; Neuman, 2007). Furthermore, I sought to marry a deductive, quantitative approach with inductive, qualitative criticism, through employing pre-defined category coding but allowing for new categories to emerge, and then more closely examining and interpreting specific data (McLeod & Tichenor, 2007). Finally, the analysis and discussion presented in the subsequent chapters is primarily descriptive and interpretative in nature, seeking to present frequency trends and changes over time, as well as extract and illustrate archetypical examples of lung cancer's representation in the Canadian print media within the context of framing theory and late modernity (Nardi, 2007). The subsequent description of the methodological strategies further outlines the research undertaken.

3.3 Method

3.3.1 Sample.

The analysis was based on a retrieval of stories from *The Globe and Mail* and the *National Post*. These two newspapers were chosen because of their cross-Canada distribution and their high circulation rates. *The Globe and Mail* boasts a cumulative, six-day, paid circulation of over 1.9 million, while the *National Post* has a cumulative, six-day, paid circulation of over 1 million, making them the number one and four most circulated English-language Canadian newspapers (Audit Bureau of Circulations, 2012). The articles were retrieved using the Factiva and Canadian Newsstand databases, to ensure a more complete culling of articles. The articles retrieved represented a ten year period, from January 1, 2001 to December 31, 2010, in order to obtain a large sample of articles, to study the most recent coverage of lung cancer, and to determine whether the representation changed in that decade, and if so, how. Within the time period selected, a search was conducted using the search term "lung cancer" and the initial search results found a universe of 1770 articles. Following Musso and Wakefield (2009) and Yoo (2001), it was determined that articles must mention lung cancer at least twice to be included and the following filtering procedure was then employed: mentions 'lung cancer' twice, or 'lung cancer' and 'cancer of/tumour of/growths in the lung' or 'lung' within a list of cancers. The choice to only include these articles was made in an attempt to ensure that the articles were mainly focused on lung cancer. After discarding duplicate articles, those articles that only mentioned lung cancer once, and obituaries and book reviews, a population of 308 articles remained (see Appendix A for a complete list), all of which were coded for as outlined below.

3.3.2 Strategy and Analysis.

Coding.

The unit of analysis was the newspaper article. Please see Appendix B and C, respectively, for the precise operationalization of each concept as well as the coding guide employed. The frequency of articles was coded for by tracking the year, month and day of the week of publication and the article length refers to word length of each article. Article emphasis refers to a *Low, Medium* or *High* emphasis on lung cancer in the overall story. Tone refers to *Optimistic, Neutral/Mixed* or *Pessimistic* portrayals of the disease. If mentioned in the article, a patient's smoking status was coded for as well.

With regard to determining the themes, social actors and frames present, each article could contain more than one theme, frame or social actor. With regard to themes, there were 30 coded for in the articles and they were as follows: *Asbestos, Radon, Pollution, Smoking/Non-smoking, Genetics/Hormones, Tobacco companies, Workplace exposure, Home exposure, Pharmaceutical and biomedical device developments, Prevalence, Incidence, Age, Gender, Race/Ethnicity, Prevention, Detection/Diagnosis/Screening, Treatment, Death, Survival, Biomedical research, Socioenvironmental research, Fundraising, Healthcare system management, Patient rights/Access to treatment, Patient experience, International, Vitamins, Marijuana, Other risks* and *Other*. Importantly, themes emerged over the course of the coding process and thus all the articles were reread and accordingly recoded. Social actors were coded for when actors were quoted on lung cancer. The types of actors considered were: *Biomedical experts, Socioenvironmental experts, Government officials, Politicians, For-profit representatives, Non-government/Non-profit representatives, Celebrity* and *Non-celebrity patients*, *Friends/Family* and *Judicial experts*. Once again, social actors emerged over the course of the coding process,

and thus articles were reread and accordingly recoded. Please see Appendix B for each category's precise definition.

Importantly, with regard to determining the presence of frames, a consideration in framing theory is the development of unique frames that reflect the issue at hand vis-à-vis the use of overarching, general frames. Borah (2011) advises that in conducting framing research, many scholars develop unique frames for the particular topic under study and this particular technique is criticised because those frames are then exclusively tied to that issue. Developing generic frames, however, raises a conceptual debate of how generic a frame must be, to be considered generic (Chong & Druckman, 2007). Borah (2011) asserts that if unique frames are developed, the researcher must then seek to situate those unique frames in relation to other previously developed frames in related fields. As such, any discussion of a particular topic must be closely tied to those studies that examine related concepts in order to ensure the validity of the undertaking. With these considerations in mind, in attempting to tie my research to previous discussions of cancer and disease representations and to build on their findings, I chose to deductively seek out the previously defined *Behavioural/Lifestyle, Biomedical, Socioenvironmental* and *Structural/Critical* frames, with some modifications to the definition of the Socioenvironmental frame. As outlined in Appendix B, the Socioenvironmental frame was expanded beyond the social and environmental causes of disease outlined in the literature review to include instances of reports on sociodemographics, such as changing cancer statistics, as well as reports of the individual experience of the disease, as these two aspects are closely connected to social understandings of the disease. Furthermore, although I considered there to be one dominant frame in an article, I allowed for the possibility that more than one frame could be present within each unit of analysis. Thus, accounting for dominant frames is in accordance with

Gamson and Modigliani (1989) and Snow and Benford (1988)'s approach, and yet, allowing for more than one frame to be present can highlight competitions between the frames and indeed, the social actors who shape the frames. Furthermore, allowing for more than one frame per article more accurately reflects the audience's experience of routine exposure to more than one frame.

Analysis Strategy.

All data were coded in Excel in accordance with the criteria outlined above. Each story was read several times to particularly understand and examine the tones, emphasis, themes, frames, and social actors implicated. This repetitive and reflexive process ensures that the coding was as thorough as possible. The data were subsequently analysed in terms of numerical frequency using SPSS, although the claims made within do not account for statistical significance. Uncovering the numerical trends helped to reveal important considerations, such as changes in coverage in terms of article frequency and word length, changes in emphasis, the dominant themes, tones, frames and social actors and their changes over time. These trends were then considered in relation to one another. Following the numerical analysis, there was a significant amount of manual coding. In truth, numerical calculations were helpful to reveal dominant trends, such as the most common themes, but each theme then had to be considered in terms of its qualitative content. For instance, the Smoking/Non-smoking theme was present in over 50% of articles, but in reality the theme discussed many different aspects of the relationship between smoking and lung cancer.

As the primary research aim was to uncover the portrayal of lung cancer, I developed the three research questions to meet this goal. Following the overall descriptive analysis, a subsequent framing analysis was undertaken to contribute to and build upon the previous literature that seeks to describe and analyse the framing processes in the portrayal of cancer and

disease in the media. The framing analysis thus attempted to move beyond the overall description of the disease to more closely understand the dynamics of social interaction in a late modern context. Certain elements of the overall description were reexamined in the framing analysis, including the frequency, length, emphasis, themes, supporting frames, tones and social actors featured in each frame. Furthermore, I particularly considered the language used to describe the topic as well as by the social actors by pinpointing specific keywords within the articles that provide illustrative evidence of the discourse and dynamics of interaction (Berg, 2007b; van Dijk 1985). The framing analysis includes quotes from articles and, following Musso and Wakefield (2009) and other qualitative analyses, were chosen based on their being emblematic of the larger population of articles. The in-depth framing analysis is meant to add to and complement the overall results, build on previous research into the frames that have emerged in cancer and disease representations, and provide a more complete picture of the portrayal of lung cancer in the Canadian print media.

The next chapter presents the overall results of the content analysis.

Chapter Four: Overall Results and Analysis

This chapter presents the overall results obtained from the collection of articles published on lung cancer in *The Globe and Mail* and the *National Post* between 2001 and 2010. As stated, 308 articles met the filtering criteria (see Appendix A). Notably, the quantitative trends described are not made with claims for statistical significance as these tendencies mainly helped to identify points of interest for the subsequent qualitative analysis. Examining both quantitative trends in and qualitative aspects of the data, however, allows for a more comprehensive understanding of the representation of lung cancer in the Canadian print media.

The aim of the following three research questions was to gain a better understanding of the media's representation of lung cancer over time. The following section explores the articles' overall frequency of occurrence, word lengths, emphases, themes, tones, frames, social actors, and mentions of patients smoking statuses, and whether each variable changed over time. Some percentages do not total 100.0%, as values were often rounded to the first decimal place. Importantly, although some analytical considerations are mentioned in the description below, the critical analysis is reserved until the end of the chapter.

4.1 Research Question 1

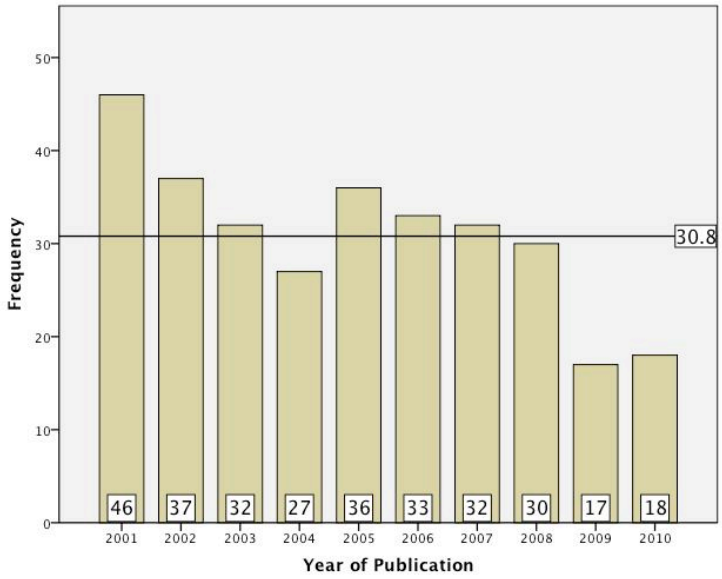
Has the coverage of lung cancer changed in terms of article frequency, word length and emphasis? If so, how?

To understand whether the coverage of articles on lung cancer increased or decreased over time, the first question sought to explore the frequency, length and emphasis of articles.

4.1.1 Frequency.

Each article's year, month and date of publication were coded (see Appendix C). Figure 4.1 presents the annual frequency of articles published between 2001 and 2010.

Figure 4.1: Frequency of Articles per Year of Publication



The box at the bottom of each bar in the graph states the number of articles published that year. The horizontal line indicates that there were on average approximately 31 articles on lung cancer published per year. The greatest number of articles, 46, was published in 2001, while the least number of articles, 17, was published in 2009.

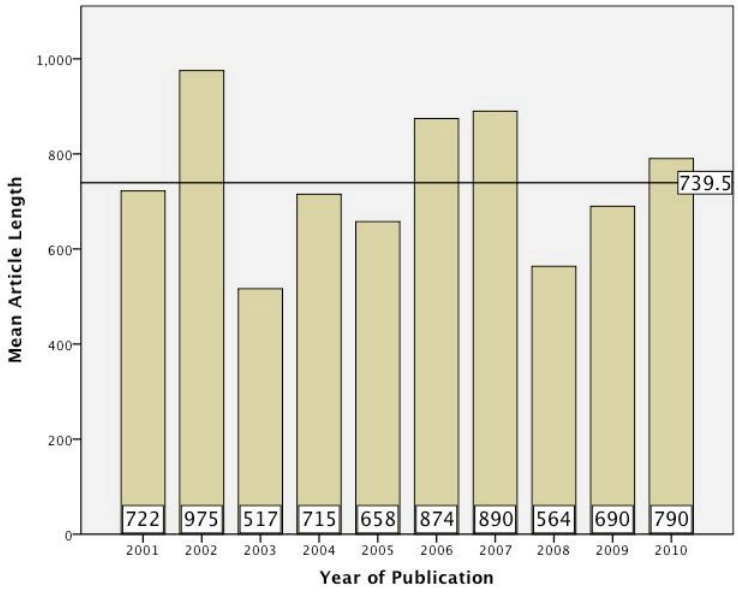
The figure illustrates that there was a downward trend in published articles from 2001 to 2004. The increase in articles published in 2005 is in part due to the celebrity lung cancer diagnoses or deaths of Peter Jennings, Dana Reeves, Federal Member of Parliament (MP) Chuck Strahl, Canadian professional golfer Stephen Ames' wife, musician Lou Rawls, and the mothers of basketball player David Robinson and hockey coach Wayne Gretzky. Indeed, 10 of the 36 articles (27.8%) from that year discussed or were inspired by celebrity diagnoses and celebrity diagnoses were not reported nearly as often in other years. 2005 was followed by another downward trend until 2009, followed by a slight increase in 2010. In examining the cumulative percentage of articles published over time, 57.8% (178) of the articles were published in the first

half of the decade (2001-2005), while 42.2% (130) were published in the second half of the decade (2006-2010). The number of articles published on lung cancer thus decreased over time.

4.1.2 Word Length.

All articles were coded for their word length. Figure 4.2 shows the results of the average length of articles per year in the dataset.

Figure 4.2: Average Length of Articles per Year of Publication



The boxes at the bottom of each bar in the graph state the annual average number of word per article published. 2002 had the greatest average number of words per article at 975 words, while 2003 had the least average number of words per article at 517 words. In terms of individual articles, the longest article was published in 2003 at 5,319 words while the shortest was 54 words, published in 2002. There was a close fluctuation within 250 words of the mean article word length of 740 words in any given year. In comparing the articles published in the first half of the decade to the second half, the average length of articles published in the first half of the decade was 717 words, while the average length of articles published in the decade's

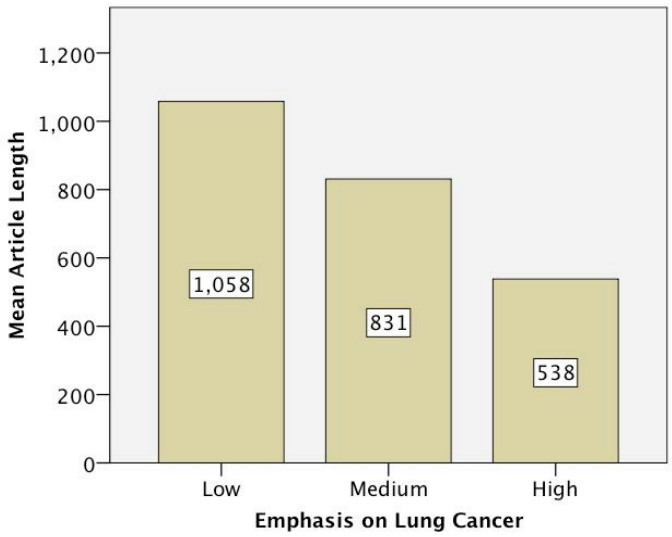
second half was 762 words. Each average deviates approximately 25 words from the overall average, and thus denotes a constant average number of words over time.

Multiplying the actual number of articles published in a year by the average word length from that year demonstrates an overall decrease in the number of words published in the first half of the decade compared to the second half. There were a total of 25,525 words published in the first half of the decade compared to 19,812 words published in the second half of the decade, representing a 23.4% decrease. Thus, the total number of words decreased over time, even though the average number of words per article remained constant.

4.1.3 Emphasis.

Examining the emphasis of the articles on lung cancer allows for a qualitative addition to the quantitative consideration of frequency and word lengths. Articles were coded as having a *Low, Medium* or *High* emphasis on the topic. Figure 4.3 reveals that articles with a higher emphasis on lung cancer tended to be shorter in word length.

Figure 4.3: Average Article Length by Emphasis Type



As the figure demonstrates, articles with a high emphasis on lung cancer had the least average number of words at 538 words per article. Those with a medium emphasis on lung

cancer had an average of 831 words and those with low emphasis on lung cancer were longer articles at an average of 1,058 words. Thus, although the average word length of articles on lung cancer was 740 words, lung cancer arguably garnered less coverage than this result implies when considering the overall emphasis on the topic in a given article.

As outlined in Appendix B, articles with a low emphasis on lung cancer were those that named the disease among many others within a broad discussion, or named the disease in comparison to another topic that was the focus of the article. For example, a 2004 article, *Meet the new face of philanthropy,* discussed a trend in donations to Toronto-area hospitals by several ethnic communities. In particular, the article discussed the Choski family who chose to support lung cancer research at the Toronto General Hospital. The article was coded as having a low emphasis on lung cancer, however, because the article also discussed several other families and donation types. Those articles with a medium emphasis on lung cancer were those that featured a series of individual vignettes, one of which focused on lung cancer, or those that discussed lung cancer in detail in a section of the article, but also focused on other topics, such as other diseases. For example, a 2004 article, *Look more closely at a Prozac study,* reports on different biomedical developments: antidepressants, benefits of chocolate, and whether female smokers are more susceptible to lung cancer than male smokers. Thus, the article was coded as a having a medium emphasis on lung cancer because an entire vignette focused on lung cancer, but the article also comprised other stories. Those articles that had a high emphasis on lung cancer had the disease as the main focus of the entire article, such as the 2004 article, *OSI shares soar on positive lung cancer drug results*, which reports on the results of a new pharmaceutical treatment for the disease. To elaborate on article emphasis, Table 4.1 presents the overall distribution.

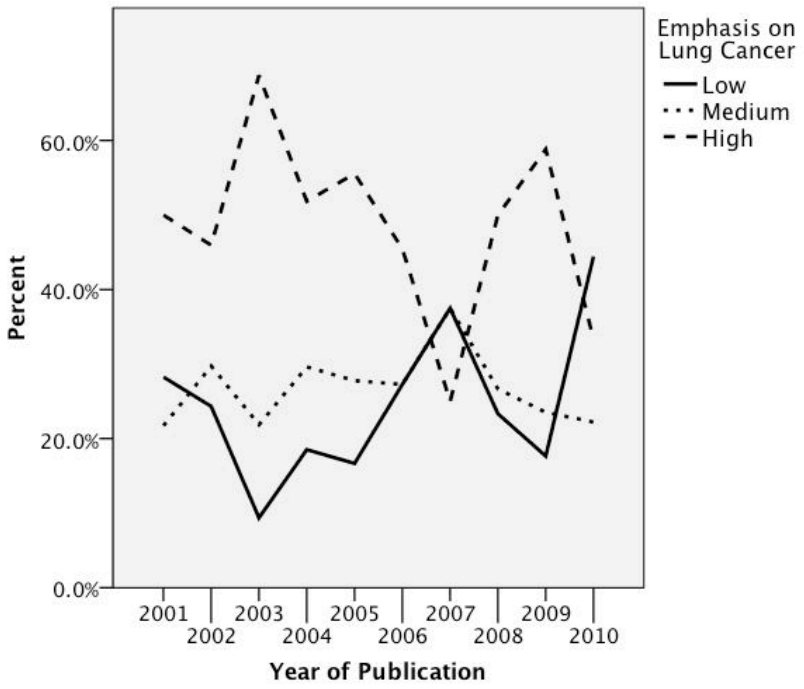
Table 4.1: Emphasis of Articles on Lung Cancer

Emphasis Type	Frequency	Percentage
Low	75	24.4%
Medium	83	26.9%
High	150	48.7%
TOTAL	**308**	**100.0%**

Table 4.1 demonstrates that just less than half the articles analysed (48.7%) had lung cancer as the article's main focus. Approximately one quarter of articles (26.9%) had a medium emphasis on lung cancer while another quarter featured a low emphasis on the disease (24.4%). In general, high emphasis articles reported on new treatment, detection and genetic profiling developments as well as patient diagnoses. Other high emphasis articles discussed biomedical and socioenvironmental research into risks for the disease or examined policy considerations of particular risks such as asbestos and secondhand smoke (SHS). As discussed, medium emphasis articles often featured a lung cancer story in a series of individual vignettes and, for instance, would briefly focus on treatment developments and socioenvironmental research among other reports. Other medium emphasis articles discussed improving healthcare system management, such as through providing computed tomography (CT) and/or positron emission tomography (PET) scans, and often mentioned a particular benefit for lung cancer, but other cancers and diseases were also discussed, as well as were considered in the dynamics of private versus public care. Similarly, other medium emphasis articles discussed lung cancer in the context of changing cancer statistics, where lung cancer was particularly referenced because of its high incidence and death rates. Low emphasis articles also discussed changing cancer statistics and healthcare system management, as well as particular behaviours such as vitamin supplementation and diet, where lung cancer was only mentioned in a list of cancers and diseases. In many other low emphasis articles, lung cancer was briefly compared to other diseases' incidence and death rates, such as breast and prostate cancer. Also, the relationship between smoking and lung cancer was

compared to other risk relationships such as alcohol and various diseases or abortion and breast cancer. There were some changes in emphasis over time, which are highlighted in Figure 4.4.

Figure 4.4: Changes in Emphasis per Year of Publication



As the chart demonstrates, in the years 2003-2005, 2008 and 2009 many articles had a high emphasis on lung cancer. From 2003 through 2005, many of these high-emphasis articles discussed the potential and failures of several lung cancer treatments and diagnostic tools from companies like AstraZeneca, Isis, QLT and Roche. Other articles reported on particular celebrity patient diagnoses, as mentioned earlier. In 2008, there was an increase in discussion on the genetic profiling, biomedical detection and treatment of lung cancer, leading to an increase in this emphasis type. In both 2008 and 2009 there were also discussions around asbestos and some patient diagnoses. Those articles with a medium emphasis on lung cancer stayed comparatively stable, fluctuating by ± 5% in a given year from its overall average, except for 2007. In 2007, there were a greater number of short vignettes that examined the potential for new therapies in

preventing and treating lung cancer as well as reports on socioenvironmental research. Other articles examined smoking where lung cancer was one of a few main diseases to be prevented. In both 2007 and 2010 over 35% of articles had a low emphasis on lung cancer as articles encompassed broad discussions on pharmaceutical industry changes, criticisms of healthcare system management such as a lack of training on PET scanners and limited research funding, and changing cancer statistics in which lung cancer was briefly mentioned. Other low emphasis articles compared various risk relationships to smoking and lung cancer, and reviewed lifestyle considerations, such as diet, which have implications for not only lung cancer.

A comparison of the average percentages of emphasis types in the first half of the decade to the second half of the decade reveals important changes over time. In the first half of the decade, articles had a high emphasis on lung cancer in 53.9% of all articles, which subsequently decreased in the second half of the decade to 41.5% of all articles. An opposite trend is seen in articles with low emphasis, where 20.2% of articles in the first half of the decade that had a low emphasis on lung cancer increased to 30.0% in the second half of the decade. Medium emphasis articles remained comparatively constant over time with relative percentages changing from 25.8% to 28.5% between the first and second halves of the decade. The emphasis of articles on lung cancer thus decreased over time, where lung cancer was increasingly featured in stories where it was one element among many, rather than an article's entire focus.

4.2 Research Question 2

What are the themes, tones and frames of articles published on lung cancer and who are the social actors represented in lung cancer stories? Have these variables changed over time?

Research Question 2 looked beyond the quantitative coverage of lung cancer to examine the more qualitative components of the themes, tone, frames and social actors and whether these variables changed over time.

4.2.1 Themes.

All themes related to lung cancer in an article were coded and Appendix B provides the operationalization for each included theme. Importantly, the presence of a theme does not indicate a particular tone toward the theme nor its relationship with lung cancer. For instance, the *Asbestos* theme was often presented in the context of a critical debate on its risks and benefits. There were 1,415 themes coded for, on average each article had 4.6 themes, and the number of themes per article ranged from 1 to 11. Table 4.2 presents the themes in lung cancer articles by overall frequency, by percentage of appearance in all articles, and by percentage of all themes.

Table 4.2: Themes of Articles on Lung Cancer

Themes	Frequency	Percent (articles)	Percent (themes)
International	170	55.2	12.0%
Smoking/Non-smoking	166	53.9	11.7%
Treatment	119	38.6	8.4%
Biomedical research	101	32.8	7.1%
Death	101	32.1	7.1%
Detection/Diagnosis/Screening	79	25.6	5.6%
Prevention	78	25.3	5.5%
Socioenvironmental research	71	23.1	5.0%
Pharmaceutical/ Biomedical device development	57	18.5	4.0%
Gender	54	17.5	3.8%
Incidence	43	14.0	3.0%
Survival	42	12.7	3.0%
Healthcare system management	39	12.7	2.8%
Patient experience	36	11.7	2.5%
Genetics/Hormones	30	9.7	2.1%
Asbestos	26	8.4	1.8%
Patient rights/Access to treatment	24	7.8	1.7%
Signs/Symptoms	22	7.1	1.6%
Workplace exposure	18	5.8	1.3%
Tobacco companies	18	5.8	1.3%
Age	17	5.5	1.2%
Pollution (other)	13	4.2	0.9%
Vitamins	10	3.2	0.7%
Fundraising	10	3.2	0.7%
Radon	9	2.9	0.6%
Prevalence	9	2.9	0.6%
Side effects	8	2.6	0.6%
Marijuana	7	2.3	0.5%
Race/Ethnicity	5	1.6	0.4%
Home exposure	5	1.6	0.4%
Risk (other)*	18	5.8	1.3%
Other**	9	1.9	0.6%
TOTAL	**1,415 themes**	**----**	**100.0%**

*Other risks mentioned included diet (4), alcohol (2), the SV40 virus (2), arsenic/benzene/chromium (2), radiation (2), incense burning, caffeine, income, emotion, war and heart disease.

**Other themes mentioned included cost of biomedical research (4), alternative medicine (2), the physician's experience, religion and quality of life.

Seven themes appeared in at least a quarter of the articles: The *International* theme (mentioned in 55.2% of articles), followed by the *Smoking/Non-smoking* (53.9%), *Treatment* (38.6%), *Biomedical research* (32.8%), *Death* (32.1%), *Detection/Screening/Diagnosis* (25.6%) and *Prevention* (25.3%) themes. These seven themes account for 57.4% of all themes present in the articles. The International theme was present in the majority of articles and was defined as that in which lung cancer was discussed outside a Canadian context. Some examples include reports on transnational corporations' development of pharmaceutical treatments and biomedical devices, as well as those that described international research into various risk factors. Other articles discussed non-Canadian patients or critiqued Canadian promotion of asbestos-use abroad. The International theme thus appeared in a variety of articles, accenting the world's interconnectedness where Canadians are privy to international developments and criticisms.

Smoking/Non-smoking was the next most common theme and was coded for when articles mentioned the link between smoking and/or SHS to lung cancer. Notably, the relationship was discussed in several ways: Some reports reviewed SHS research and/or argued for preventive legislation, while others reported on biomedical or socioenvironmental studies that included smoking subjects. Still other articles reported discussed lung cancer incidences and deaths as related to smoking trends, or pointed to the need for social support for smoking cessation outreach and disease prevention. Others analysed whether smokers had the right to treatment and whether they should be screened for lung cancer. In some reports, the relationship between smoking and lung cancer was mentioned as the cornerstone of epidemiological research or helped provide context when discussing another risk relationship. Still other articles labeled lung cancer patients as (non)smokers. The Smoking/Non-smoking theme permeates many different discussions and points to the conflation of smoking and lung cancer.

The next two most prevalent themes, Treatment and Biomedical research, were mentioned nearly as often as one another and were frequently discussed in the same article. The Treatment theme was coded for when articles mentioned clinical/pharmacological remedies of the disease. The Biomedical research theme was coded for in articles on investigations into the biology of the disease, secondary prevention, treatment, and survival methods. Articles that mentioned these two themes most often reported on new pharmaceutical developments in the treatment of lung cancer. Similarly, articles that featured the sixth most common theme, Detection/Diagnosis/Screening, discussed research into the development of new biomedical detection tests as well as analysed the implementation of CT and PET scanners and routine screening in the Canadian healthcare system that would lead to improved treatment. In addition to a critical discussion of screening, a few articles criticised the lack of funding and biomedical research into lung cancer, while only a couple of articles criticised the cost of pharmaceutical treatments. In a separate set of articles, the reports moved beyond particular devices, tests and treatments and rather discussed these themes within the scope of individual patient's experience. The presence of these themes highlights the importance of the biomedical institution in the representation of the disease in terms of clinical advancement and the patient experience. Furthermore, these three themes were mentioned more often than Prevention, pointing to a trend to focus on the clinical understanding and management of lung cancer rather than prevention.

The Prevention theme was coded for when articles discussed the primary prevention of lung cancer through risk reduction, either at the individual or societal levels. Over 30 articles that mentioned Prevention focused on the former by discussing particular behaviours such as not smoking, being cautious with vitamins supplements and managing one's diet to prevent the disease. Twenty articles examined Prevention through the lens of legislation, such as banning

SHS exposure in public places, banning asbestos use and implementing stricter guidelines on radon exposure. Nine articles discussed prevention in terms of social support and outreach, for instance with regard to smoking cessation programs. On the other hand, only three articles discussed Prevention within the context of criticizing tobacco marketing. Importantly, the relative focus on behavioural prevention increased over time, skewing the presentation of prevention toward individual responsibility and away from social and political considerations.

Death was coded for when articles mentioned population health mortality rates or discussed the potential for/occurrence of a patient's death. As such, articles often reported on new cancer statistics and thus related lung cancer's mortality rate. Other articles mentioned the death rate to give an article context, for instance a report on a new pharmaceutical treatment would highlight the profit to be made in deaths prevented, or would discuss population health deaths from lung cancer with regard to a specific risk factor, such as smoking. Articles also examined death within the context of patient experience and reported on a patient's outlook around their prognosis. Only a few articles were critical of the high death rates in the context of the need for additional patient support. This theme was mentioned more than 2.5 times as often as *Survival*, accenting the negative rather than positive outcomes associated with lung cancer.

Table 4.3 examines the changes in themes over time and shows that these seven themes remained relatively constant.

Table 4.3: Themes of Articles on Lung Cancer, 2001-2005 vs. 2006-2010

2001-2005			2006-2010		
Themes	**Frequency**	**Percent (articles)**	**Themes**	**Frequency**	**Percent (articles)**
International	107	60.1%	Smoking/ Non-smoking	71	54.6%
Smoking/ Non-smoking	95	53.4%	International	63	48.5%
Treatment	73	41.0%	Treatment	46	35.4%

Biomedical research	63	35.4%	Death	45	34.6%
Death	56	31.5%	Biomedical research	38	29.2%
Detection/Diagnosis/ Screening	49	27.5%	Prevention	34	26.2%
Prevention	44	24.7%	**Socioenvironmental research**	**34**	**26.2%**
Pharmaceutical/ Biomedical device development	**43**	**24.2%**	Detection/Diagnosis/ Screening	30	23.1%
Socioenvironmental research	**37**	**20.8%**	Gender	23	17.7%
Gender	31	17.4%	**Survival**	**21**	**16.2%**
Incidence	25	14.0%	**Healthcare system management**	**20**	**15.4%**
Patient experience	22	12.4%	Incidence	18	13.8%
Survival	**21**	**11.8%**	**Asbestos**	**15**	**11.5%**
Healthcare system management	**19**	**10.7%**	**Pharmaceutical/ Biomedical device development**	**14**	**10.8%**
Genetics/Hormones	17	9.6%	Patient experience	14	10.8%
Patient rights/ Access to treatment	14	7.9%	Genetics/Hormones	13	10.0%
Signs/Symptoms	13	7.3%	Patient rights/ Access to treatment	10	7.7%
Asbestos	**11**	**6.2%**	Signs/Symptoms	9	6.9%
Tobacco companies	11	6.2%	Workplace exposure	8	6.2%
Age	11	6.2%	Tobacco companies	7	5.4%
Workplace exposure	10	5.6%	Age	6	4.6%
Prevalence	9	5.1%	Pollution (other)	6	4.6%
Pollution (other)	7	3.9%	Fundraising	6	4.6%
Side effects	7	3.9%	Vitamins	6	4.6%
Home exposure	4	2.2%	Marijuana	5	3.8%
Radon	4	2.2%	Radon	5	3.8%
Fundraising	4	2.2%	Race/Ethnicity	4	3.1%
Vitamins	4	2.2%	Home exposure	1	0.8%
Marijuana	2	1.1%	Side effects	1	0.8%
Race/Ethnicity	1	0.6%	Risk (other)	9	6.9%
Risk (other)	9	5.1%	Other	6	4.6%
Other	3	1.7%	Prevalence	0	0.0.%
TOTAL	**827 themes**	**-**	**TOTAL**	**588 themes**	**-**

The table shows that there was a greater number of themes mentioned in the first half of the decade compared to the second half (827 vs. 588), and yet in consideration of the decrease of the

number of articles published in each time segment (178 vs. 130), the average number of themes present per article (4.6 vs. 4.5) is consistent with the overall average of 4.6 themes per article.

The bolded themes appeared in at least ten percent of articles in either half of the decade and their presence fluctuated by at least 20% between each half. The relative presence of the *Socioenvironmental research* theme increased by 30% (20.2% to 26.2%), the *Survival* theme by 38% (11.8% to 16.2%), the *Healthcare system management* theme by 44% (10.7% to 15.4%), and the *Asbestos* theme by 85% (6.2% to 11.5%). Conversely, the *Pharmaceutical/Biomedical device development* theme's presence decreased by 55% (24.2% to 10.8%).

The Socioenvironmental research theme was coded for in articles that mentioned new findings from epidemiological and/or population health studies. Articles from the first part of the decade therefore often reported on changing cancer statistics or epidemiological studies into the risk for lung cancer from environmental exposure or behaviour. The second half of the decade also featured cancer statistic updates as well as epidemiological studies. With regard to the latter, there was a greater diversity of subjects of study and a greater focus on behavioural contributions to lung cancer. Indeed, reports examined the would-be relationship between lung cancer and biological sex, a preventive pollutant, pesticides, radiation, city smoking bans as well as marijuana, alcohol, red meat and various vitamins. Reports on cancer statistics also increasingly discussed smoking behaviour. The greater variety of subjects in the risk relationships reported points to society's increasing preoccupation with uncovering risk, while the increasing focus on behaviour reflects the skewed presentation of disease responsibility.

As mentioned, there was an increase in the relative percent of articles that referenced the Survival theme, from 11.8% to 16.2% of articles. The Survival theme was coded for when articles mentioned population survival rates from lung cancer, mentioned survival outcomes

through improved detection, treatment and healthcare system management, or discussed a particular patient's survival. Throughout the decade, the focus on survival was related to the biomedical institution, where the theme was often mentioned in the context of treatments that failed to meet their clinical trial endpoints of improving patient survival. In the first half of the decade, articles discussed the importance of early lung cancer detection, particularly through the use of PET scans, to improve survival. Articles from the decade's second half broadened the discussion and argued for the need for overall improved healthcare system management to reduce wait times for detection and treatment that would lead to improved survival. There was thus a positive focus on the biomedical institution to improve survival. Separately, other articles from the second half of the decade that reported on cancer statistics often related improved survival rates in many cancers; lung cancer was often the anomalous cancer in which there were poor survival rates, highlighting an important diverging trend between lung cancer and other cancers that holds implications for the disease's coverage and understanding in society.

Regarding the Healthcare system management theme, this theme was coded for when articles mentioned how healthcare services and delivery are provided in both Canadian and international contexts. The theme increased in relative presence from 10.7% to 15.4% of articles. In the first half of the decade the theme was often mentioned in the context of Canadian and Ontarian government's reluctance to implement CT and PET scanners into the Canadian healthcare system. Lung cancer was often mentioned as a particular cancer that would benefit due to its often asymptomatic development and rapid metastasis; hence early detection could lead to improved survival. These articles also reviewed private versus public healthcare, where biomedical devices such as CT and PET scanners were offered in private clinics, which therefore holds implications beyond one disease and is a part of a broader discussion of healthcare delivery

in Canadian society. In the decade's second half, there were less reports on particular biomedical devices, but rather increased criticism of government healthcare priorities such as the lack of hospital and research funding, patient wait times for treatment and training for physicians. Because these later debates had an even broader focus on changing the entire Canadian healthcare system, there was less emphasis on the particular implications for lung cancer.

The Asbestos theme increased over time from 6.2% to 11.5%. Articles from the decade's first half discussed asbestos in the context of socioenvironmental and biomedical research, a lawsuit, and MP Chuck Strahl's diagnosis. Three articles from 2001 discussed a particular political intervention by then Prime Minister Jean Chrétien in Chile, where two editorials criticised Canada's support of the product. In the second half of the decade, asbestos was again featured in articles that discuss socioenvironmental research, as well as editorials that mention its disease-causing potential. In addition, seven articles criticised the Canadian government's promotion of the substance abroad and chartering of research to definitively examine its benefits and risks, which was argued to be superfluous. This last set of articles account for the increase in the theme's presence and points to the continued, remarkable debate on the mining of asbestos that brings to light the government's, and therefore the political, role in disease prevention.

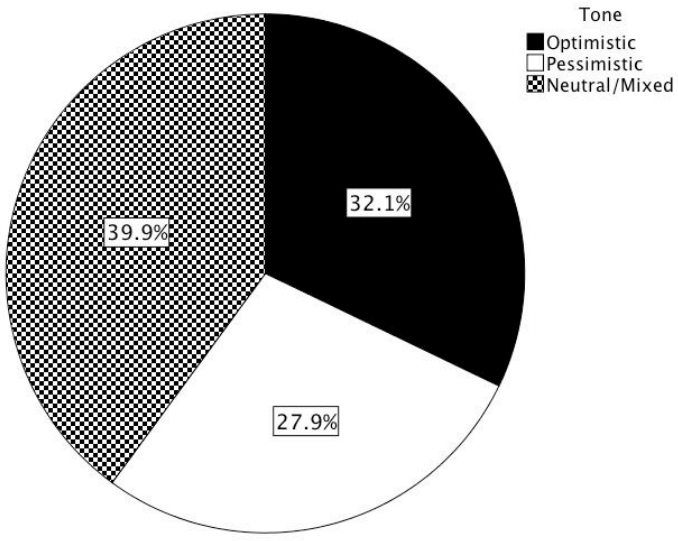
The Pharmaceutical/Biomedical development device theme was the only theme with an over ten percent representation in articles that relatively decreased by over 20% over time, from 24.2% to 10.8%. This theme's decrease is indicative of other related decreases in the Treatment, Biomedical research and Detection/Diagnosis/Screening themes. At the beginning of the decade, articles with this theme focused on emerging lung cancer detection devices, such as through examining saliva, blood or breath tests. Articles also discussed various pharmaceutical treatment developments from Aeterna-Zentaris, AstraZeneca, Biomira, QLT and Roche, among others. In

the latter case, the articles chronicled each drug's promising potential to treat lung cancer, but were often followed by negative reports on clinical trials outcomes. The second half of the decade further reported on negative and positive pharmaceutical developments, but not to the same extent as the first half of the decade. The decrease in the Pharmaceutical/Biomedical device development theme ultimately reflects a lack of progress in developing effective detection tools and treatments for lung cancer, which holds important implications for the disease's coverage.

4.2.2 Tones.

Articles were coded as having either an *Optimistic, Pessimistic*, or *Neutral/Mixed* tone. Optimistic articles were those that described lung cancer positively, such as through describing a new treatment for the disease, Pessimistic articles described lung cancer unfavourably, such as emphasizing the high death rate, and those with a Neutral/Mixed tone were those that either did not offer a predominant tone in its report or provided a combination of optimism and pessimism. Figure 4.5 highlights the distribution of Optimistic, Pessimistic or Neutral/Mixed tones.

Figure 4.5: Tones of Articles on Lung Cancer



The chart shows that the Neutral/Mixed tone appeared in 39.9% (123) articles, followed by the Optimistic tone in 32.1% (99) articles and then the Pessimistic tone in 27.9% (86) articles. With regard to changes over time, a comparison of the average percentages of tone types between the two halves of the decade reveals that the tones stayed consistent over time: The Neutral/Mixed tone increased slightly from 38.2% to 42.3%, the Optimistic tone decreased slightly from 34.3% to 29.2% and the Pessimistic tone stayed constant changing from 27.5% to 28.5%.

Articles that were Neutral/Mixed in tone were often critical of a particular risk factor, such as smoking, and were positive toward prevention initiatives (behavioural, social outreach or legislative) as well as the commitment to research into and the treatment of disease. Other articles presented conflicting perspectives about different risks, such as vitamin supplements. A few articles negatively described the emphasis on biomedical treatment, particularly with regard to screening, and focused on the positive efforts of prevention. More often, however, articles criticised the government as being slow to adopt new detection devices while featuring the biomedical institution's benefits. Only a handful of articles criticised the high death rates in contrast to the stigma faced by lung cancer patients and the need for increased social support. The positive focus therefore was primarily on progress in risk prevention and biomedical advancement, with negative focus on the burden of risk and the government's slow response.

Optimistic articles most often discussed the positive results from, and importance of, new treatment, biomedical device and genetic profiling developments to understand disease risk. The slight decrease in optimistic articles between the first half and second half of the decades could be due to the decrease in positive reports of this type, as well as those of particular patient prognoses. Other Optimistic articles were positive toward preventive behaviours and legislation that reduced the risk for lung cancer. A few Optimistic articles were positive toward particular

lawsuit outcomes or fundraising efforts. Thus once again, the positive focus was primarily on biomedical advancement and risk reduction through behaviour and legislation.

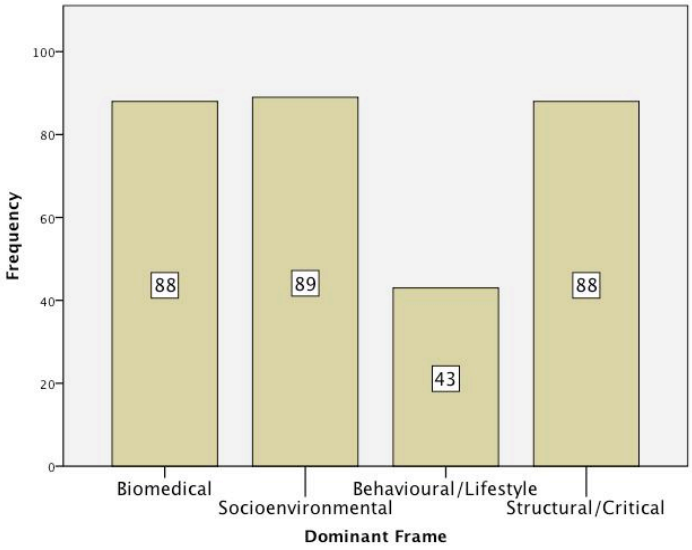
Pessimistic articles often examined lung cancer's incidence and death rates in a population health context, pointing to the disease's weight in society, or were critical of risks for the disease, such as smoking. Other articles reported on negative outcomes of potential treatments or screening protocols. Other articles were critical of governments for (failing to) enacting legislation on SHS, radon and asbestos, or its management of the healthcare system. Thus, the negative focus was once again on the burden of and risks toward the disease and inaction on the government's behalf. Only a few articles criticised other institutions, such as tobacco companies, the media and its overrepresentation of risk, social stigma, and biomedicine's overall lack of understanding of the biology behind lung cancer. Overall, the tones point to positive emphasis on risk prevention and comprehension, as well as biomedical advancement, and a negative focus toward risk as well as government policy.

4.2.3 Frames.

With regard to the frames of lung cancer, articles were coded as having a dominant *Biomedical, Socioenvironmental, Behavioural/Lifestyle* or *Structural/Critical* frame, thus in accordance with the frames discussed in the literature review and methodology sections. Articles were coded as being Biomedical frame dominant when issues were described in scientific/biological terms and/or discussed clinical care including disease screening, detection, diagnosis, treatment, survival and clinical research (Bryant, 2009; Clarke 2005; Clarke & Everest, 2006; Kwan, 2009; see also Appendix B). The Socioenvironmental frame was defined by describing lung cancer in terms of the societal and environmental causes of the disease such as from tobacco marketing, pollution, and poverty (Bryant, 2009; see also Appendix B). Lung

cancer in this frame was also discussed in a population health context and thus examined disease incidence, prevalence, death and survival in society as a whole, or in terms of social categories such as gender, age, race/ethnicity, religion or socioeconomic status. Finally, issues in the Socioenvironmental frame were also discussed with regard to an individual's wellbeing and social support for patients. Articles were coded in the Behavioural/Lifestyle frame when lung cancer was depicted as an individual challenge and accentuated the individual's responsibility in, rather than societal contributions to, the emergence of disease, such as through smoking tobacco or marijuana, or taking vitamin supplements (Bryant, 2009; Clarke, 2005; Clarke & Everest 2006; Hust, et al., 2006; Kwan, 2009; Lawrence, 2004; see also Appendix B). Finally, the dominant Structural/Critical frame was defined as where issues were concerned toward how society "organizes and distributes social and economic resources within a population" as a result of political ideology (Bryant, 2009, pp. 35-36; see also Appendix B). Thus, these articles offered a critique of the issues and gave particular attention toward public policy changes. Figure 4.6 highlights the overall presence of dominant frames in the data set.

Figure 4.6: Frequency of Dominant Frames in Articles on Lung Cancer



The chart demonstrates that the Socioenvironmental frame was the most predominant in 28.9% of articles (89), closely followed by the Biomedical and Structural/Critical frames in 28.6% of articles each (88), and then the Behavioural/Lifestyle frame in 14.0% (43) of articles. There was thus no difference between the occurrence of the three most prevalent frames, in contrast with previous studies that demonstrated the Biomedical and Behavioural/Lifestyle frame's predominance in studies of disease (Bryant 2009; Clarke, 2004; Clarke & van Amerom, 2008; Clarke & Binns, 2006; Clarke & Everest, 2006; Kolker, 2004; Olstead, 2002, Roy, 2008). In addition, there were changes over time as the graph below presents.

Figure 4.7 Changes in Dominant Frames per Year of Publication

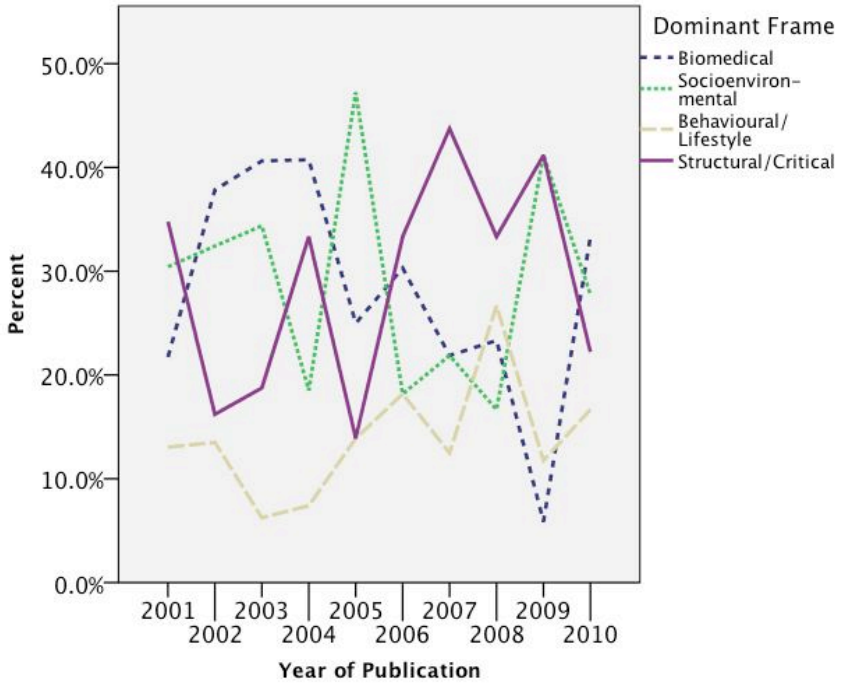


Figure 4.7 shows that there were some fluctuations in the frames over the course of the decade in terms of annual relative percentages. The Socioenvironmental frame was most prevalent in 2005 and 2009. As mentioned earlier, 2005 was a year of several celebrity diagnoses, which were coded in the Socioenvironmental frame. Furthermore, four of the seven

articles in this frame from 2009 also discussed celebrity lung cancer experiences. The Biomedical frame was most prevalent in 2002-2004, where several reports focused on the successes and failures of new biomedical detection devices and pharmaceutical treatments, as well as research into the role of genetics and hormones in causing lung cancer. With regard to the Structural/Critical frame, there was an increase in critical discourse between 2006-2009, where articles examined legislation around asbestos, SHS, tobacco, vitamins, and other lung cancer risks. Other articles particularly critiqued the management of the healthcare system, or turned attention to other critical concerns such as the role of the media in perpetuating inflated risk perceptions, and the cost of pharmaceutical medications. The Behavioural/Lifestyle frame was most prominent in 2008, where articles discussed individual risks posed by smoking, the use of vitamin E and antioxidants, and the use of radon-containing granite countertops.

Based on a comparison of the average relative percentages in the first half of the decade to the second half, there were some notable changes over time: The Socioenvironmental frame decreased by 29% (33.1% to 23.1%), as did the Biomedical frame by 26% (32.0% to 23.8%), while the Structural/Critical frame increased by 50% (23.6% to 35.4%) as did the Behavioural/Lifestyle frame by 58% (11.2% to 17.7%). The next chapter will analyse each frame in depth to account for these trends.

4.2.4 Social Actors.

Social actors were conceptualized as those actors who negotiate the representation of lung cancer in the media. For example, a biomedical expert could be quoted on the biology of the disease, or a patient could describe their lived experience. Furthermore, these two actors could interact in the content, which might also hold important implications for understanding the disease's negotiation. Thus, all actors whose quotes directly related to the representation of lung

cancer were coded and those whose quotes discussed a different topic, such as a different cancer type, were not included. As such, there were 446 actors quoted which translates to an average of 1.4 actors quoted per article. There was a mode of 1 actor quoted in 115 articles and the number of actors quoted ranged from none (87 articles) to ten actors (1 article). Thus, most often, a single actor was quoted. Table 4.4 presents the ranking of the types of social actors.

Table 4.4: Social Actors in Articles on Lung Cancer

Social Actors	Frequency	Percent (Actors)
Biomedical expert	103	23.1%
Socioenvironmental expert	69	15.5%
Non-government/ Non-profit representative	60	13.5%
Government official	53	11.9%
For-profit representative	53	11.9%
Family/Friends	37	8.3%
Patient (non-celebrity)	22	4.9%
Patient (celebrity)	12	2.7%
Politician	11	2.5%
Judicial expert	8	1.8%
Other*	18	4.0%
TOTAL	**446 quotes**	100.1%

*Other includes former smokers/smokers (5), citizens (4), other journalists (3), students (2), a worker exposed to second-hand smoke, a junk science scholar, and a former patient turned counselor.

The table demonstrates that the *Biomedical expert* was the most commonly quoted (103 quotes), followed by the *Socioenvironmental expert* (69 quotes) and the *Non-government/Non-profit representative* (60 quotes). These three actors account for over 50% of all quoted actors. The Biomedical expert was defined as "a medical, biological and/or clinical specialist who speaks under the guise of clinical expertise on the biology of lung cancer" (Appendix B). This actor functioned as an authority on the disease and often commented on their own research into risk and biomedical advancement, provided rationale for their studies, described their research results or elaborated on the potential impact of their research in changing biomedicine. In this

way, Biomedical experts reinforced the importance of the biomedical institution in understanding and controlling lung cancer. Indeed, the Biomedical expert not only acted as authoritarian on the biological function of the disease, its risks and its detection and treatment, but also with regard to particular patient prognoses as well as behaviours individuals should perform or avoid. In a few cases, these experts criticised one another; for instance, with regard to the potential for routine screening, some experts purported the practice would lead to improved patient outcomes, while others argued that the focus should be on disease prevention through not smoking. There was thus some disagreement among Biomedical experts, highlighting contests over knowledge and procedures, as well as the relative importance of the institution itself. Importantly, the criticism occurred between Biomedical experts rather than with other actors, accenting the privileged, insular position of this actor. To a much lesser extent did Biomedical experts act as critics toward the government, and then only with regard to the provision of PET scans and the lack of research funding, thus further stressing the insular focus of these experts.

The Socioenvironmental expert was defined as "an epidemiologist or social or environmental expert who speaks under the guise of population, social, or environmental expertise" (Appendix B). Like with Biomedical experts, these experts acted as authorities by offering comments on their own or one another's research, which often examined the epidemiological link between environmental risks and behaviours, such as SHS or vitamin supplementation, and lung cancer. Others commented on the changing rates of lung cancer in various populations. Thus, these experts also strengthened their privileged position, and in fact entire articles were devoted to promoting epidemiological research. With regard to contests over knowledge, some Socioenvironmental experts contested one another's claims, particularly around asbestos and SHS. Unlike the Biomedical experts, these contested claims were more

prevalent and spanned entire articles and involved other social actors, highlighting a trend for the Socioenvironmental expert to compete for authority. In fact, the Socioenvironmental expert was often a critic of the government, particularly around asbestos exposure and the management of the Canadian healthcare system. On a few occasions, some Socioenvironmental experts advocated for the benefits of outreach in the smoking population, highlighting a small trend for social advocacy among this expert type. Importantly, both the Biomedical and Socioenvironmental experts were the predominant social actors represented, accenting the privileged position of experts.

The Non-government/Non-profit representative usually appeared in articles that featured other actors, while advocating for legislation against particular risks, such as asbestos or SHS, or improved healthcare such as the provision of PET scanners or improved cancer control. In contrast, only a few acted as social advocates for lung cancer support in terms of fundraising and stigma reduction. To a lesser degree, they acted as experts, commenting on lung cancer trends, such as incidence rates linked to smoking. Other representatives provided supportive comments for socioenvironmental or biomedical research, describing the real-world applicability of research results and reinforcing the experts' claims. Indeed, only a few representatives were critical of the expert institutions, and examined the focus on treatment versus prevention.

Table 4.5 outlines the changes in social actors quoted in the first half of the decade compared to the second half in terms of absolute and relative frequency:

Table 4.5: Social Actors in Articles on Lung Cancer, 2001-2005 vs. 2006-2010

2001-2005			2006-2010		
Social Actors	**Frequency**	**Percent (actors)**	**Social Actors**	**Frequency**	**Percent (actors)**
Biomedical expert	**55**	**20.2%**	**Biomedical expert**	**48**	**27.4%**
For-profit representative	**44**	**16.2%**	Socioenvironmental expert	31	17.7%
Socioenvironmental expert	38	14.0%	**Government official**	**28**	**16.0%**
Non-government/ Non-profit representative	38	14.0%	Non-government/ Non-profit representative	22	12.6%
Government official	**25**	**9.2%**	Family/Friends	13	7.4%
Family/Friends	24	8.8%	Patient (non-celebrity)	10	5.7%
Patient (non-celebrity)	12	4.4%	**For-profit representative**	9	5.1%
Patient (celebrity)	**10**	**3.7%**	Politician	6	3.4%
Politician	5	1.8%	**Patient (celebrity)**	**2**	**1.1%**
Judicial expert	6	2.2%	Judicial expert	2	1.1%
Other	14	5.2%	Other	4	2.3%
TOTAL	**271 quotes**	**99.7%**	**TOTAL**	**175 quotes**	**99.8%**

The table shows that there were a greater number of actors quoted in the first half of the decade compared to the second half (271 vs. 175), and yet in consideration of the decrease of the number of articles published in each time frame (178 vs. 130), the average number of actors quoted per article (1.5 vs. 1.3) remains consistent with the overall average of 1.4 actors per article. The bolded actors had at least ten quotes and fluctuated at least 30 percent between each of the time segments. The Biomedical expert was the most often quoted actor in each time frame, and in fact the presence of the Biomedical expert increased in proportion by 36% (20.2% to 27.4%). Most quotes from the decade's first half focused on research outcomes into the biology of risks and treatments, with a lesser number focused on behaviour and patient prognoses. As mentioned, there was an increase in the Behavioural/Lifestyle frame, and indeed in the decade's second half, many Biomedical experts acted as authorities on particular behaviours, such as

smoking, pointing to an interesting tension between biomedical advancement and behavioural prevention. Indeed, there was increased debate over the benefits of routine screening compared to prevention, thus leading to contested claims among Biomedical experts.

Quotes from the *Government official* increased by 57% (from 9.1% to 14.2%). In the first half of the decade the Government officials often commented on their own commissioned research, thereby acting as experts. Other times, international and provincial government officials criticised the Canadian federal government on particular policies. Indeed, federal officials often responded to critiques on the policies of healthcare management, PET scans and asbestos. In the second half of the decade, these same two types of roles were present, but there was a greater focus on responding to asbestos criticism. Thus, the Government official was increasingly called upon to defend its policies in response to the criticism of other social actors. Importantly, only a few Government officials acted as advocates for social change, such as relaying the importance of changing the culture around smoking.

In terms of decreasing presence, the *For-profit representative* decreased by about 62% (14.9% to 5.7%). The For-profit representatives were generally Chief executive officers (CEOs) and analysts who were quoted in the beginning of the decade on the outcomes of potential treatments and biomedical devices. Because the second half of the decade had fewer articles discussing the advancement of treatments and detection devices, the related quotes from For-profit representatives decreased. Similarly, the *Patient (celebrity*) quotes decreased by 70%, from 3.7% to 1.1%, as the number of articles reporting on patient celebrity diagnoses decreased in the second half of the decade. Importantly, celebrity patients often commented on their diagnoses and expectations of prognoses, rather than acting as advocates for the disease. Thus, when reports of diagnoses decreased so too did the representation of these social actors.

4.3 Research Question 3

Is the smoking status of the patient mentioned? How has this variable changed over time?

This question refers to the media's propensity to conflate the link between smoking behaviour and lung cancer, by describing patients as smokers or non-smokers. Indeed, the popularity of the Smoking/Non-Smoking theme points to the conflation of the theme with the disease. MacKenzie et al. (2010) found in their study of lung cancer that articles tended to overrepresent non-smoking patients as compared to smoking patients. In this dataset, the articles were coded for whether smoking status was mentioned or not, or did not apply if there were no particular patients discussed. When the smoking status of the patient was mentioned in the article, the smoking status was then coded as identified as a *Non/Former smoker* or a *Smoker*. Importantly, some articles referenced more than one patient, and thus all applicable patient cases were coded. Table 4.6 presents the distribution of smoking status mentions in terms of absolute frequency and relative percent. Table 4.7 presents the distribution of statuses in the same terms.

Table 4.6: Smoking Status Mentioned

Smoking Status Mentioned	Frequency	Percent
Yes	37	11.8
No	34	10.9
Not applicable	241	77.2
TOTAL	**312**	**99.9%**

Table 4.7: If Yes, Smoking Status of Patient

Smoking Status	Frequency	Percent
Non/Former smoker	21	56.8
Smoker	16	43.2
TOTAL	**37**	**100.0%**

As Table 4.6 demonstrates, the question did not apply to 241 articles. In the balance of cases, smoking status was mentioned more often than not (37 versus 34 cases). Thus, the tendency was to identify the patient's smoking status rather than to simply refer to them as a lung cancer patient, serving to reinforce the conflation of smoking and lung cancer in the case of individual diagnoses. Of those cases where the smoking status of the patient was mentioned, as Table 4.7

demonstrates, 21 patients (56.8%) were identified as Non/Former smokers, while 16 patients (43.2%) were identified as a Smoker. Thus, articles on lung cancer were more likely to report the smoking status of a patient than not, and within those cases, report on non- or former- smoking patients as compared to current smokers, thus adding to MacKenzie et al.'s (2010) study.

In the decade's first half, a patient's smoking status was identified in 26 cases and not stated in 21 cases. When smoking status was identified, the classification was divided between 13 Non/Former smokers and 13 Smokers. In the second half of the decade, a patient's smoking status was identified in 11 cases, and not identified in 13 cases. Of those whose smoking status was identified, there were eight Non/Former smokers and three smokers. Thus, the trends over the decade were to increasingly not identify a patient's smoking status, but when identified, Non/Former smokers were more often represented than their smoking counterparts. Overall, this trend to distinguish between those who do or do not smoke and to leave out smoking patients hold vital implications for the representation of lung cancer in the media, as is discussed next.

4.4 Analysis: The Changing Coverage of Lung Cancer

The results presented in this section illustrate some of the many different considerations that can contribute to an improved understanding of how lung cancer, cancer and disease in general are represented in the media. A content analysis of lung cancer's quantitative coverage in terms of frequency, length and emphasis in tandem with an understanding of the qualitative aspects of themes, tones, frames, social actors, and smoking statuses, and how these variables changed over time, can enhance the understanding of how this disease, and disease in general, is negotiated in late modernity. To add these results to the body of knowledge on the media's representations of disease, the results must be discussed in the theoretical framework. For instance, the International theme was the most common theme in all articles. The presence of this

theme highlights Giddens and Pierson's (1998) perspective that we live in an interconnected society in which we are privy to information from around the world, and thus transcends many discussions. It is within the context of late modernity that the subsequent discussion takes place.

The literature review showed that lung cancer is underrepresented in the media as compared to its mortality rate (Hoffman-Goetz & Friedman, 2005; Hoffman-Goetz & MacDonald, 1999; Lewison et al., 2008; Jensen et al., 2010; MacKenzie, Chapman, et al., 2009; Musso & Wakefield, 2009; Slater et al., 2008). Furthermore, Hoffman-Goetz and MacDonald (1999) pointed out that the coverage of lung cancer in Canadian women's magazines decreased between 1991 and 1997. Importantly, in this study, not only did the frequency of articles and overall word count decrease, there was also a decrease in the overall emphasis of articles on lung cancer. In fact, high emphasis articles that focused on disease treatment and patient experience decreased, and low emphasis articles on healthcare system management increased, providing an example of where lung cancer is included in a broader discourse as one of many cancers and diseases to be managed. Thus, the focus increasingly turned away from lung cancer, to include the disease as one part of a more complex dynamic rather than a singular point of consideration. Arguably, an already peripheral cancer became further marginalized over the first decade of the 2000s in the Canadian media. There are a few factors that contributed to the decrease that must be considered: A decrease in reports on pharmaceutical and biomedical device developments and thus the biomedical discourse, a decrease in reports on celebrity diagnoses and thus a lack of advocacy, and the presence of the Smoking/Non-smoking theme that indicates and reinforces a lack of public sympathy. These implications will be discussed in tandem with other considerations of how and why the coverage of lung cancer decreased.

The high emphasis articles that discussed biomedical advancements are important to the media's representation of lung cancer. The decreasing presence of Pharmaceutical/Biomedical device development theme and For-profit representative is related to the corresponding decreases of Biomedical research, Detection/Diagnosis/Screening and Treatment, as well as the Biomedical frame. Despite the decrease, the presence of these themes, related actors and the frame, indicate the privileged position of the institution. For instance, the Biomedical expert was the most commonly quoted social actor, and was granted the position to reinforce the institution's authority, uncontested and supported among other social actors. As Gamson and Modigliani (1989) relate with regard to *media practices*, journalists give preference to official frames, in this case the biomedical institution. In fact, as other scholars have related, the Biomedical frame is often the taken-for-granted backdrop against which disease and cancer are presented (Bryant, 2009; Clarke, 2004; Clarke, 2005; Clarke & van Amerom, 2008; Clarke & Binns, 2006; Clarke & Everest, 2006; see also Lewison et al., 2008; MacKenzie, Chapman, et al., 2009; Musso & Wakefield, 2009; Slater et al., 2008; Stryker et al., 2006). Yet, in this content analysis the Biomedical frame was tied as the second-most common frame and decreased over time, indicating a potential problem with the dominance of this frame in the representation of lung cancer. As mentioned, the first part of the decade was filled with coverage of potential detection devices and treatments, but the optimism established from those early articles were mitigated by the negative reports of the mid-decade. While there were other promising reports toward the end of the decade, the biomedical institution was arguably unable to meet late modernity's requisite of mitigating risk and controlling disease, and thus the coverage of lung cancer decreased.

The decrease in biomedical discourse is connected to the discussion of death and risk management. Giddens (1991) advises that in late modernity, that as a forward-facing,

progressive society we are ill equipped to deal with the implications of death. Much of society's attention is thus given to controlling uncertainty and minimizing risk as a way to control and delay death, (Giddens, 1991) and is evidenced by the prevalence of the Death theme in this discourse. With regard to disease, the biomedical institution is credited with controlling its risk and thus mitigating death. Indeed, a review of the tones of articles on lung cancer reveals that most articles were positive toward biomedical advancements and improved understandings of risk, and were critical of risk themselves and negative research outcomes. Furthermore, many articles were critical of the government's slow uptake of biomedical advances, the lack of funding and research into treatment, and in contrast, only a few articles were critical of the focus on improving the biomedical institution at the expense of focusing on preventative efforts as well as on the cost of pharmaceutical treatments. The data thus reveal that society is preoccupied with the biomedical institution managing risk and death. The decrease in biomedical coverage is therefore related to Gamson and Modigliani's (1989) argument that the media produce content that is *culturally-resonant*, in this case, one of disease management and control through the biomedical institution. Clarke and Everest (2006) argue that the Biomedical frame is popular in the media because the institution helps us control the fear of cancer through biomedical intervention, or in other words to control the risk of cancer that leads to death. Part of the discourse that emerged on lung cancer, however, is one of uncontrolled death, where the biomedical institution was unable to control this cancer as evidenced by unsuccessful detection devices, expensive routine screening procedures, and ineffective treatments. Furthermore, the increase in the Survival theme is once again related to the discussion of death, where the more recent articles on improving survival rates among many other cancer types reinforce the growing divergence between other cancers and lung cancer. Thus, the data show that, where possible,

biomedicine is given preference and authority, and yet, the institution's lack of progress in controlling cancer leads to non-culturally resonant content and thus a decrease in coverage.

The high death rates from lung cancer have another important implication in that there are few living patient advocates, particularly celebrities, to increase lung cancer coverage. Gamson and Modigliani (1989), Kolker (2004) and Stryker et al. (2006) claim that advocates, or *sponsors,* are partially responsible for increasing disease coverage. Furthermore, Bennett (2007) argues that the media's practices of presenting personalized and melodramatic news stories works well with the reports on celebrity diagnoses. Indeed, as the results of the content analysis indicate, coverage of lung cancer particularly increased in 2005 when there were numerous accounts of diagnoses and deaths, and yet, these reports were often singularly focused on the patient in their time of crisis. Furthermore, as mentioned, the Patient (celebrity) quotes decreased, as did the Patient experience theme that also corresponds with the decrease in the Socioenvironmental frame. In accordance with Hust et al. (2006) findings, there were missed opportunities for celebrities to translate their diagnoses into advocacy work and to increase coverage of the disease beyond a single diagnosis. In other words, the chance to make broader, macrological connections between celebrity diagnoses and other lung cancer considerations was overlooked. Thus, when reports on celebrity diagnoses decreased, so too did all coverage as there was little to no advocacy work to sustain coverage of the disease. The few Non-government/Non-profit representatives and Government officials who commented on the importance of support for the disease also evidence the lack of advocacy.

In discussing individual accounts, Iyengar and Simon (1993) argue that when news is episodically reported, meaning, focused on individual events such as singular diagnoses, that the individuals themselves are more often held accountable for the problems. Indeed, the celebrity

reports usually included an account of their lifestyles, as evidenced by the reporting of smoking status, thus reinforcing the focus on the personal rather than the social or critical. These accounts reinforced the focus on individual responsibility, which more broadly relates to the prevalence of the Smoking/Non-smoking theme. This latter theme's predominance with attention to individual responsibility also holds important implications for the lung cancer's coverage.

The focus on the prevention of lung cancer through behaviour, particularly through non-smoking, has important implications in the context of controlling risk for the disease. The content analysis revealed that the Smoking/Non-smoking theme was the second most prevalent theme. As mentioned in the literature review, MacKenzie et al. (2010) speculate that the media's overall neglect of the disease may be due to the view that lung cancer, as a result of smoking, is self-caused. With regard to the conflation of lung cancer and smoking, in their study, MacKenzie et al. (2010) noted that over two-thirds of lung cancer statements mentioned smoking and also found that television news focuses predominantly on non-smokers who develop lung cancer. In this content analysis, over fifty percent of articles mentioned either smoking or non-smoking and thus the theme permeates many different discussions of lung cancer and reinforces the relationship of smoking with lung cancer. Furthermore, the third research question explores whether a patient's smoking status was addressed, and if so, their smoking status. The results showed that over half of the discussions of patients mentioned their smoking status, and that non/former smokers were more often discussed than smokers. The results of the content analysis thus further support MacKenzie et al.'s (2010) findings and the claim that the conflation of smoking and lung cancer potentially leads to a decrease in coverage because of a lack of public sympathy for the patients, particularly those who are smokers, as a result of smoking behaviour.

In contrast to the argument that lung cancer is a disease to be feared because of the lack of biomedical detection, screening and treatment advancements to control risk, lung cancer is also a disease for which there is another way to control - through not smoking. Confirming a previous study (Musso & Wakefield, 2009), Prevention was most often discussed with regard to behavioural/lifestyle changes, particularly smoking, and thus the imperative is placed on individuals to prevent the disease. Furthermore, as mentioned, the Behavioural/Lifestyle frame and the Socioenvironmental research themes increased over time, with increasing focus on studies into individual behavioural risks. Although the Socioenvironmental research had diversified its focus into risk relationships, which points once again to late modernity's drive to understand and mitigate risk, the research also more often examined behaviours such as marijuana smoking, consuming alcohol, etc. Indeed, Biomedical experts increasingly focused on behavioural prevention in the second half of the decade that also impacts the view of the disease as self-caused and results in a stigma. Although society still looks to the biomedical institution to control the disease, as evidenced by the Treatment and Biomedical research themes that appeared more often than the Prevention theme, the focus has also increased toward behavioural prevention and thus to individuals to assume responsibility to prevent the disease's emergence.

In some cases prevention was discussed through the lens of legislation, particularly with regard to SHS and asbestos, which is related to an increase in the Structural/Critical frame. In the first case, advocates were successfully able to argue that epidemiological research shows exposure to SHS as a risk to public health. With regard to asbestos, in the second half of the decade, the critical debate turned to the government's role in preventing disease emergence through the abolition of the exportation of the substance abroad. The articles demonstrate the dynamics of the Non-profit/Non-government official and Socioenvironmental experts' advocacy

for legislation and the Government official's responses. On the other hand, there were few articles that examined prevention through the lens of tobacco marketing or through social conditioning, thus ignoring other important prevention components, which also contributes to the stigma of the disease. In other words, the complicity of tobacco companies in producing a harmful product, and the government for allowing the product to be on the market, is ignored. The lack of discussion of how social structures and institutions influence dangerous behaviours in individuals reinforces the view of lung cancer as self-inflicted, and thus to decreased coverage.

Kolker (2004) studied the activities of breast cancer advocates in the US and argued that advocates developed support through employing culturally resonant frames. In contrast, the coverage of lung cancer decreased over time due in part to the lack of culturally resonant frames with regard to biomedical advancement. Furthermore, there was a lack of sponsor activities as evidenced by the lack of patient advocacy, particularly among celebrities. The decreasing coverage is also due to conflation of smoking and lung cancer, where lung cancer is represented as a self-inflicted disease and thus unworthy of attention. Smoking as self-inflicted is reinforced by the focus on behavioural prevention and a lack of social and political criticism rather than other forms of prevention. Indeed, these reasons outlined above are in accordance with Conlon et al.'s (2010) discussion of lung cancer as a "stacked stigma" (p. 98), due to poor prognosis, the lack of advocacy, and the relationship of the disease with cigarette smoking.

The next chapter describes each of the four different frames (Biomedical, Socioenvironmental, Structural/Critical and Behavioural/Lifestyle) and the social actors within those frames to examine the dynamics of social interaction that contribute to the representation of lung cancer in the media.

Chapter Five: Framing Results and Analysis

The aims of the framing description and analysis are to thoroughly review of each of the frames and the processes of reflexive negotiation among social actors in a late modern context. The following chapter thus offers a detailed description of each of the dominant frames and the social actors represented in those frames. As such, emblematic quotes of each frame are cited to support the reporting of the results. Each frame is described in terms of frequency, length, emphasis, themes, supporting frames, tones and social actors, the last of which leads to a review of the dynamics of social interaction. The framing of lung cancer and the dynamics of social interaction are then subsequently analysed within the context of the theoretical framework.

5.1 Socioenvironmental Framing

The Socioenvironmental frame was the most prevalent dominant frame, appearing in 89 articles, albeit closely followed by the Biomedical and Structural/Critical frames. As previously discussed, the frame has many nuances, ranging between portraying the socioenvironmental causes and the population health implications of the disease, and the impact of the disease on the individual in society (see Appendix B; see also Bryant 2009). The frame's root is thus found in a social understanding of lung cancer. With regard to word length, the articles were, on average, 735 words and thus on par with the overall average of 740 words. 48.3% of the articles had a high emphasis on lung cancer, which is also on par with the overall average of 48.7%, as were articles with low (25.8% vs. 24.4%) and medium (25.8% vs. 26.9%) emphases on the disease.

5.1.1 Themes.

Articles with a dominant Socioenvironmental frame most often mentioned the following themes: Smoking/Non-smoking (52 articles), International (43 articles), Death (40 articles), Treatment (30 articles), Socioenvironmental research (27 articles) and Patient experience (25

articles). The International theme was a common thread among articles on research from abroad, population health trends in countries like the United States or China, or patient experiences from other countries. The presence of this theme points to the world's interconnectedness, where expertise, trends and expertise are relevant and reported to Canadians.

The Smoking/Non-smoking theme was featured in several different types of articles: Tobacco lawsuits, lung cancer prevention and support initiatives, epidemiological research into lung cancer's link to SHS, reports on cancer statistics, and the patient experience, among others. A handful of early articles from 2001-2003 focused on the verdicts of US-based lawsuits brought forward by lung cancer patients against tobacco companies. These articles highlighted how lung cancer patients felt misled by tobacco companies and revealed the latter's involvement in the promotion of smoking while hiding information about the negative health effects. Such articles reveal a social cause of lung cancer, rooted in tobacco marketing. Another article from 2002, *Cancer increase in young adults alarm doctors,* points to a different social contributor to lung cancer, the conditioning of young adults to think smoking is cool:

> Carolyn Sepp took up smoking in her late teens. At first it was cool, then addictive, but she figured she was young and could kick the habit later. Now, at age 29, the Toronto graphic designer finds herself with cancer: one tumour on a lung and another on her lymph nodes.

In this context, lung cancer was framed as a result of societal causes of smoking, through tobacco marketing and social conditioning. These social causes of lung cancer, however, were only discussed in one article in the second half of the decade.

A handful of articles from the first half of the decade examined smoking cessation and prevention efforts in a social context. For instance, articles examined initiatives by former and current patients, such as a former Marlboro spokesperson and model Barb Tarbox, as well as the role employers could play in lung cancer prevention. These articles frame lung cancer within the

context of social responsibility where several social actors such as patients, advocates, family, friends, and employers all play roles. The social aspect of smoking prevention and cessation is emphasized, turning the focus away from individual behaviour to social support to prevent disease. In addition, two articles focused on the disease's social stigma; A 2003 article, *Lung cancer patients die with guilty conscience*, summarises:

> Only 14% of lung cancer patients on this continent survive for five years, and patients face the perception they have no one to blame but themselves, said experts at a Vancouver conference. The strong associations between lung cancer and smoking means patients are stigmatized, speakers told the 10th World Conference on Lung Cancer.

In the 2004 article, *Meet the new face of philanthropy*, a philanthropist describes his support for lung cancer based on the stigma surrounding the disease that results in a lack of research funding. Unlike in the first half of the decade, where discussions of the social causes of, and perceptions of, lung cancer were found in nine articles, only two similar articles were featured in the second half of the decade. Furthermore, only one article discussed the implications of poverty on causing lung cancer, pointing to a neglect of discussing other social causes of the disease.

Articles from the beginning of the decade also discussed Smoking/Non-Smoking as an environmental consequence, focusing on research into SHS in the workplace environment. Some articles recognized that legislation could play an important role in preventing lung cancer deaths in this regard, but most did not specifically call for legislation to be enacted. There were no new reports on research into SHS exposure in the decade's second half, therefore contributing to the frame's decrease over time.

Importantly, some articles pointed to the relationship of smoking and lung cancer as a reference point, and thus serving to further conflate the two concepts. For example, environmental exposure research reports such as *City air raises risk of cancer, study says* (2002); *Asbestos-related disease is growing: Has doubled in Ontario* (2005); and *A silent monster lurks*

in the basement (2005), all compare lung cancer caused by pollution, asbestos, and radon, respectively, to the proportion of the disease related to smoking. Thus, the Smoking/Non-smoking theme appeared in articles generally unrelated to smoking and lung cancer, and therefore reinforced the concepts' conflation.

Death was the third most common theme in the Socioenvironmental frame. Indeed, many articles related updates on Canadian population health cancer statistics, presenting the high prevalence and incidence of the disease as well as death rates. Most articles explicitly connected the changing trends to "smoking", although not specifically discussing smoking as a behaviour. For instance the 2002 article *Death: What are the odds* states:

> Lung cancer killed 30 out of every 100,000 women in 1989. The number rose to 42 in 1999, surpassing breast cancer as the leading cancer killer of females. Cancer experts find the figures discouraging. Smoking will shorten the odds of disease for women, from cancer and heart disease to osteoporosis, for decades to come.

The mention of smoking thus serves to further conflate it with the disease, without exploring other causes of lung cancer.

Furthermore, the articles that mentioned Death also told of diverging trends between the progress in controlling many cancers and the difficulty in controlling lung cancer. An article from 2007, *Death rate falling, more women living longer after diagnosis*, continues, "Death rates from cancer overall and most types of cancer have been falling for about a decade, with the exception of lung cancer in women and liver cancer in men." Articles that discussed population health statistics appeared throughout the decade, and lung cancer was often set apart from the survival advancements of other cancers. There was thus a diverging discourse of other cancers as compared to lung cancer, where lung cancer was associated with death, while other cancers were increasingly associated with survival (see CCS, 2010).

The Socioenvironmental research theme was the fifth most common theme in the Socioenvironmental frame. As mentioned, some articles reported on changing cancer statistics and research into SHS. Others reported on various epidemiological research initiatives into, among other potential causes, pollution, diesel, pollutants, and asbestos as causes of lung cancer. Importantly, the latter articles highlight causes of lung cancer other than smoking, and root cancer in environmental rather than behavioural causes. Yet, as mentioned, smoking often provided statistical context or smokers were included as a subject group, and thus even these articles reinforce the cancer's link to smoking. Despite the conflation, the environmental focus proved important for understanding different risks of lung cancer. Importantly, the Socioenvironmental research theme decreased over time in this frame, as these types of reports began to more explicitly draw out and focus on behavioural aspects of disease causation and were thus included as a part of the Behavioural/Lifestyle frame.

Treatment was the fourth most common theme in the Socioenvironmental frame, which in this context was often related to the sixth most common theme of the Patient experience. These articles focused on lung cancer patients' experiences relative to treatment as opposed to the particular treatments undergoing clinical research that are common in other frames. A 2001 article, *'I'm one of the lucky ones. I'm still alive'*, describes the patient's surgical scars. The 2003 article *Mother fights smoking with her dying breath* on Barb Tarbox, relates:

> That day, Ms. Tarbox, painfully thin and slurring her words, was speaking to about 1,100 students at Louis St. Laurent Catholic School. She spared no details. She showed the students her bald head and said it soon would be pockmarked by indentations from the growing tumours working their way through her skull. She produced her radiation mask and passed it around. She said she couldn't eat and showed the IV bag that is her breakfast, lunch and dinner.

These articles thus relate the impacts of biomedical treatment on the individual and underline the dominance of the biomedical institution in these personal experiences of the disease.

With further regard to the Patient experience theme, as was previously mentioned many articles identified the patient's smoking statuses, conflating the link between smoking and cancer. A 2005 article, *ABC's Jennings battles lung cancer*, relates: ""On good days, my voice will not always be like this," he promised, acknowledging that he fell back into smoking after the terrorist attacks of Sept. 11, 2001." With regard to Chuck Strahl's lung cancer diagnosis, a 2005 article, *Strahl stricken with cancer*, relates: "A worker in Mr. Strahl's constituency office in Chilliwack said the MP is not a smoker and to the best of her knowledge has never been one". Articles often described a patient's lifestyle prior to developing the disease, thus highlighting the behavioural contribution to disease in discussions of the individual experience of lung cancer.

Finally, within the Patient experience theme, there was also the discussion of death. In a 2005 article, *'Thread of hope'*, a physician relates his experience with his patient:

> After more than two years of reasonably good survival from her lung cancer, Jackie began to deteriorate. I asked her if she would like to be resuscitated when her heart stopped, and she said no. She knew she was dying. Had I done a good job with Jackie? I took some solace from the fact that as death approached, she did not appear to regret her earlier hopeful predictions.

Indeed, the Patient experience theme often accounted for the potential of death, pointing to lung cancer's relationship with this theme in an individual context. As mentioned earlier, the Patient experience theme was most common in 2005, when there were many celebrity diagnoses. The reduction in reports on celebrity diagnoses contributed to the frame's decrease.

5.1.2 Additional frames.

Thirty-one articles featured only the Socioenvironmental frame. Articles that featured this singular frame focused on fundraising initiatives, lawsuits or patient experience, thus focusing on the social context of the disease. Others were risk reports on cancer statistic updates or

epidemiological research, rooted in the socioenvironmental context, and did not include discussion of biomedicine, contests over policy and legislation, or behaviour.

Thirty-four articles featured a subordinate Biomedical frame, many of which focused on the patient experience against a backdrop of biomedical diagnosis and treatment. For example, a 2005 article, *Ames quietly grabs a share of the lead*, reported on Stephen Ames' experience with his wife's lung cancer diagnosis, thus focusing on the social aspect of the disease. The subtext of this article is concerned with Ames' wife biomedical diagnosis and treatment, therefore pointing to the Biomedical frame that is an undercurrent in the lived experience. Other articles that featured this frame examined epidemiological research, such as rates of lung cancer in women, and speculated on the biological causes of the disease. This particular relationship highlights that epidemiological research is often a precursor toward what might be considered a biological, and thus more thorough, understanding of a risk relationship.

Another 31 articles featured a subordinate Behavioural/Lifestyle frame. As mentioned, in articles that discussed a patient's diagnosis, their lifestyle was often described, including their smoking status. In some articles that discussed tobacco company lawsuits, alternative frames around smoking were often explored, and these articles would often feature the tobacco companies' position regarding smoking as a behavioural choice. This particular discussion points to the attempts of tobacco companies to negate the framing toward social effects and redirect attention to a behavioural understanding of the disease.

Only ten articles featured a subordinate Structural/Critical frame. Theses articles tended to mention that government legislation could counteract environmental exposures to lung cancer. For instance, a 2002 article, *City air raises risk of cancer, study says,* reports the inconclusiveness of an environmental report about smog levels. The article's main focus is on

the epidemiological research into the effects of smog, but some attention is given to the role legislation could play in protecting health. Such a distinction highlights the divide between two frames, where the Socioenvironmental frame focuses on the cause of the disease, and the latter deliberately advocates for legislation as a prevention mechanism. Importantly, the Structural/Critical frame was not present in articles on celebrity cases of lung cancer, therefore pointing to the missed opportunities to make critical connections to these diagnoses.

5.1.3 Tones.

The tones of the articles in the Socioenvironmental frame were distributed as follows: 27.0% were Optimistic, 33.7% were Pessimistic and 39.3% presented a Neutral/Mixed tone, thus generally on par with the overall averages (32.1%, 27.9% and 39.9%, respectively). Those articles that were optimistic generally positively portrayed the patient's perspective on his/her prognosis. For instance, in discussing his outlook, Chuck Strahl is quoted in a 2005 article, *Strahl stricken with cancer*:

> Cancer is a serious disease … but those of us diagnosed with cancer don't want to be rushed off the playing field and sidelined any too soon. I'll be in there sluggin' for now, and much of what comes up will be simply business as usual.

Other articles looked positively toward better epidemiological understandings of risks for lung cancer, as well as social interventions such as fundraising initiatives or lung cancer prevention efforts, thus highlighting society's focus on improved understanding of and minimization of risk.

Those articles that were Pessimistic focused on the disease's high incidence and deaths rates, relating its' burden on society, while others were critical of the causes of the disease. One article showed that researchers were frustrated by their lack of understanding of risk. The 2007 article, *The good news and the bad news about pot*, posits:

> Using statistics from both the United Stated and Sweden, the research team found that about 8 per cent of lung cancer cases in males and close to 20 per cent of cases in females are among "never-smokers." So, why does lung cancer seem to pick on women?

> "We just don't know," said Heather Wakeless, the lead researcher at Stanford University School of Medicine in California.

In tandem with the Optimistic articles that are positive toward disease risk understanding and mitigation, this article specifically highlights the pressure of late modernity to mitigate disease risk, drawing out the negative tone toward the lack of knowledge.

Those articles that presented a Neutral/Mixed tone generally included mixed perspectives as outlined above. For instance, as in Negative articles, articles were negative toward the cause of lung cancer, such as tobacco company duplicity, smoking/SHS, or asbestos, and as in Optimistic articles, were optimistic toward population health efforts to prevent smoking uptake or carcinogenic exposures, fundraising and social/patient support efforts. Other articles presented mixed tones regarding a patient's prognosis. For instance, in the 2005 article, *Lou Rawls suffering from lung, brain cancer,* the singer is quoted, "Don't count me out, brother. … There's been many people who have been diagnosed with this kind of thing, and they're still jumpin' and pumpin'." Meanwhile, his ex-wife reported, "By his doctor's admission, he is not expected to live much more." This particular article highlights an interesting dynamic between the patient and physician's perspectives, which will be discussed later.

5.1.4 Social actors.

The final consideration for the Socioenvironmental frame is the role of various social actors involved in its emergence. In all there were 140 actors quoted in the 89 articles and thus, the average number of actors quoted (1.6) was slightly more than the overall average (1.4). Twenty-five articles (28.1%) did not quote any social actors. Those articles tended to briefly refer to lung cancer within a much larger report on population health or they were shorter articles on a patient's diagnosis, lawsuit verdicts or epidemiological research. In the articles that did quote actors, the most common actors were as follows: Family/Friends were quoted 30 times

(21.4% of quotes), followed by the Patient (celebrity and non-celebrity combined), Socioenvironmental expert and the Government official with 20 quotes each (14.3% each).

In articles where Family/Friends were quoted, they generally commented on a patient's diagnosis and/or death, rather than acting as disease advocates. Indeed, only a handful of Family/Friends acted as the latter; For instance in the 2007 article, *No money for a miracle*, the article discussed families' initiatives to provide an unregulated medication for their family member with the disease. In the former regard, in the 2005 article, *ABC's Jennings battles lung cancer*, his former wife refers to him as follows:

> He's always been an incredibly good athlete, lived a healthy life, but I remember we were smoking du Mauriers back in the '60s. … But he's an amazing, gutsy man. He begged to go to Vietnam. He always begged to go to where the action was. If he wants to beat it, I'm sure he'll beat it.

In this case, the family member referred to the patient's good constitution in light of the difficult diagnosis, and these types of quotes were much more common. The greater number of quotes of friends and family as opposed to the patients themselves is arguably related to the practical consideration of there being more of them and only one patient, as well as the high death rate of patients from lung cancer. For example, in one article which examined the development of lung cancer from workplace exposure to asbestos, *Dying for a living*, three widows were quoted about the deaths of their husbands from lung cancer and mesothelioma.

In those cases where Patients were quoted, most often they were celebrities commenting on their own experience with the diagnosis and expected outcomes, as opposed to acting as advocates. Therefore, the focus was on their individual experience rather than unifying experiences of lung cancer patients and pointing to macrological considerations. For instance, in the articles that reported on MP Chuck Strahl's diagnosis as a result of asbestos exposure, the patient was never quoted on his political position on the substance. There were thus often missed

opportunities on the part of celebrity patients and their families to critically explore issues around the causes and prevention of lung cancer. As mentioned, the celebrity quotes decreased over time, as there were fewer reports on celebrity diagnoses.

Articles that quoted non-celebrity patients, however, contributed a human example to a larger story. For instance, in the 2002 article, *Employers must help addicts kick the habit*, a former patient says, "I worked at a hospital for five years ... they never said anything as long as I smoked outside the perimeter." The article then went on to discuss the need for employers to support smoking cessation to prevent lung cancer. The patient quote therefore provided context for the story on the importance of social intervention. There were thus some instances of connecting the lived experience to more macrological considerations.

Despite the typically singular focus on their disease, sometimes celebrity patients challenged the biomedical institution and Biomedical experts. In addition to the Lou Rawls example mentioned above, Paul Quarrington wrote in 2009, *Each day like it's my last,* of his experience to take a trip to Northern Canada while undergoing treatment as follows:

> I spent a few weeks trying to convince people that the voyage was a good idea. The doctors, for example. "Where are you going?" "Well, we board the ship in Kuujjuaq. But then we're heading for some places that are pretty remote." Various objections were raised. For example, my condition makes me susceptible to hypercoagulation, which means that, for example, on the plane to Nunavut I could develop a blood clot and then subsequently throw an embolism and then subsequently die. Way way way sooner than I thought. But I was pretty adamant about my desire to go on the trip, although if you'd pressed me at the time, I don't think I'd have been able to say why. I think this sort of thing is good for me, indeed, music and performing has been the basis, thus far, of my idiosyncratic therapy. On a purely physical level, I think it's good for me to bellow for three or four hours in a row. It seems pretty logical; if one's left lung is all mucked up, covered by a squamous sessile tumor, why not get some air down there, shake things up a little bit? I recall one visit to the doctor's, where some member of my support team … asked, "Paul sings a lot. Should he be doing that?" "Well," the doctor answered seriously, "there's been very little research on the relationship between singing and lung cancer." That seems odd to me.

Overall, however, there were few challenges to the biomedical institution, pointing to the general acceptance of clinical care of the disease.

The Socioenvironmental expert most often commented on the outcomes of their epidemiological research, thereby reinforcing their authority and the need for continued research into risk. A few Socioenvironmental experts, however, acted as advocates for social change by promoting population health interventions for smoking cessation, while only one criticised tobacco companies for targeting women in their marketing tactics. Similarly, some articles featured the Government Official as an expert, where researchers commented on their own research or changing cancer statistics. In a few other cases, though, the Government official acted as an advocate for social change. In the article, *'Everybody smokes' attitude goes with the territory; Nunavut 'a generation behind' on controlling cigarettes* from 2009, the Socioenvironmental expert comments on the 90% smoking rate in the territory, while a Government Official responds, "When 60 to 80% of people smoke, you're surrounded by tobacco: it's accepted, it's normal … It will take a huge effort to turn that thinking around, the attitudes that support that. You have to change the culture of smoking." Finally, in only a few instances, were Government officials quoted on the official position on various substances. For instance, in the 2003 article *Diesel exhaust particles increase cancer risk*, the official responds to a study on the increased cancer risk by stating that the science had not yet matured. Thus, in the Socioenvironmental frame, the Socioenvironmental expert and Government official acted in harmony, promoting expertise and sometimes acting as advocates, and only sometimes was the latter called on to defend the official government position. As will be discussed in the Discussion section of the chapter, the differences in discourse between Family/Friends and Patients as

focused on individuals compared to the Socioenvironmental expert and Government official focused on socioenvironmental risk points to an overall distinction to be made within the frame.

5.2 Biomedical Framing

The Biomedical frame was the second most dominant frame, featured in 88 articles (28.6%). In terms of word length, these articles were on average shorter at 606 words per article, as compared to the overall average of 740 words per articles, but more articles had a high emphasis on lung cancer (65.9% vs. 49.0%). Thus, even though the average word length was shorter, as nearly two-thirds of the articles focused primarily on lung cancer, the actual coverage of the disease was arguably greater than the other frames.

5.2.1 Themes.

The most common themes present in articles with a dominant Biomedical frame were the Biomedical research (75 articles), International (65 articles), Treatment (56 articles), and the Pharmaceutical/Biomedical device development (50 articles) themes. As with the Socioenvironmental frame, lung cancer was often discussed in terms of international research, in this case, with regard to the secondary prevention of the disease via clinical care. Many of the articles subsequently mentioned featured the International theme, thus once again pointing to the interconnectedness of the world's access to information as well as the research community.

A prime example of an article with a dominant Biomedical frame is the 2001 article *Cancer test could save millions* that describes a new biomedical device for the early-stage detection of lung cancer, which experts argued could lead to better survival as a result of surgical treatment prior to metastasis. Furthermore, the article highlights how a biomedical device company aimed to bring the product to market. Thus the article contains the Biomedical

research, Treatment and Pharmaceutical/Biomedical Device development themes. An optimistic Biomedical expert states:

> Because the survival rate can change from one in 10 people surviving ... to seven or more surviving five years by detecting it early, it could have a huge impact on survival from lung cancer. … In fact, early detection could be the biggest impact of any treatment [technique] for lung cancer over the last 50 years.

The quote exemplifies the frame's focus on biomedicine through the early detection and subsequent treatment of lung cancer.

Other international research examined the biological implications of various risk factors such as smoking, estrogen, and pollution, or examined the genetic profiling of at-risk patients, particularly smokers. Such an example includes the 2002 article *Blood test can determine risk for lung cancer*, which discusses an Israeli-developed test to determine which smokers are at risk for the disease. This is but one example of the several reports on international, biomedical-based research into lung cancer risk. The focus on biology points to the objective understanding of the human body in an attempt to comprehend genetic predispositions of the disease.

Indeed, many articles from the first half of the decade examined the potential of several different genetic profiling and diagnostic tests, as well as emerging lung cancer treatments. Products from Canadian companies like Biomira, IMI, and QLT and internationally based companies liked Isis, OSI, and Roche, were featured in several articles from the decade's first half. Interwoven with these articles, however, are those that report on the failure of new treatments; AstraZeneca, Inex, Isis, QLT, Roche and more all saw disappointing results with their various treatments. One product, Iressa, had even received marketing approval and was withdrawn from the market as reported in the 2003 article, *AstraZeneca lung-cancer drug linked to 173 Japan deaths*. A recent 2010 article, *Copper sulfates can kill microbes* reported on the

failure of a shark-cartilage derived treatment for the disease, highlighting that researchers were still seeking optimal treatments at the end of the decade.

Another set of disappointments in the Biomedical frame is evidenced through the failure to find a routine screening procedure for lung cancer. The 2007 article, *CT scans don't cut smokers' deaths from lung cancer* highlights the disappointment:

> Some experts have hopes that CT scans, which are a special kind of X-ray that can detect tiny lung abnormalities, would prevent lung cancer deaths by getting people into treatment earlier. But the latest research doesn't support that hope. … "We don't see a trace of evidence that a single life was saved, that a single case of advanced cancer was avoided," said study co-author Peter Back of Memorial Sloan-Kettering Cancer Center in New York.

Indeed, articles from 2008, entitled *Researchers seek lung cancer test* and *Rising lung cancer rates in women call for new screening methods*, point to the fact that in the second half of the decade, researchers were still seeking optimal ways to screen for and detect lung cancer. Unlike other cancers where screening and treatments arguably contributed to increased survival as evidenced by changing cancer rates (see CCS, 2010), at the end of 2010, biomedical experts in lung cancer were still seeking ways to reduce the burden of the disease through biomedical advancements. Because promising new diagnostic tests, screening procedures and treatments were not reported as often, coverage of lung cancer within the Biomedical frame subsequently decreased in the second half of the decade.

5.2.2 Additional frames.

In the majority of cases the Biomedical frame was the only frame in an article (50 articles). These singularly framed articles tended to focus on pharmaceutical treatments, biomedical device developments, and genetic profiling, thus focusing on clinical care and the biological understanding of disease. The predominance of the Biomedical frame to appear alone

points to its basis as a normal way through which to understand disease. In other words, the frame does not need support to be resonant with audiences.

In the balance of cases, the Behavioural/Lifestyle frames appeared in 24 articles, the Socioenvironmental frame in 20 articles and the Structural/Critical frame in 12 articles. In those articles that featured the Behavioural/Lifestyle frame, articles often looked at research into the biological understanding of a particular behavioural risk or preventative factor such as smoking, marijuana smoking, and/or diet. The connection between the Biomedical and Behavioural/Lifestyle frames is based on the understanding of disease occurring in the individual body and influenced by individual behaviour. For instance, the 2008 article *'Double-whammy gene' deals smokers a biological blow* describes the potential for genetic predisposition toward smoking addiction and difficulty in stopping that might impact one's development of the disease. The article thus framed lung cancer within a biomedical context of research into the genetics behind smoking addiction, while also framing lung cancer within the context of smoking behaviour. Indeed, smoking behaviour was the most prevalent behavioural risk mentioned in Biomedical articles, thus serving to further conflate it with lung cancer.

Of those 20 articles in which a Socioenvironmental frame was present, the biomedical discussion was often linked to the societal burden of the disease in terms of incidence and deaths in men and women. For instance, in *It's a boy: male chromosomes have that little extra oomph, scientists speculate*, the 2005 article prefaces the discussion of applying the aromatase inhibitor class of drugs to block estrogen production in lung cancer patients by saying: "Being diagnosed with lung cancer, more often than not, is like getting a death sentence. This year, an estimated 22,200 Canadians will be told they have lung cancer, and 19,000 Canadians will die from it."

The Socioenvironmental frame thus provided context and rationale, and strengthened the claims of the need for biomedical research to reduce the burden of the disease.

Other articles that included a Socioenvironmental frame looked at the biological effects of environmental exposures such as SHS, pollution and asbestos, highlighting a transition from epidemiological to biomedical research. A few others discussed society's role in promoting and sustaining certain behaviours, like dietary choices or marijuana/tobacco smoking, or reported a patient experience. An example that includes all three types of discussion is found in the 2004 article *Estrogen raises cancer risk for women*. The article highlights the different biologically based manifestations of lung cancer in men and women and the biomedical expert is quoted as follows, "Genetic, metabolic and hormonal factors are all important to the way women react to carcinogens and lung cancer". Thus the article opens with a dominant Biomedical frame. The article then shifts into a Socioenvironmental frame that on a former waitress who developed an adenocarcinoma as a result of SHS exposure. She states, "I never tried smoking, even once, but I was around smokers most of my life … There was no way I could avoid it and stay employed." The article thus discusses the cancer in terms of socioenvironmental risk as well as the lived experience of the patient. The article concludes with a discussion of the increasing smoking rates among women in developing countries, due to increased tobacco marketing. Indeed, this article exemplifies tying the biological understanding of lung cancer to its socioenvironmental causes and implications, which were not discussed this thoroughly, or at all, in other articles.

Only 12 articles explored lung cancer within a dominant Biomedical frame that also featured a Structural/Critical frame. A handful of articles highlighted the focus on Biomedical detection and treatment, while also contextualizing the research advancements of the biomedical industry. For instance, the 2005 article *Roche defies biotech malaise: 'Personalized medicine'*

discusses the industry's shift toward 'personalized medicine' based on genetically tailored therapies dividing patients into specific biomedical categories. This article therefore discusses the improvements themselves as well as examines the structural development of the pharmaceutical/biotechnology industry. Four other articles discussed the implementation of new biomedical detection devices in the context of a healthcare system that lacks comprehensive screening. For instance, the 2002 article, *Country's 1st private CAT clinic to open,* describes how the Canadian government has been slow to embrace new detection technologies despite its clinical benefits. The focus therefore was on criticizing the government for delaying the improvement of the healthcare system through applying biomedical advancements. In all there was very little critical concern in the Biomedical frame, particularly toward the institution itself.

5.2.3 Tones.

Unlike other frames, most of the Biomedical frame articles were Optimistic in tone (62.5% vs. 32.1%), although the tone decreased over the decade from 66.7% to 54.8%. As mentioned earlier, these articles focused on the potential benefits of improved genetic profiling, early detection and screening methods, as well new pharmaceutical treatments. These articles used words like "breakthrough", "hope", "cure", "success" and "positive results". Importantly, many of these articles related the benefits for the companies developing treatments and devices, rather than the patients. For instance, in *Roche expects sales boost after lung cancer trial*, a 2005 article, the report begins with the following statement:

> Sales of Roche Holding AG's cancer drug Avastin could get a $1.5-billion (I.S.) boost after the successful colon cancer medicine was found to extend the life of people with lung tumours, analysts said yesterday.

The focus is thus on the potential positive outcomes for Roche, rather than the patients who will be affected by the improved treatment. Those optimistic articles from the second half of the decade examined some new detection and treatment options, but more often reported on

improvements in genetic profiling. The overall optimism of the frame points to how biomedicine is seen as the positive and hopeful route through which to control lung cancer and prevent death.

Those articles that were Negative in tone (21.6%) increased in proportion over time from 19.3% to 25.8%, therefore more closely resembling the overall average of 27.9%. Negatively toned articles generally reported on failed pharmaceutical treatments and biomedical device developments, and featured key terms liked “pulled the plug”, “halt”, “stop trials”, and “setback”. In combination with the Optimistic articles, a polarized discourse is revealed in the Biomedical frame, where reports were generally positive or negative with little middle ground. Again, these articles often focused on how the results impacted on the company, rather than on the patients. For instance, the 2003 article, *QLT to halt trials on new cancer drug*, states:

> It has spent US$20-million on the development of tariquidar. If the two Phase III trials, which are designed to evaluate if an experimental drug is safe and effective, were halted, the company said it would save US$10 million.

Thus the article focuses on the financial aspect of drug development, rather than patient outcomes. Other negative articles discussed unknown biological risks that might be associated with developing lung cancer, such as the role of estrogen as a female risk factor. Like in the Socioenvironmental frame, the articles were negative toward the lack of understanding of the disease, and cited the need for further research.

Articles that presented a Mixed/Neutral tone (15.9%) increased over time from 14.0% to 19.4% of articles, but its presence was less than the overall average of 39.9%, pointing to the polarized discourse. These articles either discussed multiple viewpoints or recontextualized a particular outcome to favour the biomedical institution; For instance, in *Isis's lung-cancer drug fails late-stage trial*, the article’s tone is negative toward the particular treatment, but is optimistic toward gene therapy’s potential to improve lung cancer outcomes, therefore reasserting biomedicine as the route through which to control lung cancer.

5.2.4 Social actors.

The final consideration for the Biomedical frame are the social actors quoted and the roles they played in frame's emergence. In all there were 122 actors quoted in the 88 articles and thus, the average number of actors quoted was on par with the overall average (1.4 vs. 1.4). Twenty-three articles (26.1%) did not quote any social actors. The articles that did not quote any actors were generally shorter in length and briefly reported research results of biomedical device and treatment developments, while mentioning profits for their companies.

In the balance of articles, the most commonly quoted actors were as follows: The Biomedical expert was quoted 62 times, followed by the For-profit representative (33 times) and the Non-government/Non-profit representative (9 times). The Biomedical expert was thus quoted nearly twice as often as the next most common social actor type. In articles where the Biomedical expert was quoted, the expert often acted as an authority, commenting on his/her own research or supporting another expert's work. For instance, in a 2001 article *How much mucous can benefit humanity*, a researcher discussed the actions of mucous as a biomarker for lung cancer detection, thus pointing to the institution as the authority on the disease's biology.

As experts discussed the rationale of their research as leading to improved healthcare outcomes, they also often advocated for continuing biomedical research:

> "Further study could help us to understand the mechanism by which the changes occur", said Dr. MacAulay. "If we are able to identify the genes that are altered and understand more about how that happens, it's possible we can learn to reverse or mitigate the risk." (*Ex-smokers still playing Russian roulette: study*, 2007)

> "A screen needs to be simple, safe, accessible and affordable," Victor Ling, scientific director of the Terry Fox Research Institute, said in an interview. "We don't have that now." (*Researchers seek lung cancer test*, 2008)

> "My vision is that people could be screened using our test and warned if they had a risk," Professor Zvi Livneh of the Weizmann Institute told the Times. "What is really striking about our results the extra risk you get from poor DNA repair. When I talk to doctors, they say that general warnings about smoking aren't taken seriously. People don't think it

> applies to them. But if you added something really personal, like saying that a person's risk was 100 times higher, then you have a much more effective way of persuading them to give up." (*Blood test can determine risk for cancer*, 2003)

These statements show how Biomedical experts state the relevance for real-world application as well as assert the need for continued research. The first two experts point to detection and treatment, reinforcing the biomedical institution's role in the disease. The last expert identifies that biomedicine's improved understanding of lung cancer risk should compel individuals to stop harmful behaviour and thus prevent disease. Importantly, the focus is on biomedical research leading to behavioural prevention rather than societal or legislative measures to prevent the disease, highlighting the connection between the Biomedical and Behavioural/Lifestyle frame.

With regard to commenting on others research, the 2006 article, *Cancer: The nose knows,* reports on research into an unconventional lung cancer detection test in which dogs sniff the potential patient's breath. Independent biomedical experts weighed in on the study as follows:

> … experts who read the study could not find any obvious fatal flaw in its methodology, and the idea that dogs can detect cancer is "not crazy at all," said Dr. Gansler, director of medical content in health information for the American Cancer Society. "It's biologically plausible," he said, "but there has to be a lot more study and confirmation of effectiveness." Dr. Berry, too, was interested but suspicious. "If true, it's huge," he said. "Which is one reason to be skeptical."

The article highlights the reluctance of the biomedical community to accept unconventional research and the need for consensus and confirmation in the community. It also highlights the balance and reinforcement that experts give to one another's research endeavours, where they either validate or invalidate one another's claims.

Only a few disagreements arose among Biomedical experts in the Biomedical frame. One controversy occurred around screening. In the 2006 article, *Scans detect lung cancer sooner*, one physician relates about lung tumours: "When you find it when it's small, you can essentially cure most of them." But another physician countered that screening can lead to over-diagnosis: "They

need to know that the chances are good that something abnormal will be found which could lead to false alarms." Another researcher mitigated the disagreement by stating, that the study is a "provocative, welcome salvo in the long struggle to reduce the tremendous burden of lung cancer on society," thus reinforcing the importance of the biomedical institution in determining the best course of action for the disease. As such, realms of uncertainty are revealed within the community. Yet, as the variety of actors represented in this frame illustrates, Biomedical experts most often held debates among themselves, without contests from other social actors.

Articles that quote the For-profit representative tended to either quote the CEO or another representative of a pharmaceutical or biomedical device company on its latest product, or a financial analyst who provides their predictions for a company's economic successes. For instance, in the 2002 article *Inex investors react as test data reported*, a financial analyst comments on poor tests results for a new delivery device in non-small cell lung cancer:

> Inex isn't trying to invent a drug but improve on an existing one. … As long as it shows better or equivalent efficacy and a better safety profile than vincristine, Inex should get a component of these markets.

In this respect, the social actor is addressing investors and focuses on the treatment profile of the medication, while patients are referred to as market segments. Sometimes the Biomedical expert commented on such developments, to draw attention to the importance of the treatment or device in improving clinical care. For instance, in *Xillix looks to next generation*, a 2002 article, a physician comments on a clinical detection device in preventing the spread of cancer:

> "If this dysplasia is not treated, it will develop into high-grade cancer", said Stephen Lam, an internationally known physician who co-developed the fluorescence technology at the British Columbia Cancer Agency, leading to the creation of Xillix in 1990.

In this respect, the Biomedical expert lends credibility to the product claims made by the detection device company. The For-profit representative thus benefitted from the support of the Biomedical expert, while strengthening each other's claims to improve disease outcomes.

The Non-profit/Non-government representative was often a representative of a biomedical association releasing position statements on particular risk factors, or a representative of cancer societies issuing comments on new research. For instance, in the 2002 article, *There's a reason they call it getting wasted*, Dr. Richard Russell, a respiratory specialist who also acts as spokesperson for the British Lung Foundation, states:

> We have the evidence of cannabis and its dangers. … What we really want to avoid is the situation we had in the 1930s, '40s and '50s with cigarettes, where doctors were recommending tobacco as being good for you.

This Non-profit/Non-government representative therefore takes an authoritative position on the biological risk presented by marijuana, having made an evidence-based decision. With regard to commenting on research, the Non-profit/Non-government representative often supported the Biomedical expert's research and authority by commenting on its' important contribution to understanding of the disease. Only in one case did the representative seek to challenge the institution's focus on treatment. In the 2001 article, *Simple spit test may eventually detect early-stage lung cancer, researcher says*, the director of Cancer Control Policy at the Canadian Cancer Society states:

> "Finding a screening test for lung cancer is very important, but it's probably too early to say how significant this particular test will be," Barbara Whiley, director of cancer-control policy at the Canadian Cancer society, said in an interview. … Dr. Whiley stressed that while a screening test would be helpful in it's treatment, new technology should not overshadow the fact that the disease is almost entirely preventable. "There is no question that the best way to deal with lung cancer is for people not to smoke or be exposed to second-hand smoke," she said. "If we could achieve that goal, we would eliminate 80-90 per cent of all lung cancer, and that should be our priority."

Dr. Whiley's response recontextualizes the need for improved screening and treatment for lung cancer to point to primary prevention programs focused on smoking as the starting point for a discussion on lung cancer. Indeed, as mentioned, the Biomedical frame and the actors therein focus on the former, at the expense of discussing the latter.

5.3 Structural/Critical Framing

The Structural/Critical frame was tied as the second-most dominant frame, with 88 of 308 articles (28.6%) featuring this frame type. The frame is founded in a critique of the issues around lung cancer with particular attention on public policy change, and is thus concerned with the organization and distribution of political resources (Bryant, 2009; see Appendix B). The articles that feature this dominant frame are the longest in word length as compared to other frames, with an average of 877 words per article as compared to 740 words. About a two-fifths of the articles (40.9%) had a high emphasis on lung cancer, which is less than the overall average. Thus, despite the articles' longer length, the majority explored issues other than lung cancer.

5.3.1 Themes.

The most common themes mentioned in the Structural/Critical frame articles were Smoking/Non-smoking (46 articles), International (43 articles), Prevention (32 articles), Death (28 articles), Healthcare system management (27 articles), and Treatment (27 articles). As with the Biomedical and Socioenvironmental frames, the International theme was an overarching theme discussed in such contexts as: International research, the comparison of Canadian to US healthcare, particularly with regard to the availability of PET scanners in public versus private systems, Canada's exportation and promotion of asbestos use abroad, and as will be discussed next, the role of government in regulating SHS exposure.

Articles that discussed Smoking/Non-smoking in the Structural/Critical frame often discussed legislation around SHS exposure. Whereas early articles in the Socioenvironmental frame focused on SHS research, these first half of the decade articles argued in favour of Canadian legislation to protect non-smoking workers and others from SHS. For instance, the case of Heather Crowe, the never-smoker who developed lung cancer through her waitressing

work drove attention to banning smoking in restaurants and bars through her activism. A 2006 article that chronicles the end of her journey, *I need to be able to get my message across*, relates:

> … Ms. Crowe said she hopes her award will help others in the industry and convince legislators to ban smoking in all restaurants and bars. "I want to increase awareness, and I want workers in the industry to have some protection if they do happen to get sick," she said. Asked if she felt restaurants should voluntarily begin closing their smoking sections, Ms. Crowe said she believed it was time that "legislation takes over."

Her criticism focused on the need for government legislation to protect workers and prevent lung cancer. Other articles offered a completely different perspective, arguing that governments such as the federal US government manipulated statistics regarding the potential harmful effects of SHS to enact useless legislation. In a 2003 article from the *National Post*, *The second-hand smoke myth: junk science's greatest triumph*, the editorialist writes:

> After 20 years of failing to link ETS with significant heart and lung disease, one would think that it is time to calls it quits on public smoking bans, or at least to acknowledge they have nothing to do with health but merely with the desire to avoid the nuisance of second-hand smoke. … None of this will, of course, happen for the ETS junk science crusade, like all junk sciences has nothing to do with science but everything to do with manipulating the public's perception of reality for ideological ends.

This is one example of criticism toward the government, arguing the legislators fabricated the risk of SHS. A similar claim is made in a 2010 editorial, also from the *National Post*, *What scientists don't tell you about abortion*, where the author points out that legislators are apt to prefer legislating on some risks, such as SHS and lung cancer, but ignore other relationships such as abortion and an increased risk of breast cancer. There were thus many articles focused on challenging the government and contesting its role in preventing the disease through legislation.

Like in the Socioenvironmental frame, other articles that mentioned the Smoking/Non-smoking theme often mentioned smoking as a reference point for their discussion on other topics, such as the risks posed by pesticides, pollution and radon. For instance, two articles on the need for improved guidelines around radon exposure mentioned that it was the leading cause

of death from lung cancer after smoking. Other articles pointed to the link between smoking and lung cancer as the cornerstone example around which epidemiological research is based. In this respect, some articles had very little focus on lung cancer, and it was often cited as a reference point for other, broader discussions. Furthermore, using smoking and lung cancer as a reference serves to conflate the relationship without any critical examination of the relationship's nuances.

Importantly, a few articles critically examined the need to support lung cancer patients. These articles explored the social stigma reported on in the Socioenvironmental frame. In the 2008 article, *Abortion, gunshot wounds, lung cancer: Who pays?*, the editorialist criticises those who favour providing public healthcare services based on a "moral litmus test". They argue that Canadian health services are based around providing medically necessary services, regardless of the cause behind the services needed, such as lung cancer caused by smoking. Similarly, in a 2004 article, *Why aren't we fighting for lung cancer patients?*, the same editorialist writes:

> Regardless of what you think about smoking or smokers, nobody deserves to die of lung cancer. No patients in our health-care system deserve second-class care, or to be treated as expendable. Prevention is the best strategy for tackling the epidemic of lung cancer in the long term, but it should not be the only strategy. Smoking is an addiction, one that can cause this creeping, insidious disease called lung cancer (not to mention chronic obstructive pulmonary disease, heart disease and other nasty health problems). No purpose is served by stigmatizing and demonizing those who have been afflicted with lung cancer - whether or not they have smoked.

These articles point toward an overall social responsibility in caring for lung cancer patients, arguing for a reduction in stigma that influences prevention and care. Interestingly, the latter article refers to lung cancer as an "epidemic", bringing to mind an alarming need to manage the burden of the disease. Lung cancer was only referred to as an epidemic in ten articles, and most often with regard to asbestos use rather than to the overall burden on society. A few other articles offered social criticism by examining why some behaviours such as alcohol consumption are lauded, while others like smoking are vilified. There were, however, only a handful of these

articles that criticised the social stigma of the disease and argued for providing medically necessary services to lung cancer patients with a dual focus on prevention.

A handful of articles discussed changing tobacco policies, such as the 2005 article, *Big bump in tobacco tax urged to combat cancer*, which reviews implementing higher taxes to curb tobacco use. As such, legislation was seen as a preventive solution to deter behaviour. Only two articles examined the legality of tobacco products altogether, such as the 2007 article, *We need more tobacco like a hole in the head*, which criticised the availability of a new tobacco product, Snuz. The dearth criticism of the legality of tobacco products points to a missed opportunity to critique an important cause of lung cancer. Nonetheless, the varied critical discussion of SHS legislation, social responsibility around smoking and lung cancer, and tobacco legality points to the theme's importance in the critical discussion of the disease.

Prevention was the third most common theme in Structural/Critical articles. One critical 2001 article, *Everything causes cancer – so relax*, examined how all substances and activities can potentially be connected to some kind of disease risk. The article opened with a report of an epidemiological study that demonstrated that incense burning was linked with an increase risk of lung cancer. The article then pointed to the media as exaggerating disease risk:

> "The things that we can do to prevent cancer are incredibly boring," says Dr. Buckman, a professor of medicine at the University of Toronto. "If you can demonstrate that something everybody does has a chance of increasing one of the rare cancers, whether it's true or not, you sell newspapers. It's exactly like Jaws ... In which the premise is going swimming can lead to your death by shark attack."

The article goes on, tongue-in-cheek, to say that people should no longer live in their homes because of potential exposure to radon that might cause lung cancer. This article is practically unique in its criticism of the media and research's focus on risk; Only one other article criticised the media's inflation of disease risk.

Most other articles were more earnest in their advocacy for the prevention of lung cancer through legislation, particularly with regard to asbestos. Many articles were critical of the Canadian federal government's continued promotional efforts of the use of asbestos abroad, stating that the body was protecting a harmful industry at the expense of thousands of lives. Whereas articles that focused on SHS legislation appeared most often in the first half of the decade, articles on asbestos were especially common in the second half of the decade and contributed to the frame's increase over time. The 2008 article, *A deadly Canadian export*, aptly summarises the debate and criticism as follows:

> According to the Rotterdam Convention's review committee, which assesses substances before they are listed under the convention, "chrysotile is unequivocally a human carcinogen." The World Health Organization (WHO) and other international agencies agree. Even Canada's government acknowledges that "all forms of asbestos fibres, including chrysotile, are carcinogenic." However, Canada argues that "chrysotile is a less potent carcinogen ... and consequently poses a lower health risk." In an argument redolent of the tobacco industry's playbook on light cigarettes, Canada defends chrysotile on the basis that it is safer than other forms of asbestos.

The article argues in favour of banning the substance, thus criticizing the Canadian government's continued support for the product. Indeed, the example demonstrates how the Structural/Critical frame often focused on government legislation as a preventive solution for lung cancer, and highlights the government's ability to intervene in disease.

In contrast to the articles that focus on legislation, a few articles critically examined the issue of behavioural prevention compared to treatment, where the emphasis on the latter was criticised with a need to focus on the former. For instance, in the 2010 article, *CT scans detect lung cancer earlier - but at what cost?*, the article discusses whether screening is the answer to the disease's burden or, given the exposure to radiation and false positives, rather than preventing smoking. Unlike the Biomedical frame articles that pointed positively to more

biomedical research, and as will be compared in the Behavioural/Lifestyle section where behavioural prevention is preferred, these articles are inconclusive about the best approach.

Many of the articles that focus on Prevention also mentioned Death. Like in the Socioenvironmental frame, death was sometimes mentioned to create context for an argument; the high lung cancer death rates provided a backdrop from which to argue a position such as particular legislation. Death was also mentioned with regard to increasing cancer rates, thus providing a platform for critics to argue that governments must prepare the healthcare system. This last point is discussed next.

Much of the critical discussion from the first half of the decade that included the Treatment and Healthcare system management themes focused on whether the Canadian government should allow private diagnostic services, particularly PET scans, to detect diseases such as lung cancer. The rationale was that PET scans would then lead to improved treatment and thus survival. The articles mentioned a particular benefit for lung cancer patients, but this benefit was overshadowed by a discussion of private versus public healthcare. Furthermore, the criticism occurred over whether the Ontario government should undertake clinical trials to show the benefits of the technology before incorporating it into the public system. Articles from the second half of the decade focused on the increasing number of cancer cases in relation to the management of the healthcare system and subsequent treatment and survival of patients. For instance, a 2008 article, *Cancer patients missing key surgeries: report*, criticises wait times for the surgical treatment of cancer that impacts survival rates. Notably, these types of articles increased over time, but lung cancer was only mentioned as one disease out of many and thus the emphasis on the particular disease decreased.

5.3.2 Additional frames.

Most articles that featured the Structural/Critical frame also featured other frames, although 14 articles (15.9%) did not feature any subordinate frame. Articles that presented only a Structural/Critical frame were primarily editorials that sought to argue a particular side of the debate around tobacco and SHS legislation, or sought to critically analyse the Canadian public healthcare system. Other articles were shorter reports on the need for legislation such as the need for increased tobacco tax. Forty-one articles (46.6%) featured a Socioenvironmental frame, 27 (30.7%) featured a Biomedical frame, and 24 (27.3%) featured a Behavioural/Lifestyle frame. That the Structural/Critical frame often featured other frames indicates that critical arguments were drawn from other frames to advance particular points.

Of those articles that featured a subordinate Socioenvironmental frame, most referred to the environmental causes of lung cancer, be it asbestos, pollution, SHS or radon. Therefore, the disease was grounded in an understanding of environmental risk, but the risk was predominantly discussed with regard to the need for legislation. Others criticised the Canadian government's preparedness to manage an increasing incidence of cancer cases and population health statistics were cited to lend gravity to the discussion. In contrast, only two articles criticised the social causes of the disease such as tobacco marketing while only a few more argued for the need for social support/stigma reduction around lung cancer. Other articles discussed the lived experience of the non-celebrity patient who was exposed to a carcinogen, to provide context for the criticism. For instance, in the 2001 article, *PM's bid to stop asbestos ban inspires protest by Chileans*, the article quotes a lung cancer patient who protests Canada's intervention in banning the substance in Chile. Therefore, like those articles in the Socioenvironmental frame that

featured non-celebrity patient experiences to support a discussion of public outreach, in these cases the patient experience was connected to calls for legislation.

With regard to those articles that featured a Biomedical frame, most explored issues around potential changes in the healthcare system and the use of PET scanners. The subtext of these discussions is based in the Biomedical frame where diseases such as lung cancer can be medically detected and treated. Nearly all of the articles in the first half of the decade discussed and favoured the provision of PET scanners for clinical care. In the second half of the decade, articles broadened to criticise the government on the lack of clinical research funding and strains on healthcare system delivery in terms of wait times. Once more, most of the articles supported the government's investment into improving biomedical care and any criticism was focused on delays in this regard. Indeed, only a few articles examined the biomedical institution's role in society, such as debating the importance of screening as compared to prevention, or examined the pharmaceutical industry's focus on profit. In the latter case, one article criticised the pharmaceutical industry's failure to develop a potential treatment for lung cancer because of the lack of patent protection. Thus, the primary critical angle around the biomedical institution was generally supportive of the institution and critical of government delays.

Finally, those articles that featured a subordinate Behavioural/Lifestyle frame discussed the need for legislation to limit smoking behaviour. Other articles sought to disprove the link between another risk and lung cancer, such as pollution, and thus pointed the finger toward smoking behaviour as the true culprit for lung cancer. Indeed, smoking and the relationship with lung cancer was given as an example for government action on other risk issues, such as abortion and the link with breast cancer, alcohol and other diseases, or the need for warning labels on vitamin supplements. These articles thus further conflate smoking with lung cancer.

5.3.3 Tones.

Unlike other frames, the tones of the articles were unevenly distributed: 12.5% were Optimistic, 27.3% were Pessimistic, and 60.2% were Neutral/Mixed. Optimistic articles tended to describes the benefits of legislation, as well as potential improvements in biomedical knowledge and treatments. Pessimistic articles were generally critical of (the lack of) government legislative policies on various risks, or toward the management of the Canadian healthcare system. Only a few articles were negative toward other institutions, such as the pharmaceutical industry's focus on profit, tobacco companies' production of a dangerous substance, or the prevalence of sensationalising risk relationships in the media.

As mentioned, most of the articles presented a Mixed/Neutral tone. These articles often combined the above optimisms and pessimisms where articles were critical of a particular risk, such as SHS or asbestos, and were positive toward legislation to reduce the risk. Other articles presented positive views toward advancements in detection technology and improved hospital management and were critical of the government's skepticism of implementing the devices and their overall management of the healthcare system. Indeed, as with the negative articles, the government was the focus of criticism and only a couple of articles critically examined tobacco or supplement companies for promoting potentially harmful products. For instance, the 2007 article, *Smokers have one more thing to quit*, states:

> For more than a decade, researchers have known that smokers who take vitamin supplements containing beta carotene are increasing their chances of developing lung cancer. Now an advocacy group wants to make sure the public is also aware that these tablets, normally touted as being good for health, can sometimes cause harm. The Washington-based Center for Science in the Public Interest is urging the U.S. Food and Drug Administration to introduce new rules requiring supplement makers to put warning labels on these products.

In fact, regulation and legislation were often seen as the solution to risk in the Structural/Critical frame, one mired in debate.

5.3.4 Social actors.

The final consideration for the Structural/Critical frame is the social actors in the articles that contribute to the frame's emergence. There were 145 actors quoted, for an average of 1.6 actors per article, which is slightly greater than the overall average of 1.4 actors, perhaps reflecting the focus on critical debate. Twenty-four (27.3%) articles did not feature any social actors, 12 of which were editorials, and the others did not feature quotes related to lung cancer. Of those articles that quoted social actors, the Non-government/Non-profit representative was the most commonly quoted (36 quotes), followed by the Socioenvironmental expert (32 quotes), and then the Government official (20 quotes).

Unlike in the Socioenvironmental frame where the Socioenvironmental expert and Government official acted in tandem, in the Structural/Critical frame, Socioenvironmental experts were critical of the government, particularly regarding its policy on asbestos, the provision of PET scanners in hospitals and with regard to healthcare system management. On the first point, the 2007 article, *Asbestos shame*, highlights the criticism from a University of British Columbia researcher as well as an independent environmental consultant:

> In an interview, Mr. Boyd said he feels that Canada's continuing export of "a deadly substance with profound public health impacts" is "unethical and immoral," but based on a desire of governments to win votes in Quebec. … "Anyone who says there's controlled use of asbestos in the Third World is either a liar or a fool," says Barry Castleman, a consultant who helped to advise Europeans in 2000 on Canada's unsuccessful attempt to overturn a French ban on Canadian asbestos.

These two Socioenvironmental experts are highly critical of the Canadian government's position on asbestos risk, as well as the lack of protection offered to workers abroad. In the same article, Natural Resources Canada (Government official) asserts:

> Canada has long advocated, at home and abroad, a responsible, controlled use approach to chrysotile asbestos … The implementation of domestic measures to ensure workplace health and safety is a sovereign responsibility of importing countries.

The official Government position is thus to defend its policy on the responsible use of the product. In many articles, however, the Government official is not quoted, and the focus remains on the Socioenvironmental expert's criticism, highlighting the privilege accorded to this actor.

The Non-profit/Non-government representative often acted in parallel with the Socioenvironmental experts by criticizing or calling for government action, particularly around PET scanners, cancer preparedness, SHS and asbestos. For instance, in the 2004 article, *'Not best use of tax dollars': doctors say*, an association representative says on the Ontario government's decision to test the PET scan's benefits:

> "We don't think it's the best use of taxpayer dollars to continue with this endeavour," said Dr. O'Brien…. "We believe the worldwide indications for PET that have been accepted in America, Australia and Europe should be the basis for implementing PET in Canada."

This representative accuses the government of wasting money in performing the tests. The Government official counters: "It has to be answered definitively ... once and for all whether or not PET scans are a more effective diagnostic tool than other technologies." This article is another example of the contested claims between Non-Government and Government officials. Thus, the main interactions in the Structural/Critical frame were focused on government criticism and response, revealing a debate around controlling risk in the legislative realm.

5.4 Behavioural/Lifestyle Framing

The Behavioural/Lifestyle frame was the least common dominant frame, taking precedence in just 43 of 308 (14.0%) articles. As mentioned, the frame is based on the idea that lung cancer is caused by or can be prevented through an individual's behavioural choices, rather than by environmental risks, societal pressures, biomedical intervention or legislative action (Bryant, 2009; Clarke, 2005; Clarke & Everest, 2006; Hust et al., 2006; Kwan, 2009; Lawrence, 2004; see Appendix B). These articles were the second longest in word length, averaging771

words per article compared to 740 words in the overall average. That said, only 30.2% of the articles had a high emphasis on lung cancer, the least of all the frames. Thus, despite the longer length of the articles, over two-thirds of articles explored lung cancer among other issues, which is reflective of the overall trend of longer articles having a lesser focus on the disease.

5.4.1 Themes.

The most common themes in the Behavioural/Lifestyle frame articles were Smoking/Non-smoking (39 articles), Prevention (24 articles), Socioenvironmental research (20 articles), and International (19 articles). Nearly all the articles mentioned the Smoking/Non-smoking theme and referred to smoking behaviour as the cause of lung cancer. For instance, articles that discussed population health trends linked the incidence and prevalence of lung cancer directly to smoking behaviour by describing increasing lung cancer incidence in women and decreasing incidence in men as directly related to changes in lifestyle patterns. In fact, the tendency to relate lung cancer statistics specifically to smoking behaviour increased over time, from two articles in the first half of the decade compared to four articles in the second half.

Some editorials also included the Smoking/Non-smoking theme. For instance, in the 2001 editorial *Free Advice*, the physician-author writes in response to a smoker's letter to the editor about CT screening:

> Smoking is a modifiable lung cancer risk factor. Instead of paying (whether it be taxpayers or personal funds) for an expensive test, why doesn't he just stop smoking and cut his lung cancer risk dramatically? If he doesn't have to pay for the cigarettes he smokes and the routine CT scans he wants to be done, he will be able to buy himself a nice mountain bike and perhaps prolong his life through exercise.

These articles thus describe Smoking/Non-smoking with the context of individual behavioural prevention, as opposed to secondary prevention through the biomedical institution.

Other articles discussed epidemiological research that included smoking patients. These articles focused on different variables in smoking patients, or smoking in different populations.

Importantly, these research articles were coded in the Behavioural/Lifestyle frame as they specifically commented on the behavioural aspect of disease contribution. For instance, in the articles *Smokers who take vitamin E are at risk*, the Socioenvironmental expert comments,

> … Dr. Slatore said the results should send a strong message that people shouldn't assume vitamins are a "magic pill" that can ward off disease. "For lung cancer especially, it would suggest that if you're going to keep smoking and hope that vitamins somehow protect you against cancer, that's not going to help you."

In contrast to the Structural/Critical frame that mostly examined Prevention through the lens of legislation, most Behavioural/Lifestyle articles focused on prevention through an individual's smoking behaviour, particularly in comparison to biomedical treatment. For instance, the 2001 article *DNA won't unlock life's big secrets*, quoted the Biomedical expert as follows:

> "You can cure lung cancer in two ways: You can give everybody gene therapy or you can stop them from smoking," Jones said, "And the answer, it's pretty obvious, you stop them from smoking. The impact of genetics on medicine has been and in the near future will be very, very small."

Thus, although the article reviews the importance of genetic improvements in biomedicine, the article also critiques the focus on biology and clinical care, and emphasizes the need for behavioural preventive efforts. Similarly, 2005 article *Despite medical progress, lung cancer a dreaded diagnosis*, discussed the poor survival rates from lung cancer and the lack of effective screening tools and treatment. Instead of calling for further research as in the Biomedical frame, or offering a critical debate, the Biomedical experts related their preferred approach as follows:

> Still, prevention remains the best therapy, doctors' stress. Simply put, Dr. Shepherd said, "Don't smoke." When it comes to conquering cancer, Dr. Murray said nothing could be more of a breakthrough that the knowledge that curtailing tobacco use could prevent most lung cancers.

Thus, the focus of the article is on preventing lung cancer through limiting individual tobacco consumption, rather than examining the social necessity to curb tobacco consumption or the need for improved clinical care for those who do develop the disease. Indeed, a number of articles that

discussed advancements in screening and treatment shifted the focus toward behavioural prevention. A 2010 article, *Rounding up the latest in science and research*, which discusses developments in applying a diabetes drug to treat lung cancer, states, "Just a few months ago, studies conducted on mice also indicated Metformin helps combat tobacco-induced tumours. The news is certainly promising. But, of course, the best defense is still not to smoke in the first place." Thus, the prevention of lung cancer, particularly through not smoking, was common in the Behavioural/Lifestyle frame and unlike the Biomedical or Structural/Critical frame, trumps biomedical advancements.

The stress on the prevention of lung cancer is apparent in the Behavioural/Lifestyle frame, not only from not smoking, but also through other behaviours. Behaviours like exercising, being cautious with vitamin supplementation, diet considerations such as limiting red meat intake and alcohol consumption, not smoking marijuana and not installing granite countertops to avoid radon exposure are all behaviours discussed in these articles. Interestingly, in the discussion of these other behaviours that contribute to the development of lung cancer, many articles stressed that not smoking overshadows any other preventative measure. For instance, the 2010 article *Protect your lungs with more vitamin B* reviews how consuming the vitamin can lower an individual's risk of developing lung cancer, but also states, "Today's study findings shouldn't detract from the fact that cigarettes smoking remains the main cause of lung cancer. Choosing not to smoke is the most important measure for prevention." Thus, the focus is once again on smoking behaviour even among the discussion of other behavioural risks.

The next two most common themes were the Socioenvironmental research and International themes. As with the other frames, the International theme was common among research articles that reported on epidemiological research and population health statistics from

the US, the Netherlands and Japan, amongst other countries. As mentioned, these socioenvironmental research studies that examined the implications of various behaviours as risks for lung cancer increased over time, therefore reinforcing the focus on individual responsibility without examining the larger issues that contribute to the disease's emergence.

5.4.2 Additional frames.

With regard to the presence of other frames in articles that featured a dominant Behavioural/Lifestyle frame, only three articles featured this singular frame. In two cases, lung cancer was only briefly mentioned in relation to vitamin supplementation and smoking, and the third was an editorial entirely focused on changing a patient's behaviour. Like the Structural/Critical frame, the frame was often supported by others, and their presence helped to draw out a dominant behavioural focus. For instance, as many of the articles reported on epidemiological research and changing cancer trends, 31 of the articles featured a subordinate Socioenvironmental frame. The 2006 article, *Smoking less won't cheat death* reviews an epidemiological study into the dose-response development lung cancer from cigarette smoking. The article prefaces the story by stating:

> Smokers who believe they can avoid fatal disease by slashing the number of cigarettes they smoke each day are badly mistaken, according to a study that found the only safe way out of the risk is to quit.

Thus, the article discusses epidemiological research, but the title and introduction is couched in language that focuses on individual behaviour.

Fourteen articles employed a subordinate Biomedical frame and most discussed the biological interactions behind certain behaviours, such as the chemical properties of certain supplements or foods. As mentioned, a few other articles discussed prevention through not smoking as compared to biomedical intervention. For instance, in the 2003 article, *Can we conquer the Big C?,* the editorialist writes: "Avoiding the primary cause of lung cancer remains

critical because there is not yet an effective way to screen for early signs of the disease, which is usually not detected until it is advanced." Thus, these articles place the onus on the individual to prevent the disease by not smoking because of the lack of biomedical advances. Furthermore, the focus on the individual is heightened due to the lack of discussion of the social and political forces that contribute to smoking.

Finally, three of the 43 articles employed a secondary Structural/Critical frame, offering glimpses into broader critical discussions of the paradox of why smoking is fashionable but lung cancer is unfashionable, the introduction of tobacco to the Inuit community, or the challenges inherent to implementing system-wide screening. The lack of the presence of the Structural/Critical frame highlights the burden of the disease on the individual, where questions about the role of society, the importance of legislation and involvement of other institutions in preventing the emergence of the disease are mostly ignored.

5.4.3 Tones.

With regard to the tones of the articles, the Behavioural/Lifestyle frame featured the most pessimistic articles among the frames, with the distribution as follows: 48.8% Neutral/Mixed, 30.2% Pessimistic and 20.9% Optimistic. Optimistic articles were generally supportive of behaviours that reduced one's risk of developing lung cancer, such as through exercise and diet. Pessimistic articles, on the other hand, were negative toward the increased risk posed by certain behaviours, such as smoking and taking vitamin supplements. Other negative articles were concerned with the burden of lung cancer in the population due to the increasing incidence of the disease and premature deaths as a result of behaviour. Those articles that presented a Neutral/Mixed tone generally combined the above perspectives. For instance, an article could be negative toward the behavioural cause of lung cancer, such as smoking, but positive toward

efforts to prevent smoking uptake. The focus on the Neutral/Mixed and Pessimistic tones highlights the critical nature through which individual behaviour is approached.

5.4.4 Social actors.

The final consideration of articles dominated by the Behavioural/Lifestyle frame is the representation of social actors and the dynamics of their social interaction that contribute to the frame's emergence. Overall, there were 39 actors quoted, therefore the average number of actors quoted per article (0.9) was less than the overall average (1.4) of actors featured in articles on lung cancer. Indeed 14 of the 43 articles (32.6%) did not quote any actors. Seven of these articles had a low emphasis on lung cancer, and therefore quotes by social actors were unrelated to the topic in question. The other articles were primarily journalist-written editorials. Of those articles that did quote social actors, there were 16 quotes from the Biomedical expert, followed by 14 quotes from the Socioenvironmental expert.

In the articles that quoted the Biomedical and Socioenvironmental expert, unlike other frames where these experts acted as advocates for their own research into risk or were critical of the government's approach, in this frame the experts acted as authorities on certain individual behaviours that could prevent disease. Furthermore, whereas in other frames contests occurred between experts and with other social actors, in the Behavioural/Lifestyle frame most comments were directed toward the reader. For instance, in the 2009 article *Folic acid may raise cancer risk*, a Biomedical expert states, "You can't fix everything just by taking a pill. ... It's not always as simple as more of a good thing will be a good thing." In this respect, the expert is critical of overconsumptive behaviour and those looking for easy fixes to their health concerns.

In this frame Socioenvironmental experts generally promoted the idea that disease responsibility lies with the individual. In a 2008 article*, Inuit have highest rate of lung cancer*,

reporting on the high smoking rates among the Inuit population, the expert states, "I don't think we need to convince the policymakers and health professionals that there is a problem, but ultimately it is the individual who has to do their own part". To this expert the individual is responsible to curb smoking trends while government and health professional cooperation is implied. It is only at the end of the article that a Non-Profit/Non-Government representative from within the community commented that tobacco was introduced to the Inuit community. She states, “Before tobacco was introduced, Inuit did not smoke. … So the goal is to return to that." This representative therefore broadens the focus on individual responsibility to an understanding of the sociohistorical context in which smoking emerged in this population. Indeed, as mentioned, most articles focused on the individual at the expense of reviewing broader concerns.

5.5 Analysis: Framing and Dynamics of Social Interaction

As reviewed in Chapter Two, examining the frames found in media content provides an avenue to describe how attention is driven in particular directions, where information is either included or excluded, and thus can provide a more complete portrait of the media’s representation of lung cancer. Also, examining the frames and the social actors found in media content can reveal what and who influences our reflexive project of self-identity. Understanding the frames and social actors therein can reveal patterns of ontological security, or in other words, the taken-for-granted backdrops in which the disease is negotiated in a late modern context.

Unlike other studies in which the Biomedical and Behavioural/Lifestyle frames are the most predominant (Bryant, 2009; Clarke, 2004; Clarke & van Amerom, 2008; Clarke & Binns, 2006; Clarke & Everest, 2006; see also Kolker, 2004; Olstead, 2002; Roy, 2008), as the results show, the Socioenvironmental frame was the most predominant frame and it was closely followed by the Biomedical and Structural/Critical frames. Thus, the study’s findings partially

confirm Kim and Willis (2007) and Lawrence's (2004) studies that showed a greater balance between individual and societal representations of health-related topics in the media. The particular aspects of Socioenvironmental framing, however, reveal a few considerations for its predominance beyond the media achieving a more balanced portrayal of disease causation.

The prevalence of the Socioenvironmental frame may in fact be attributed to society's preoccupation with understanding risk. For instance, several articles reported on changing cancer statistics. Because of its ranking as the leading cause of cancer mortality, lung cancer was often specifically mentioned in articles that overviewed changing cancer statistics. These reports reveal a focus on risk surveillance and contribute to the frame's presence. In addition, several reports examined environmental risk, and were optimistic toward the improved awareness of risk and were negative towards the risks themselves as well as the high death rates. Furthermore, within the Socioenvironmental frame, the presence of the Biomedical frame highlights a continuum of risk understanding moving from epidemiological research to a biologically based understanding, pointing to the importance of improving the awareness of risk in society beyond correlation. As such, the socioenvironmental understanding was arguably a preliminary step on the way to the biological comprehension, and the two frames thus complement one another and reinforce improving the understanding and surveillance of risk. In the context of late modernity, focusing on statistical changes and on risk points to society's increasing preoccupation with surveillance and risk management as Giddens (1991) mentions. These fixations exemplify the conditions of late modernity in which disease must be monitored and controlled, through not only a biomedical but a socioenvironmental understanding and monitoring of risk, as is revealed in this frame.

Furthermore, a distinction should be made between environmental and social reports. The Socioenvironmental frame's popularity is in part due to the many articles that discussed research

into environmental exposures such as SHS, asbestos, and radon that can cause lung cancer. Thus, as mentioned, this particular cancer is not only understood as a disease that results from certain behaviours, and it is acknowledged that the disease is environmentally caused. The data also reveal, though, that while environmental causes are acknowledged, social causes of the disease such as tobacco marketing, socialization and poverty are not often discussed. Indeed, articles that discussed social support for lung cancer patients and social outreach for prevention were uncommon and decreased over time. This distinction leads to a consideration of whether these two elements should be separately considered, and the implications of each explored. For instance, focusing on environmental risk such as asbestos or pollution might be more easily translated to biomedical research. Indeed, the focus on the socioenvironmental causes of lung cancer opens the door for similar explorations with regard to other cancers and diseases, and may point to a trend in achieving balance between media portrayals of disease responsibility. Yet, further consideration must be given to the similarities between the Socioenvironmental and Biomedical frames, as well as distinctions within the risks explored, as based in a late modern society focused on understanding and mitigating risk.

Indeed, the Socioenvironmental expert and Government official were often featured in the Socioenvironmental frame in the role of authoritative expert on disease, cooperating with one another to examine risk. The frustration exemplified by some of these experts who could not explain certain risk relationships points to late modernity's focus on increasing knowledge and mitigating uncertainty. Importantly, the Socioenvironmental expert and the Government official were not often portrayed as advocates for social change. This difference further highlights the frame's focus on understanding risk, rather than on supporting and advocating for disease outreach in a social context. Furthermore, the Structural/Critical frame was only discussed in a

few articles in which legislation was briefly mentioned as a potential solution to the disease. Thus, there was only some discussion of the broader societal considerations and solutions in preventing and managing the disease. Furthermore, this discussion of the frame's focus on risk should be compared to those articles that focused on the patient experience, which were also included in this frame.

The Socioenvironmental frame's dominance is in part due to the inclusion of the patient experience as a part of this frame. As Giddens (1984) relates, individuals must be understood as part of a dynamic tension of agent and structure. Thus discussions of patient experiences should arguably be included in a Socioenvironmental frame where one's experience is a part of the larger societal context. In this dataset, most articles on the patient experience reported on celebrity diagnoses. As was previously mentioned, Clarke and van Amerom (2008) purport that reporting celebrity diagnoses reinforces individual responsibility for the disease. Indeed, the discussion of behaviours prior to disease onset supports this claim, highlighting the presence of the Behavioural/Lifestyle frame that draws focus to the individual. Paradoxically, while the diagnosis of non-smokers such as Chuck Strahl drew some attention to nonbehavioural causes of the disease, the mention of his non-smoking status reinforced the divide between smokers and non-smokers. This individual focus can be juxtaposed to the handful of articles that featured quotes from non-celebrity patients to support social and critical discussions, such as in the case of a patient supporting the ban of asbestos in Chile, or the activism of Canadian lung cancer patients such as Barb Tarbox or Heather Crowe. The particular discussion of celebrities indeed reveals a society in which individuals are considered apart from society, and held accountable for their disease based on their behaviours.

As Hust et al. (2006) argue, there were many missed opportunities for celebrities and their family and friends to discuss their lived experiences and to draw attention to larger social and political concerns of how patients live with lung cancer. Indeed, the reduction in the frame's presence is in part due to the decrease in celebrity reports. Yet, in considering the experiences of individuals with the disease, as Carel (2008) relates, there might be room for a distinct and deeper phenomenological account of the lived experience of the patient, where the first person experience is privileged. This is similar to Boyd's (2000) discussion of the division of *disease*, *sickness* and *illness*, where the latter focuses on the individual experience of disease. Such a consideration could hold implications for engaging celebrity patients in discussing their experiences and thus on the framing of the disease, where the focus on the individual could be linked to a exploration of social issues through a first person perspective. Thus, a *Phenomenological/Lived experience* frame could emerge in the media, separate from the discussion of the socioenvironmental causes of and burdens of the disease.

In fact, the exception to the focus on the individual celebrity patient in a vacuum can be found in the tension revealed between these patients and the biomedical institution. Indeed, most patient experiences were often discussed in the context of treatment, pointing to pervasiveness of the biomedical institution in individual lives. In a couple of instances, where Lou Rawls contradicted his physician and Paul Quarrington highlighted his personal theories about how to treat lung cancer, the patients contested the knowledge claims of the Biomedical expert and asserted their own views and experiences. These are but two examples of where celebrity diagnoses showcase the lived experience of the lung cancer patient. The enhanced discussion of the lived experience of the patient might hold implications for improved social support; where the individual living with lung cancer is portrayed as a member of society, a multifaceted one

who interacts with others while managing and negotiating the disease, thus potentially leading to improved public sympathy and an increase in coverage of the disease. Overall, the cleave between individual accounts and reports of socioenvironmental studies may lead to a further reconsideration of the dominance of the Socioenvironmental frame.

As mentioned, the overall decrease of lung cancer coverage is due in part to the decrease of the Biomedical frame that includes the Pharmaceutical/Biomedical device, Biomedical research, Detection/Diagnosis/Screening and Treatment themes. The frame was characterized by promising developments followed by disappointments in detection, screening and treatment that led to the decrease in its presence over time. The decrease in the promising reports holds important implications where, as discussed, it contributes to a nonculturally resonant discourse of the lack of biomedical dominance over disease risk (Gamson & Modigliani, 1989). Despite the decreasing coverage, however, the frame was tied for the second most common frame overall, and its singular presence as a dominant theme as well as its presence among other frames indicates its role as the normal way to discuss lung cancer. Thus, in line with other studies (see Clarke, 2005; Clarke & Everest, 2006; Clarke & van Amerom, 2008), where possible, the Biomedical frame is given predominance. Ultimately, the equivalent presence of the Socioenvironmental and Structural/Critical with the Biomedical frame may have more to do with the non-cultural resonance of the lack of biomedical advancements in lung cancer, rather than an increase in balanced coverage of the former types.

Among other frames present in the Biomedical frame, the Socioenvironmental frame primarily related the social imperative for biomedical research in terms of disease burden, as well as supported the move from epidemiological research to biomedical understanding. In such a respect, in both frames, the Socioenvironmental frame often supported the biomedical

institution as the one to control and understand risk. In contrast, only one article thoroughly examined specific social implications behind the biological understandings of the disease, and in most cases the benefits for society and individuals were assumed, thus further revealing the hope pinned to the biomedical institution. Indeed, most articles were optimistic in tone about the improved biological understanding of the disease. Even in those reports that presented negative outcomes, there were in many cases positive emphases on the potential for future developments thus reinforcing the focus toward improving biomedical understanding. The lack of presence of Structural/Critical frame is also indicative of the privileged position of the biomedical institution, as articles rarely critically examined the biomedical institution or pharmaceutical industry but rather criticised the government for impeding biomedical progress.

In some ways Biomedical framing can help reduce the stigma of lung cancer, as the negative attitudes around smoking and lung cancer are mitigated through the biological understanding of the disease that examines physical changes rather than behavioural causation. Indeed, Carel (2008) advises that the naturalistic, biomedical view objectifies the disease, based on purely physical facts. Yet, an attempt at an objectification of the disease ignores social reality, meaning that biomedicine cannot be divorced from the context in which it occurs. Indeed, the presence of the Behavioural/Lifestyle framing in tandem with Biomedical framing highlights the reinforcement that the latter gives to individual responsibility of the disease, where the understanding of disease as occurring in the individual body divides society into individual components (see Clarke & Binns, 2006; Kolker, 2004; Kwan, 2009; Zola, 1972). Furthermore, such a narrow focus on biomedical understanding diverts attention from the social and structural ties that contribute to disease occurrence, and is perpetuated by the social actors who contribute to the frame's emergence.

As mentioned in the literature review, Giddens (1991) argues that anyone may become a specialist on any topic because of the increasingly free flow of knowledge. Nonetheless, Zola (1972) argues that as the world reflexively seeks to control risk, individuals are more likely to consult biomedical specialists on disease. As mentioned earlier, the biomedical experts' claim to authority is in part reinforced by media practices; Gamson and Modigliani (1989) relate that journalists generally give preference to official frames presented by established authorities (see also Bennett, 2007). Based on the premise that the Biomedical frame is the normal and preferred lens through which lung cancer is discussed, and that society looks to biomedical professionals to act as risk-control experts, it is therefore unsurprising that the Biomedical expert was the most commonly quoted in the Biomedical frame and was quoted almost twice as often as any other social actor in the dataset. The data reveal that through commenting on their own research, pointing toward the need for treatment and further research, acting as authorities on patient prognoses and the outcomes of particular behaviours, as well as with regard to the biological causes of and implications of the disease, the experts reinforced their claim as an authority over time. Furthermore, in most cases, their claims went unchallenged by other actors: Most contests over knowledge occurred between Biomedical experts, and other actors supported biomedical initiatives. The Biomedical frame reveals how Biomedical experts assert their authority over time, and maintain their privileged presence, in the context of an era of uncertainty.

The presence of the For-profit representative in the Biomedical frame highlights the pharmaceutical/biomedical device industry's focus on profits. With regard to new treatments and devices, CEOs, other representatives, and analysts often spoke in terms of market segments rather than patients, thus exemplifying the focus on profit. Importantly, in many cases the Biomedical expert provided authority to the For-profit representative, thus creating legitimacy

around the latter's claims, while reinforcing the biomedical institution's authority as a whole. The For-profit representative is thus an important contributor to Biomedical framing, reinforcing the importance of biomedical advancement. As will be reviewed next, there was little criticism of the focus on profit from pharmaceutical and biomedical device developments.

The Structural/Critical frame was tied for the second most dominant frame and increased over time. Importantly, the frame was comprised of critical arguments, thus pointing to the political undertones of risk management. The frame focused primarily on whether legislation was a solution to disease. Indeed, some articles examined the government's penchant to act on certain risk relationships, such as SHS and lung cancer, but not others, calling into question political priorities in understanding and managing risk. For instance, the appeal to legislation on SHS did not call for a ban on tobacco that would have drawn attention to tobacco companies as well as criticism toward government complicity in the product's distribution. In addition, the government resisted asbestos legislation, bringing important attention to the government's ability to control carcinogenic exposures, and their subsequent actions and inactions on managing risk. In the Structural/Critical frame, many articles featured the Socioenvironmental and Biomedical frames, pointing to the environmental causes of the disease and on the progress of the biomedical institution, thus exemplifying that Structural/Critical framing of lung cancer emerges from critical considerations of risk examined in other frames. Furthermore, the frame highlights legislation as an important locus of debate around risk management in late modernity.

As mentioned, although the presence of the Structural/Critical frame increased over time, the overall emphasis of articles decreased. In the beginning of the decade, articles focused on CT and PET scanners, which held particular implications for lung cancer patients in terms of early disease detection. Importantly, the particular benefit for lung cancer patients of improved

detection was lost in the discussion of public versus private healthcare, pointing to a missed opportunity to focus on the need for optimal screening in lung cancer patients. In the decade's second half, the focus broadened even further to discuss the overall management of the healthcare system with regard to cancer in general as well as with regard to wait times. Thus, much critical debate was not in fact focused on lung cancer, but rather the disease became lost in much broader critical discourses. Other articles pointed to the relationship between smoking and lung cancer as a comparison for another critical debate. The Structural/Critical frame enveloped lung cancer in broader discussions, drawing some critical attention to the disease, but also drawing attention to the conflation of smoking and lung cancer with little critical awareness of the particular burden of or nuances of the relationship. Thus, one must consider the frame's frequency of occurrence as well as the quality of emphasis on lung cancer.

Legislation as a locus of debate on risk management is exemplified in that unlike the Socioenvironmental frame, in the Structural/Critical frame contests emerged between various actors and the government. The contests between the Socioenvironmental expert, the Non-profit/Non-government representative and the Government official points to Giddens' (1991) argument that knowledge claims are contested and revised in late modernity, in this case through the lens of legislation. Indeed, the former two actors criticised the government in many cases, pointing toward the need for, or criticizing, legislation around risk. The dynamics of expert criticism and the responses by the government highlight that different social actors compete around knowledge claims, in this case with regard to legislation, in media content.

As mentioned, there were only a few articles that turned the critical lens away from the government to other institutions such as society itself, tobacco companies, the media, the biomedical institution, and pharmaceutical industry. With regard to society, only a few articles

critically examined the need for support for lung cancer patients and commented on the disease's stigma. The coverage also rarely discussed the complicity of tobacco companies in promoting tobacco use, the media for inflating risk relationships, and the biomedical and pharmaceutical industry's focus on treatment and profit, respectively, as opposed to prevention. In fact, the government was often criticised for not immediately supporting the implementation of biomedical improvements. The lack of criticism of other institutions further highlights society's fixation on the government and legislation as a prime locus of debate around risk responsibility.

The final most dominant frame was the Behavioural/Lifestyle frame, featured in 43 articles. It is perhaps surprising that the frame was not dominant more often, considering the conflation between smoking and lung cancer, and the findings on the importance of disease prevention through behaviours as noted in other studies (Clarke & Binns, 2006; Clarke & van Amerom, 2008; Kolker, 2004; Olstead, 2002; Roy, 2008). The frame was, however, featured in an additional 25 Biomedical frame articles, 26 Socioenvironmental articles, and 24 Structural/Critical articles. Thus, over one-third of all articles placed some emphasis on the behavioural contributions to the disease. When the Behavioural/Lifestyle frame was the most dominant, articles discussed the behaviours of smoking as well as diet/nutrition, thus supporting Musso and Wakefield's (2009) findings of commonly discussed behavioural risk factors for cancer. As mentioned previously, focusing on behaviour draws attention away from the socioenvironmental causes of lung cancer and particularly the institutions that are complicit in cancer causation (Clarke, 2005; Clarke & Everest, 2006; Musso & Wakefield, 2009). Thus, the attention is on individual behaviour at the expense of a broader context of understanding.

Importantly, the behavioural focus of these articles reflects a condition of late modernity, wherein the focus on future-facing risk assessment coupled with individual reflexivity puts the

onus on the individual to make choices about their behaviour (Giddens, 1991). In other words, individuals are faced with choices about their behaviour that must be based on current knowledge of risk. The data show that the individual is expected to adapt the behaviours recommended and avoid those cautioned against. Indeed, most articles were optimistic toward efforts to reduce risk and were pessimistic of cancer-causing behaviours that lead to a burden of disease in society. Giddens (1991) claims and the evidence show, however, that risk is always changing and contested, thus highlighting a continuing uncertainty about how to act. This uncertainty points to the importance of experts in advising how to behave. As such, in that the Biomedical expert was the most often quoted social actor in the Behavioural/Lifestyle frame, followed by the Socioenvironmental expert, this trend relates the important position of experts toward recommending adopting particular behaviours. Yet, the behavioural attention reinforced by experts overly burdens the individual to absorb the recommended changes. For instance, the data show that smoking is clearly a behaviour recommended to be avoided, but focusing on this change in the individual draws attention away from social change, and the institutions complicit in its continuity as a part of our culture. A limitation is thus revealed as the focus on prevention in the individual body does not consider the larger macrological implications that influence the individual. As Giddens (1984) argues, the individual cannot exist without society, the agent without social structure, and so if the onus is placed on the individual to avoid disease-causing behaviours, so too must society be implicated in preventing disease.

Furthermore, a small but interesting tension arose around the biomedical institution and behaviour in the frame. Indeed, as discussed, in this frame behavioural prevention sometimes trumps biomedical advancements. In the case of lung cancer, where the biomedical institution has a poorer claim of authority over the disease, some experts may realize that the secondary

prevention of lung cancer may not be the best approach to managing the disease. The focus on behavioural prevention can thus be contrasted with the shortcomings of the biomedical institution in diagnosing and treating the disease as discussed in the Biomedical frame. Yet, the focus on behaviour ignores the social and structural considerations that also must be addressed to prevent the disease. Undoubtedly, eliminating tobacco can largely prevent lung cancer, and yet there will be 25,600 new diagnoses this year that should be optimally diagnosed and treated (CCS, 2012). Furthermore, lung cancer is a delayed onset disease that means that even if tobacco were eliminated today, there would be thousands of residual cases in the decades to come (CCS, 2012). Finally, as mentioned, lung cancer also has other causes besides for tobacco, such as asbestos and radon (The Lung Association, 2010), and thus will unlikely ever be entirely eliminated, reinforcing the need for appropriate care. Ultimately, behavioural prevention is an important aspect to reduce the burden of lung cancer, and yet there is nonetheless still a need for biomedical improvement and social intervention that the former cannot address alone.

Reviewing each of the four different frames and the dynamics of social interaction within those frames highlights different aspects of the discourse on the disease and the social actors involved in the disease's negotiation in late modernity. The discussion reveals the taken-for-granted backdrops in which the disease is discussed in a late modern context. In other words, each of the frames, and the social actors present therein, point to the particularities of how the disease is negotiated in society, and therefore to what is and who are important in the schemas of late modern society (Giddens, 1991; Goffman, 1974). The prominence of Socioenvironmental framing points to an understanding of cancer in regard to socioenvironmental risk, one overseen by Socioenvironmental experts and Government officials, and is thus in many respects not different from the Biomedical frame in its focus. Biomedical framing reveals how the biomedical

institution, comprised of biomedical experts and pharmaceutical and biomedical device corporations, assert continued control over the disease based on biological understanding and treatment. Both framing processes highlight the importance of mitigating uncertainty and improving understandings of risk. Structural/Critical and Behavioural/Lifestyle framing also reveal that legislation and the individual are important loci for discussion around disease prevention and management, although the critical debate between social actors in the former frame highlights an arena of contest, whereas in the latter frame individuals are expected to conform with proscribed behaviour from experts.

In light of other studies that point to the predominance of the Biomedical frame, the prominence of the Socioenvironmental and Structural/Critical frame alongside this frame may be indicative of the lack of success on the part of the biomedical institution to establish control over risk, therefore even through it is the preferred frame through which to understand disease, its outcomes are currently non-culturally resonant. Indeed, in the context of late modernity, Industrialization and Capitalism are disrupted by the lack of progress and profit. Furthermore, our ontological security is disrupted as the fragility of biomedical knowledge and the institution's grasp on expertise is revealed in the lack of progress on lung cancer. As Sontag (1978) would argue, lung cancer is still an unfamiliar and mysterious disease that the biomedical institution is wrestling for control. Thus, other frames have become more salient as alternative ways to understand and control risk that has yet to be controlled through biomedicine.

The tension between behavioural prevention and biomedical treatment highlights an important dynamic of risk mitigation in the late modern context, and reinforces the focus on individual preventive behaviour. Yet, despite the focus on the individual, the experts are the ones who debate prevention compared to treatment, revealing the neglect of the patient's perspective.

The patient negotiation of disease is indeed an important aspect of any disease and in this regard, the Socioenvironmental frame revealed a diverging discourse that could allow for a fifth frame focused on the patient's lived experience. Enhancing such a frame in media content might reveal the fragility of our reliance on experts, through the discussion of the lived experience as the patient negotiates the disease. The lived experience frame could thus offer the individual's perspective on risk and responsibility, as well as offer an opportunity for discussion of the institutions involved in the disease's negotiation, as well as a broader critical perspective. Such a discourse might contribute to a reduction in stigma around the disease through the creation of public sympathy toward these individual negotiations.

Indeed, as Giddens relates (1984, 1991) lung cancer is still being negotiated in contemporary society, and the dynamics of interaction within the frames reveal the evolving process. Thus, revised media attention can allow new framing processes to emerge and for individuals to assert their perspective of the disease, contributing to the disease's continuing negotiation. Such a contribution can offer additional layers of understanding of lung cancer in a late modern context.

The next chapter summarises the research findings, explores its implications, and discusses the limitations of the research and avenues for future study.

Chapter Six: Conclusion

The aim of the thesis was to offer an interpretation of the media's portrayal of lung cancer while analysing the results in the context of framing theory and Giddens' theory of reflexivity in late modernity. The thesis was based in a content analysis of 308 articles published in the *National Post* and *The Globe and Mail* between 2001 and 2010 to determine how lung cancer is covered in terms of frequency, length and emphases of articles to better understand quantitative changes over time. The data were then analysed with regard to themes, frames, tones and social actors to understand qualitative changes over time. The smoking statuses of patients were particularly considered to understand how individuals with lung cancer are represented. Finally, four frames, Biomedical, Socioenvironmental, Structural/Critical and Behavioural/Lifestyle, were examined to ascertain the particular dynamics of social interaction that contribute to the disease's representation in late modernity.

The results show that the coverage of lung cancer decreased over time, in terms of frequency of articles, overall word length, and emphasis. The analysis points to a few considerations that might account for the decrease: The ineffectiveness of the Biomedical institution in securing appropriate detection, screening and treatment tools therefore exhibiting a lack of cultural resonance of this discourse, the lack of patient advocacy particularly with regard to celebrities, as well as the continued conflation of smoking and lung cancer that correlates with MacKenzie et al.'s (2010) argument of diminished public sympathy (see also Gamson & Modigliani, 1989). Indeed, the results align with Conlon et al.'s (2010) discussion of lung cancer as a "stacked stigma" (p. 98). The common biomedical themes of Treatment, Biomedical research, and Detection/Diagnosis/Screening all point to the importance of the institution in the disease's management. Yet the presence of the Death theme combined with the decreasing

presence of the Pharmaceutical/Biomedical device theme and Biomedical frame in general point to a discourse of a lack of progress and thus to the decrease in coverage. The coverage of lung cancer was further compromised by a lack of coordinated advocacy from patients to draw attention to the social and political aspects of the disease. Furthermore, as the high frequency of the Smoking/Non-Smoking theme and the third research question reveal, lung cancer was often conflated with smoking behaviour. Indeed, as Prevention was the seventh most frequent theme, and was most often discussed in the context of behavioural prevention, the coverage reinforced the view of the disease as self-caused which leads to a lack of public support.

With regard to the framing of lung cancer, the Socioenvironmental frame was the most dominant frame, followed closely by the Biomedical and Structural/Critical frames, and then the Behavioural/Lifestyle frame. The Socioenvironmental frame was characterized by the emergence of two discourses: One on the patient experience and one on the socioenvironmental causes and considerations of the disease. With regard to the former aspect, there is arguably room for a fifth frame on the Phenomenological/Lived experience to emerge. Such a frame could have positive connotations for the disease's representation in terms of improving public sympathy. With regard to the latter aspect, the frame was also characterized by reports on changing cancer statistics and epidemiological research focused mostly on the environmental causes, and to some extent the social causes, of the disease, which point to society's preoccupation with risk and surveillance. That such attention is given to the socioenvironmental causes of lung cancer is in line with recent studies that reveal a changing media representation of disease toward a greater understanding of the socioenvironmental context of its emergence (see Kim & Willis, 2007; Lawrence, 2004). Yet, this focus can also be more broadly considered as one that meets the criteria of understanding and mitigating risk in late modernity.

As stated, the Biomedical frame decreased over time and can be described as a discourse that featured many promising developments in the beginning of the decade, followed by failure and then a limitation of new reports of detection, screening and treatments. Nonetheless, the biomedical understanding of disease is privileged, as evidenced by its frequency of occurrence in the dataset. In fact, epidemiological research was often subsequently explored within a biomedical context to arguably enhance society's understanding of risk, and there was little criticism of the biomedical and pharmaceutical institutions as compared to the support shown for biomedical advancement. Importantly, the lack of success of the biomedical institution in establishing control over lung cancer presented a challenge to the cultural resonance of progress in late modernity, thereby leading to its decreasing presence. Indeed, the Socioenvironmental and Structural/Critical frames predominance is likely due to biomedicine's disappointments.

In terms of understanding and mitigating risk through a political lens, the Structural/Critical frame was the third most common frame and increased over time, revealing legislation as an important locus of debate. Particular legislative initiatives on SHS and asbestos, as well as improving healthcare system management with regard to PET and CT scans, point to contests over risk management that occurs in the media. Importantly, the criticisms were often aimed at the government rather than the other institutions that play a role in lung cancer. Indeed, if the criticism was not focused on the government, then it turned to individuals, which is exemplified by the presence of the Behavioural/Lifestyle frame. This frame highlights the conflation of smoking behaviour and lung cancer, where the onus is placed on the individual to prevent the disease, and is emphasized and reinforced by society's experts.

The relative presence of various social actors reveals late modernity's reliance on experts to help society manage and mitigate disease risk. Indeed, within the Biomedical frame and the

Socioenvironmental frame, the two respective experts were most often concerned with relating disease risk and reinforcing their authoritative claims. The dynamics of interaction around the Biomedical expert particularly show how this expert generally goes unchallenged by other actors. The focus on mitigating risk is also exemplified in the Structural/Critical frame, where legislative debates reveal a critical discourse over disease responsibility to be debated among many social actors. Interestingly, the Behavioural/Lifestyle frame shows that experts are also concerned with behavioural prevention, sometimes over treatment. The focus on behaviour by experts, however, ignores the social and political aspects of disease contribution. Furthermore, the examination of the dynamics of interaction reveal a potential for a focus on the patient's perspective that could be visited in a Phenomenological/Lived experience frame. Overall, the focus on expert views on risk control and mitigation that are revealed through the framing processes indeed highlight some of the conditions of late modernity (Giddens, 1991).

6.1 Contributions to the Literature and Implications of the Findings

The literature review revealed that only a few studies have analysed lung cancer's representation in the media. To the best of my knowledge, this is the first study to examine the overall portrayal of, and particular framing representations of, lung cancer in a Canadian, and late modern, context. Thus, the research can contribute to the literature as well as hold practical implications for Canadian society.

The research was conducted within framing theory and reflexivity in late modernity, thereby enabling extensions of this theoretical framework. For instance, Giddens' (1991) theory of reflexivity in late modernity is extended by describing and analyzing the representation of lung cancer within this context, revealing and confirming a society focused on mitigating risk through relying on experts. In addition, Goffman's (1974) theory of framing is built on from a

discussion of particular frames in which certain elements are included and others excluded. With regard to contemporary framing studies on disease and cancer in the media, the exploration of commonly studied frames contributes to a more comprehensive understanding of the relative importance of these frames in the representation of cancer and disease.

Employing a broad perspective of society can enhance media studies by moving beyond the frames found in content to reflect on larger social processes that shape media content. As such, the thesis goes beyond previous framing studies by describing and analyzing the presence of social actors who negotiate the representation of the disease. Adding these elements of study provides a way to understand the processes of disease negotiation among social actors as revealed through media content. The analysis considers how the representation emerges, and invites scholars to expand on other cancers and diseases. Furthermore, better understanding the social actors represented and implicated in the discourse on lung cancer can indeed hold tangible, practical implications for changing the disease's coverage.

As mentioned, the results reveal a decreasing coverage of lung cancer which complement other studies that point to lung cancer's underrepresentation and its decreasing coverage over time. Overall, the lack of coverage of lung cancer might have an opposite effect to the claim from Lewison et al. (2008) that overexposure to breast cancer coverage contributes to an overestimation of disease risk. The underexposure of lung cancer might contribute to an underestimation of risk among non and former smokers, as well as the disease emanating from other causes, and finally an overestimation of risk toward current smokers. The analysis outlines three important considerations for the decrease: the importance of cultural relevance of biomedical success in a late modern context, the need for advocacy and macrological connections particularly among celebrities, and the conflation of smoking with the disease. When

considered in the context of other cancers for which there is an emerging discourse of cancer risk control, lung cancer is thus potentially an unattractive anomaly for media focus that exposes flaws in biomedical knowledge and undermines the authority of one of the major institutions in society. From a theoretical understanding of how the coverage decreased and the emergence of framing processes in a late modern context, researchers, communication experts, individuals and public policy developers can possibly reflexively adapt their next steps on the issues around lung cancer based on addressing these points. For instance, there is an opportunity to improve the discourse on the lived experience of the patient to improve public sympathy and destigmatize the disease. Furthermore, the little criticism of other institutions besides for the government, such as tobacco companies, the biomedical institution, the pharmaceutical industry and the media reveal other opportunities to broaden the critical discourse to change the coverage of the disease. Overall, this improved understanding can challenge our assumptions about the disease and lead to reflexive changes at the individual and societal levels.

6.2 Study Limitations and Avenues for Future Research

Although the study aimed to be as a thorough as possible, there are a few limitations to this research project based primarily on lack of time and funding. Using an intercoding process would have strengthened the reliability of the results. Future studies might ensure data intercoding, and might test for the statistical significance to strengthen and complement the claims made in this study. Indeed, as the aim of the study was primarily to offer a qualitative descriptive analysis and interpretation, the claims can act as a springboard for future studies.

Ideally, the research would have more closely examined the production and effects of media content related to the representation of lung cancer in the Canadian print media. Furthermore, other communication media could have been examined. Thus, future research

might examine the other aspects of the media cycle and compare media tools to better understand how lung cancer is negotiated. Nonetheless, examining the representation phase of mass communication with a focus on print media is a fundamental piece of such a larger undertaking.

In addition to examining the other aspects of media cycle as well as various communication media on the representation of lung cancer, future research could take on the project of offering a direct comparison of how and why some cancers come to be underrepresented or overrepresented in the media. This can be achieved through in-depth interviews with the producers of media content, comparing the content of underrepresented cancers to overrepresented cancers, and examining the effects of coverage on the audience. Such studies can further contribute to a theorization of how balanced representations could emerge.

6.3 Final Thoughts

As mentioned, lung cancer is the second leading cause of cancer morbidity and the leading cause of cancer mortality (CCS, 2012), and thus it holds extensive implications in Canadian society. The content analysis aimed to contribute to a better understanding of how the disease is portrayed in the Canadian media, within the context of framing and reflexivity in late modernity, to offer a platform for future studies on the disease as well as avenues to improve coverage. As such, studies that continue the project of describing and examining lung cancer representation in the media, as well as examining its underrepresentation as compared to other cancers, can lead to the development of comprehensive strategies to support its coverage in contemporary society. Ultimately then, these types of contributions can help to support lung cancer patients, their family and friends, and other implicated stakeholders, as well as can hold broader implications for understanding disease negotiation in a late modern context that can influence a myriad of communication research.

References

Altheide, D. L. (1998). *Qualitative media analysis*. Thousand Oaks, CA: SAGE Publications.

Atwood, M. (1998). *The handmaid's tale*. London: New Windmills.

Audit Bureau of Circulation. (2012). *ACCESS ABC: eCirc for US newspapers*. Retrieved from http://abcas3.accessabc.com/ecirc/newstitlesearchcan.asp

Bennett, W. L. (2007). *News: The politics of illusion*. White Plains, NY: Longman.

Berelson, B. (1952). *Content analysis in communication research*. New York, NY: Free Press.

Berg, B. L. (2007a). Unobtrusive measures in research. In M. Eid & M. Lagacé (Eds.), *Communication research methods: Quantitative and qualitative approaches* (pp. 147-172). Canada: Pearson Custom Publishing.

Berg, B. L. (2007b). An introduction to content analysis. In M. Eid & M. Lagacé (Eds.), *Communication research methods: Quantitative and qualitative approaches* (pp. 247-278). Canada: Pearson Custom Publishing.

Berger, A. A. (1998). *Media research techniques* (2nd ed). Thousand Oaks, CA: SAGE Publications.

Berinsky, A. J., & Kinder, D. R. (2006). Making sense of issues through media frames: Understanding the Kosovo crisis. *The Journal of Politics*, *68*(3), 640-656. doi:10.1111/j.1468-2508.2006.00451.x

Bryman, A. (2008). *Social research methods* (3rd ed). New York, NY: Oxford University Press.

Borah, P. (2011). Conceptual issues in framing theory: A systematic examination of a decade's literature. *Journal of Communication, 61*(2), 246-263. doi: 10.1111/j.1460-2466.2011.01539.x

Boyd, K. M. (2000). Disease, illness, sickness, health, healing and wholeness: Exploring some elusive concepts. *Journal of Medical Ethics, 26*(1), 9-17. doi:10.1136/mh.26.1.9

Brewer, P. R. (2003). Values, political knowledge, and public opinion about gay rights. *Public Opinion Quarterly, 67*(2), 173-201. Retrieved from: http://www.jstor.org/discover/10.2307/3521629?uid=3739464&uid=2129&uid=2&uid=70&uid=3737720&uid=4&sid=56178925173

Brown, P., Zavestoski, S. M., McCormick, S., Mandelbaum, J., & Luekbke, T. (2001). Print media coverage of environmental causation of breast cancer. *Sociology of Health and Illness, 23*(6), 747–775. doi:10.1111/1467-9566.00274

Bryant, T. (2009). *An introduction to health policy.* Toronto, ON: Canadian Scholars' Press Inc.

Canadian Cancer Society. (2009a). What is colorectal cancer? Retrieved from http://www.cancer.ca/Canada-wide/About%20cancer/Types%20of%20cancer/What%20is%20colorectal%20cancer.aspx

Canadian Cancer Society. (2009b). What is leukemia? Retrieved from http://www.cancer.ca/Canada-wide/About%20cancer/Types%20of%20cancer/What%20is%20leukemia.aspx

Canadian Cancer Society. (2009c). What is lung cancer? Retrieved from http://www.cancer.ca/Canada-wide/About%20cancer/Types%20of%20cancer/What%20is%20lung%20cancer.aspx

Canadian Cancer Society. (2010). *Canadian cancer statistics 2010*. Retrieved from http://www.cancer.ca/Canada-wide/About%20cancer/Cancer%20statistics.aspx?sc_lang=en

Canadian Cancer Society. (2012). *Canadian cancer statistics 2012*. Retrieved from http://www.cancer.ca/Canada-wide/About%20cancer/Cancer%20statistics.aspx?sc_lang=en

Carel, H. (2008). *Illness.* Stocksfield, United Kingdom: Acumen Publishing Limited.

Chong, D., & Druckman, J. N. (2007). Framing theory. *Annual Review of Political Science, 10*(1), 103-126. doi:10.1146/annurev.polisci.10.072805.103054

Clarke, J. N. (1999a). Breast cancer in mass circulating magazines in the U.S.A. and Canada, 1974-1995. *Women and Health*, *28*(4), 113-130. doi:10.1300/J013v28n04_07

Clarke, J. N. (1999b). Prostate cancer's hegemonic masculinity in select print mass media depictions (1974-1995). *Journal of Health Communication*, *11*(1), 59-74. doi:10.1207/s15327027hc1101_4

Clarke, J. N. (2004). A comparison of breast, testicular and prostate cancer in mass print publications (1996-2001). *Social Science and Medicine*, *59*(3), 541-551. Retrieved from http://journals.elsevier.com/02779536/social-science-and-medicine/

Clarke, J. N. (2005). Portrayal of childhood cancer in English language magazines in North American: 1970-2001. *Journal of Health Communication, 10*(7), 593-607. doi:10.1080/10810730500267605

Clarke, J. N., & Binns, J. (2006). The portrayal of heart disease in mass print magazines, 1991-2001. *Journal of Health Communication, 19*(1)*,* 39-48. Retrieved from http://www.tandf.co.uk/journals/titles/10810730.html

Clarke, J. N., & Everest, M. M. (2006). Cancer in the mass print media: Fear, uncertainty and the medical model. *Social Science and Medicine*, *62*(1), 2591–2600. doi:10.1016/j.socscimed.2005.11.021

Clarke, J. N., & van Amerom, G. (2008). Mass print media depictions of cancer and heart disease: Community versus individualistic perspectives? *Health and Social Care in the Community*, *16(*1), 96–103. doi:10.1111/j.1365-2524.2007.00731.x

Conlon, A. Gilbert, D., Jones, B., & Aldredge, P. (2010). Stacked stigma: Oncology social workers' perceptions of the lung cancer experience. *Journal of Psychosocial Oncology*, *28*(1), 98-115. doi:10.1080/07347332.2010.506402

Connor-Greene, P. A. (2006) Interdisciplinary critical inquiry: Teaching about the social construction of madness. *Teaching of Psychology, 33*(1) 6-13. doi:10.1207/s15328023top3301_3

D'Angelo, P. (2002). News framing as a multiparadigmatic research program: A response to Entman. *Journal of Communication, 52*(4), 870-889. doi:10.1111/j.1460-2466.2002.tb02578.x

Donelle, L., Hoffman-Goetz, L., & Clarke, J. N. (2005). Ethnicity, genetics, and breast cancer: Media portrayal of disease identities. *Ethnicity and Health, 10*(3), 185-197. doi:10.1080/13557850500120751

Dorfman, L., Wallack, L., & Woodruff, K. (2005). More than a message: Framing public health advocacy to change corporate practices. *Health Education and Behaviour*, *32*(3), 320-336. doi:10.1177/1090198105275046

Dovring, K. (1954-1955). Quantitative semantics in 18th century Sweden. *Public Opinion Quarterly, 18*(4), 389-394. doi:10.1086/266531

Druckman, J. N. (2001). The implications of framing effects for citizen competence. *Political Behaviour, 23*(3), 225-256. Retrieved from: http://www.uky.edu/AS/PoliSci/Peffley/pdf/Druckman%25202001%2520PB%2520IMPLICATIONS%2520OF%2520FRAMING%2520EFFECTS%2520FOR%2520CITIZEN%2520COMPETENCE.pdf&sa=X&scisig=AAGBfm3FumAlVglGfm2b-PYVSt3f4UyIvg&oi=scholarr&ei=aeGzT-W9G4eY6QGl9IW3CQ&ved=0CBsQgAMoADAA

Edelman, M. (1993). Contestable categories and public opinion. *Political Communication*, *10*(3), 231-242. doi:10.1080/10584609.1993.9962981

Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication, 42*(4), 51-58. doi:10.1111/j.1460-2466.1993.tb01304.x

Fairclough, N. (2003). *Analyzing discourse: Textual analysis for social research*. London: Routledge.

Frey, L. R., Botan, C. H., & Kreps, G. L. (2007a). Asking questions about communication. In M. Eid, & M. Lagacé (Eds.), *Communication research methods: Quantitative and qualitative approaches* (pp. 45-65). Canada: Pearson Custom Publishing.

Frey, L. R., Botan, C. H., & Kreps, G. L. (2007b). Textual analysis. In M. Eid, & M. Lagacé (Eds.), *Communication research methods: Quantitative and qualitative approaches* (pp. 561-592). Canada: Pearson Custom Publishing.

Gamson, W. A. (1985). Goffman's legacy to political sociology. *Theory and Society*, *14*(5), 605-622. Retrieved from: http://www.jstor.org/discover/10.2307/657316?uid=3739464&uid=2129&uid=2&uid=70&uid=3737720&uid=4&sid=56178925173

Gamson, W. A. (1989). News as framing. *American Behavioural Scientist, 33*(2), 157-161. doi: 10.1177/0002764289033002006

Gamson, W. A., & Modigliani, A. (1989). Media discourse and public opinion on nuclear power: A constructionist approach. *American Journal of Sociology, 95*(1), 1-37. Retrieved from: http://www.jstor.org/discover/10.2307/2780405?uid=3739464&uid=2129&uid=2&uid=70&uid=3737720&uid=4&sid=56178925173

Giddens, A. (1984). *The constitution of society*. Los Angeles, CA: University of California Press.

Giddens, A. (1991). *Modernity and self-identity: Self and society in the late modern age.* Stanford, CA: Stanford University Press.

Giddens, A., & Pierson, C. (1998). *Conversations with Anthony Giddens: Making sense of modernity.* Stanford, CA: Stanford University Press.

Giddens, A. (2009). On rereading the presentation of self: Some reflections. *Social Psychology Quarterly, 72*(4), 290-295. doi:10.1177/019027250907200402

Goffman, E. (1959). *The presentation of self in everyday life*. Garden City, NY: Doubleday.

Goffman, E. (1963). *Stigma*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Goffman, E. (1974). *Frame analysis: An essay on the organization of experience.* New York, NY: Harper & Row.

Hall, S. (1980). Encoding/Decoding. In S. Hall, D. Hobson, A. Lowe, & P. Willis (Eds.), *Culture, Media, Language--Working Papers in Cultural Studies, 1972-1979* (pp. 128-138). London: Hutchinson.

Hallahan, K. (1999). Seven models of framing: Implications for public relations. *Journal of Public Relations Research, 11*(3), 205-242. Retrieved from: http://umdrive.memphis.edu/cbrown14/public/Mass%2520Comm%2520Theory/Week%25203%2520Agenda%2520Setting%2520and%2520Framing/framing%2520and%2520public%2520relations.pdf&sa=X&scisig=AAGBfm3rNPTJRjOGXVB4f4aXgSVvQbRZ7Q&oi=scholarr&ei=1OCzT5O4BdCA6QHgq-DGCQ&ved=0CBsQgAMoADAA

Halpin, M., Phillips, M., & Oliffe, J. L. (2009). Prostate cancer stories in the Canadian print media: Representations of illness, disease and masculinities. *Sociology of Health and Illness, 31*(2), 155-169. doi:10.1111/j.1467-9566.2008.01122.x

Health Canada. (2009). *Lung cancer – smoking diseases – Health Canada*. Retrieved from http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/body-corps/disease-maladie/lung-poumon_cancer-eng.php

Hirsch, E. D., Jr. (1967). *Validity in interpretation.* New Haven, CT: Yale University Press.

Hoffman-Goetz, L., & Friedman, D. B. (2005). Disparities in the coverage of cancer information in ethnic minority and mainstream print media. *Ethnicity and Disease, 15*(2), 332-340. Retrieved from http://www.ishib.org/ED_index.asp

Hoffman-Goetz, L. & MacDonald, M. (1999). Cancer coverage in mass-circulating Canadian women's magazines*. Canadian Journal of Public Health, 90*(1), 55-60. Retrieved from http://www.cpha.ca/en/cjph.aspx

Holsti, O. R. (1969). *Content analysis for the social sciences and humanities*. Reading, MA: Addison-Wesley.

Hust, S., Van de Vord, R., & Chen, Y-C. (2006, June). *Still much to learn from Peter Jennings: Newspapers' missed opportunity to educate the public.* Paper presented at the National Communication Association Annual Meeting, Dresden.

Interactive Advertising Bureau of Canada. (2010). *2010 Canadian media usage trends study*. Retrieved from http://www.iabcanada.com/insight-research

Iyengar, S. & Simon, A. (1993). News coverage of the Gulf crisis and public opinion: A study of agenda-setting, priming, and framing. *Communication Research, 20*(3), 365-383. doi:10.1177/009365093020003002

Jackson, W. (2003). *Methods: Doing social research*. Toronto, ON: Prentice Hall.

Jensen, J. D., Moriaty, C., Hurley, R. J., & Stryker, J-E. (2008). *Are some cancers more common in the news than in real life?: Interreality comparisons of cancer news coverage and actual cancer rates.* Paper presented at the International Communication Association Annual Meeting, San Diego.

Jensen, J. D., Moriarty, C., Hurley, R. J., & Stryker, J-E. (2010). Making sense of cancer news coverage trends: A comparison of three comprehensive content analyses. *Journal of Health Communication, 15*(2), 136-151. doi:10.1080/10810730903528025

Kahneman, D., & Tversky, A. (1987). Choices, values, and frames. *American Psychologist, 39*(4), 241-350, Retrieved from: http://psycnet.apa.org/index.cfm?fa=buy.optionToBuy&id=1985-05780-001

Kedrowski, K. M., & Sarow, M. S. (2007). *Cancer activism: Gender, media and public policy.* Chicago, IL: University of Illinois Press.

Kim, S-H., & Willis, L. A. (2007). Talking about obesity: News framing of who is responsible for causing and fixing the problem. *Journal of Health Communication, 12*(4), 359-376. doi:10.1080/10810730701326051

Klaidman, S. (1991). *Health in the headlines: The stories behind the stories.* New York, NY: Oxford University Press.

Kline, K. N. (2003). Popular media and health: Images, effects and institutions. In T. L. Thompson, A. M. Dorsey, K. I. Miller, & R. L. Parrott (Eds.), *Handbook of health communication* (pp. 557-581). Mahwah, NJ: Lawrence Erlbaum Associates.

Kline, K. N. (2006). A decade of research on health content in the media: The focus on health challenges and sociocultural content and attendant informational and ideological problems. *Journal of Health Communication, 11*(1), 43-59. doi: 10.1080/10810730500461067

Kolker, E. S. (2004). Framing as a cultural resource in health social movements: Funding activism and the breast cancer movement in the US 1990-1993. *Sociology of Health and Illness, 26*(6), 820-844. doi:10.1111/j.0141-9889.2004.00420.x

Krippendorf, K. (2009). *On communicating: Otherness, meaning and information*. (Ed. F Bermejo). New York, NY: Routledge.

Kwan, S. (2009). Individual versus corporate responsibility. *Food, Culture and Society, 12*(4), 477-495. doi:10.2752/175174409X456755

Lakoff, A. (2005). *Pharmaceutical reason*. New York, NY: Cambridge University Press.

Lawrence, R. G. (2004). Framing obesity: The evolution of news discourse on a public health issue. *International Journal of Press/Politics, 9*(4), 56-75. doi:10.1177/1081180X04266581

Lewison, G., Tootell, S., Roe, P., & Sullivan, R. (2008). How do the media report cancer research? A study of the UK's BBC website. *British Journal of Cancer, 99*(4), 569-576. doi:10.1038/sj.bjc.6604531

MacKenzie, R. Chapman, S. & Holding, S. (2010). Framing responsibility: Coverage of lung cancer among smokers and non-smokers in Australian television news. *Australian and New Zealand Journal of Public Health, 35*(1), 66-70. doi: 10.1111/j.1753-6405.2010.00614.x

MacKenzie, R., Johnson, N., Chapman, S., & Holding, S. (2009). Smoking-related disease on Australian television news: Inaccurate portrayals may contribute to pubic misconceptions. *Australian and New Zealand Journal of Public Health, 33*(2), 144-146. doi:10.1111/j.1753-6405.2009.00361.x

MacKenzie, R., Chapman, S., Johnson, N., McGeechan, K., & Holding, S. (2008). The newsworthiness of cancer in Australian television news. *Medical Journal of Australia, 189*(3), 155-158, Retrieved from: https://www.mja.com.au/journal/2008/189/3/newsworthiness-cancer-australian-television-news

Martin, L. J. (1976). Recent theory on mass media potential in political campaigns. *Annals of the American Academy of Political and Social Science, 427*(5), 125-133. doi:10.1177/000271627642700114

Matthes, J. (2009). What's in a frame? A content analysis of media framing studies in the world's leading communication journals, 1990-2005. *Journalism and Mass Communication Quarterly, 86*(2), 349-367. doi: 10.1177/107769900908600206

McLeod, D. M., & Tichenor, P. J. (2007). The logic of social and behavioural science. In M. Eid, & M. Lagacé (Eds.), *Communication research methods: Quantitative and qualitative approaches* (pp. 1-20). Canada: Pearson Custom Publishing.

Meissner, H. I., Potosky, A. L., & Convissor, R. (1992). How sources of health information relate to knowledge and use of cancer screening exams. *Journal of Community Health*, *17*(3), 153-165. doi:10.1007/BF01324404

Merrigan, G. & Huston, C. L. (2009). *Communication research methods* (2nd ed.). New York, NY: Oxford University Press, Inc.

Mukherjee, S. (2010). *Emperor of all maladies*. New York, NY: Scribner Book Company.

Musso, E., & Wakefield, S. E. L. (2009). 'Tales of mind over cancer': Cancer risk & prevention in the Canadian print media. *Health, Risk and Society, 11*(1), 17-38. doi:10.1080/13698570802536567

Nardi, P. M. (2007). Why we do research. In M. Eid, & M. Lagacé (Eds.), *Communication research methods: Quantitative and qualitative approaches* (pp. 21-42). Canada: Pearson Custom Publishing.

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

Neuman, W. L. (2007). Qualitative and quantitative research designs. In M. Eid, & M. Lagacé (Eds.), *Communication research methods: Quantitative and qualitative approaches* (pp. 175-186). Canada: Pearson Custom Publishing.

Olstead, R. (2002). Contesting the text: Canadian media depictions of the conflation of mental illness and criminality. *Sociology of Health and Illness, 24*(5), 621-643. doi: 10.1111/1467-9566.00311

Pan, Z. & Kosicki, G. M. (1993). Framing analysis: An approach to news discourse. *Political Communication, 10*(1), 55-75. doi: 10.1080/10584609.1993.9962963

Platt, A. (2010). *From sin to sickness: A qualitative content analysis of four major American newspapers' representations of alcoholism*. (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (3444173.).

Public Health Agency of Canada. (2005*). Leading Causes of Death and Hospitalization in Canada.* Retrieved from http://www.phac-aspc.gc.ca/publicat/lcd-pcd97/table1-eng.php

Public Health Agency of Canada. (2007). *Trends & impacts –The basis for investment decisions.* Retrieved from http://www.phac-aspc.gc.ca/alw-vat/trends-tendances/index-eng.php

Redmond, N., Baer, H. J., Clark, C. R., Lipsitz, S., & Hicks, L. S. (2010). Sources of health information related to preventive health behaviors in a national study. *American Journal of Preventive Medicine, 38*(6), 620-627. doi:10.1016/j.amepre.2010.03.001

Reese, S. D. (2007). The framing project: A bridging model for media research revisited. *Journal of Communication, 57*(1), 148-154. doi:10.1111/j.1460-2466.2006.00334.x

Riffe, D., Lacy, S., & Fico, F. G. (1998). *Analyzing media messages: Using quantitative content analysis in research.* Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Rosenberg, C. E. (1992). Introduction. In C. E. Rosenberg, & J. Golden (Eds.), *Framing disease* (pp. xiii-xxvi). New Brunswick, NJ: Rutgers University Press.

Roy, S. C. (2008). 'Taking charge of your health: Discourses of responsibility in English-Canadian women's magazines. *Sociology of Health and Illness, 30*(3), 463-477. doi:10.1111/j.1467-9566.2007.01066.x

Scheufele, D. A. (1999). Framing as a theory of media effects. *Journal of Communication, 49*(1), 103-122. doi:10.1111/j.1460-2466.1999.tb02784.x

Scheufele, D. A. (2002). Examining differential gains from mass media and their implications for participatory behavior. *Communication Research, 29*(1)*, 46-65.* doi:10.1177/009365020202900103

Seale, C. (2002). *Media and health*. London: Sage Publications.

Seale, C. (2003). Health and media: An overview. *Sociology of Health and Illness, 25*(6), 513-531. Retrieved from: http://onlinelibrary.wiley.com/doi/10.1111/1467-9566.t01-1-00356/pdf

Shen, F. (2004). Effects of news frames and schemas on individuals' issue interpretations and attitudes. *Journalism and Mass Communication Quarterly*, *81*(2), 400-416. doi: 10.1177/107769900408100211

Siu, W. (2009). Social construction of reality: The tobacco issue*. Critical Public Health, 19*(1), 23-44. doi:10.1080/09581590801995216

Slater, M. D., Long, M., Bettinghaus, E. P., & Reiheke, J. B. (2008). News coverage of cancer in the United States: A national sample of newspapers, television, and magazines. *Journal of Health Communication, 13*(6), 523-537. doi:10.1080/10810730802279571

Snow, D. A. & Benford, R. D. (1988). Ideology, frame resonance and participant mobilization. *International Social Movement Research, 1*(1), 197-217. Retrieved from: http://digilib.bc.edu/reserves/sc582/leac/sc58216.pdf&sa=X&scisig=AAGBfm1BX4_Rq74P-zn6NguNYcuzDrHefw&oi=scholarr&ei=WN6zT6KGGejv6AHM6Z2TCQ&ved=0CBsQgAMoADAA

Sontag, S. (1978). *Illness as metaphor.* New York, NY: Farrar, Straus and Giroux.

Stryker, J-E. (2003). Media and marijuana: A longitudinal analysis of news media effects on adolescents' marijuana use and related outcomes. *Journal of Health Communication, 8*(4), 305-328, doi: 10.1080/10810730305724

Stryker, J-E., Emmons, K. M.,& Viswanath, K. (2006). Uncovering differences across the cancer control continuum: A comparison of ethnic and mainstream cancer newspaper stories. *Preventive Medicine*, 44(1), 20-25. doi:10.1016/j.ypmed.2006.07.012

The Lung Association. (2010). *What is lung cancer?* Retrieved from http://www.lung.ca/diseases-maladies/cancer-cancer/what-quoi/index_e.php

Thöer, C. (2009). La couverture de la controverse entourant l'hormonothérapie dans la presse d'information en France et au Québec. In C. Thöer, B. Lebouché, J. J. Lévy, & V. A. Sironi (Eds.), *Médias, medicaments et espace public* (pp. 163-188). Québec, QC: Presses de l'Université de Québec.

Tichenor, P. J., Donohue, G. A., & Olien, C. N. (1970). Mass media flow and differential growth in knowledge. *Public Opinion Quarterly, 34*(2), 159-170. doi:10.1086/267786

Valenzano III, J. M. (2009). Framing the war on terror in Canadian newspapers: Cascading activation, Canadian leaders and newspapers. *Southern Communication Journal, 74*(2), 174-190. doi:10.1080/10417940802441785

Valkenburg, P .M., Semetko, H. A., & De Vreese, C. H. (1999). The effects of news frames on readers' thoughts and recall. *Communication Research, 26*(5), 550-569. doi:10.1177/009365099026005002

Van Dijk, T. A. (1985). Introduction: Discourse analysis in (mass) communication research. In T. A. van Dijk (Ed.), *Discourse and communication: New approaches to the analysis of mass media discourse and communication* (pp. 1-12). Berlin: Walter de Gruyter.

Wade, S. & Schramm, W. (1969). The mass media as sources of public affairs, science, and health knowledge. *Public Opinion Quarterly, 33*(2), 197-209. doi:10.1086/267691

Wakefield, M., McLeod , K., & Smith K. C. (2003). Individual versus corporate responsibility for smoking-related illness: Australian press coverage of the Rolah McCabe trial. *Health Promotion International, 18*(4), 297-305, doi:10.1093/heapro/dag413

Weaver, D. H. (2007). Thoughts on agenda setting, framing, and priming. *Journal of Communication, 57*(1), 142-147. doi:10.1111/j.1460-2466.2006.00333.x

Weeks, L. C. (2009). *Representations of complementary and alternative medicine for cancer in popular Canadian print media*. (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (NR51217.)

Wimmer, R. D., & Dominick, J. R. (2006). *Mass media research: An introduction* (8th ed.). Toronto, ON: Thomson Wadworth.

Winkler, J. D., Kanouse, D. E., Brodsley, L., & Brook, R. H. (1986). Popular press coverage of eight national institutes of health consensus development topics. *Journal of the American Medical Association, 255*(10), 1323-1327. doi:10.1001/jama.1986.03370100117028

Yoo, G. (2001). Constructing deservingness: Federal welfare reform, supplemental security income, and elderly immigrants. *Journal of Aging and Social Policy*, *13*(4), 17-34. Retrieved from: http://www.ncbi.nlm.nih.gov/pubmed/12418380

Ytreberg, E. (2002). Erving Goffman as a theorist of the mass media. *Critical Studies in Media Communication, 19*(4), 481-497. doi:0.1080/07393180216570

Zola, I. K. (1972). Medicine as an institution of social control. *Sociological Review, 20(*4), 487-504. doi:10.1111/j.1467-954X.1972.tb00220.x

Appendix A: List of Articles Coded and Analysed

Article Title	Newspaper	Date of Publication
First class care	National Post	February 8, 2001
Free advice	National Post	February 12, 2001
Asbestos suits push W. R. Grace into Chapter II	National Post	April 3, 2001
DNA won't unlock life's big secrets	National Post	April 17, 2001
Better diets helping to cut cancer rate	The Globe and Mail	April 19, 2001
Cancer cases will jump as country ages, report says	The Globe and Mail	April 19, 2001
Smoking harder for women to quit	National Post	May 2, 2001
Sushi may cut cancer risk, data show	The Globe and Mail	May 4, 2001
Butt out	National Post	May 8, 2001
'I'm one of the lucky ones. I'm still alive': Winston Man on mission to stop children smoking:,	National Post	May 11, 2001
Cancer test could save millions	National Post	May 22, 2001
IMI Int'l Medical (IMI-TSE)	The Globe and Mail	May 23, 2001
Simple spit test may eventually detect early-stage lung cancer, researcher says	The Globe and Mail	May 23, 2001
Smoker wins billions in suit	The Globe and Mail	June 7, 2001
L.A. jury awards $3-billion to dying Marlboro smoker	National Post	June 7, 2001
No basis for pesticide bans	National Post	June 15, 2001
Cancer fighters	The Globe and Mail	June 23, 2001
The new blood	National Post	June 23, 2001
Research needs open eyes	The Globe and Mail	June 29, 2001
Doctors demand more high-tech cancer scanners	National Post	July 6, 2001
Timing is everything	National Post	July 9, 2001
PET scans to be available - for $2,500	National Post	July 9, 2001
Second-hand smoke can triple risk,	The Globe and Mail	July 12, 2001
PM's bid to stop asbestos ban inspires protest by Chileans	The Globe and Mail	July 12, 2001
Good science on asbestos	The Globe and Mail	July 17, 2001

Just say no to asbestos	The Globe and Mail	July 18, 2001
Harrison 'knows he is going to die'	National Post	July 23, 2001
Huge study of prostate cancer to be launched	National Post	July 24, 2001
Disgusted' Harrison denies he's near death	The Globe and Mail	July 24, 2001
George of the Jungle' star to die by fall: trainer: Lion has lung cancer,	National Post	July 24, 2001
But yesterday I thought they said,	National Post	July 30, 2001
Everything cause cancer - so relax,	National Post	August 4, 2001
Damages slashed in tobacco lawsuit	National Post	August 11, 2001
Secondhand smoke main cause of death in the workplace, study says	The Globe and Mail	August 18, 2001
Biotechnology: Eli Lilly pays US$300-million for Isis lung cancer treatment	National Post	August 23, 2001
Lorus search for CEO nears end	The Globe and Mail	September 4, 2001
The marriage of IT and medicine	The Globe and Mail	September 18, 2001
There's room for hope amid gloomy statistics	The Globe and Mail	September 24, 2001
A triumph for the demon weed,	The Globe and Mail	October 2, 2001
Breathe easy	National Post	October 27, 2001
United Kingdom: British increase in breast cancer rate baffles experts	National Post	November 5, 2001
Ounce of prevention	National Post	November 17, 2001
Canada's medical system lack many bells and whistles	National Post	November 17, 2001
AstraZeneca pulls plug on Anormed's share price	National Post	November 17, 2001
How much mucous can benefit humanity	National Post	December 10, 2001
Hill and homosexuality	The Globe and Mail	December 21, 2001
Three-minute summary	The Globe and Mail	January 15, 2002
It's all such a crap shoot	The Globe and Mail	February 2, 2002
Country's 1st private CAT clinic to open	National Post	February 21, 2002
Second-hand smoke as deadly as 'crashing a few airplanes'	The Globe and Mail	February 25, 2002
City air raises risk of cancer, study says	The Globe and Mail	March 6, 2002
Something in the air, The Globe and Mail	The Globe and Mail	March 7, 2002

Junk science as dangerous as dirty air	National Post	March 8, 2002
Polluted city air tough on circulatory system: Effects of smog revealed	National Post	March 12, 2002
G-d is good medicine	The Globe and Mail	April 2, 2002
Dry-mouth pill seen as anti-cancer hedge	The Globe and Mail	April 10, 2002
Cancer on the increase among young adults	National Post	April 19, 2002
Cancer increase in young adults alarm doctors	The Globe and Mail	April 19, 2002
Genes offer hope of lung cancer cure,	The Globe and Mail	May 2, 2002
Inex investors react as test data reported	The Globe and Mail	May 2, 2002
Of monkeys and men	National Post	May 3, 2002
Striking at the heart of cancer	The Globe and Mail	June 11, 2002
Cancer hits more young women than men: 20-44 age group	National Post	June 13, 2002
Second-hand smoke said to up cancer risk by 20-30%: International study	National Post	June 20, 2002
Experts warn of second-hand smoke perils	The Globe and Mail	June 20, 2002
Unfashionable deaths	National Post	July 8, 2002
Mice have fewer cancer tumours after caffeine put onto skin	The Globe and Mail	August 27, 2002
Poor dying at a faster rate: report	National Post	September 27, 2002
FDA speeds up QLT's cancer drug review: Tariquidar	National Post	October 4, 2002
QLT stock climbs on FDA ruling	The Globe and Mail	October 4, 2002
Xillix looks to next generation	The Globe and Mail	October 7, 2002
Second-hand smoke case may spark more claims	The Globe and Mail	October 11, 2002
Help with butting out just a phone call away	The Globe and Mail	October 14, 2002
Vancouver sets pace on health	National Post	October 16, 2002
Employers must help addicts kick the habit	The Globe and Mail	October 16, 2002
Cities' states	National Post	October 19, 2002
B.C. doctors testing herbs to prevent lung cancer	The Globe and Mail	October 24, 2002
The cancers to come	The Globe and Mail	October 29, 2002
There's a reason they call it getting wasted	The Globe and Mail	November 16, 2002
International	The Globe and Mail	December 4, 2002

Awareness turns to terror: Breast cancer	National Post	December 17, 2002
and in selling tobacco	The Globe and Mail	December 23, 2002
Death: What are the odds?	National Post	December 31, 2002
Cancer, polio shots not linked, study says	The Globe and Mail	January 2, 2003
Ligand drug may boost lung-cancer-fighting gene	National Post	February 5, 2003
AstraZeneca lung-cancer drug linked to 173 Japan deaths	National Post	February 7, 2003
QLT trial suspended on toxicity fears	The Globe and Mail	February 22, 2003
QLT halts trial on cancer drug	National Post	February 22, 2003
Smoke hazard	National Post	February 24, 2003
Baseball: Bonds' father fights cancer	National Post	March 1, 2003
Bobby Bonds fighting cancer	The Globe and Mail	March 1, 2003
Isis's lung-cancer drug fails late-stage trial	National Post	March 3, 2003
Can we conquer the big C?	National Post	April 2, 2003
Lung, breast cancer rates take dramatic jump	National Post	April 16, 2003
Cancer deaths down only slightly	National Post	April 17, 2003
E-nose knows how to detect cancer	National Post	May 8, 2003
QLT to halt trials on new cancer drug	National Post	May 13, 2003
To the end, dying mother told students: smoking kills	The Globe and Mail	May 20, 2003
Be truthful about passive smoking	National Post	May 20, 2003
Social Studies	The Globe and Mail	May 21, 2003
Shareholders go easy on QLT	The Globe and Mail	May 23, 2003
International	The Globe and Mail	June 2, 2003
The birth of the Celtic tiger	National Post	June 9, 2003
We do not know	National Post	June 10, 2003
The second-hand smoke myth: junk science's greatest triumph,	National Post	June 13, 2003
Diesel exhaust particles increase cancer risk	National Post	July 8, 2003
British Columbia: Lung cancer patients die with guilty conscience	National Post	August 14, 2003
Blood test can determine risk for lung cancer	National Post	September 3, 2003

Roche, Genentech, OSI hit with cancer drug setback	National Post	October 2, 2003
Liars are in trouble	The Globe and Mail	October 4, 2003
In Brief: Jury rules lung cancer not caused by smoke	The Globe and Mail	October 17, 2003
P.E.I.: Lung cancer forces NDP leader to take leave of absence	National Post	November 28, 2003
PET scans can eliminate some surgeries	National Post	December 1, 2003
Women run double the risk of lung cancer	The Globe and Mail	December 2, 2003
Lung cancer risk is double for women: Scientists baffled by shift in disease	National Post	December 2, 2003
'Not best use of tax dollars': doctors say	National Post	January 15, 2004
The real reason women smokers are at greater risk	The Globe and Mail	January 17, 2004
Dying for a living	The Globe and Mail	March 13, 2004
Ontario is right to be leery	National Post	March 25, 2004
Defending PET scanners	National Post	March 27, 2004
Cancer patient's PET dilemma	National Post	March 27, 2004
Ideological clash is killing the sick	National Post	April 10, 2004
Estrogen raises cancer risk for women	National Post	April 14, 2004
Cancer cases to soar by 60%: study says	National Post	April 15, 2004
Roche has high hopes for new cancer drug	National Post	April 27, 2004
OSI shares soar on positive lung cancer drug results	The Globe and Mail	April 27, 2004
Biomira (bRA-TSX)	The Globe and Mail	April 27, 2004
Look more closely at Prozac study	The Globe and Mail	June 4, 2004
Butt out before 30 and live much longer	National Post	June 24, 2004
$280B rogue war on tobacco	National Post	July 12, 2004
Drug brings hopes for asbestos victims	The Globe and Mail	July 29, 2004
Why aren't we fighting for lung cancer patients?	The Globe and Mail	July 29, 2004
DiagnoCure a leader in race to detect cancer	The Globe and Mail	September 18, 2004
Meet the new face of philanthropy	The Globe and Mail	September 18, 2004
Biomira on fast track to where?	National Post	September 30, 2004

Caution: Vitamin supplements may be hazardous to your health	The Globe and Mail	October 21, 2004
Sick lungs choking more of us	The Globe and Mail	November 17, 2004
Former N.S. Liberal leader sick with lung cancer	The Globe and Mail	November 23, 2004
DiagnoCure upbeat on lung cancer test	The Globe and Mail	December 2, 2004
Biomira shares skyrocket on test results	National Post	December 4, 2004
Biomira partnership reports success with cancer drug trials	The Globe and Mail	December 4, 2004
Lung cancer also has a genetic link	The Globe and Mail	December 22, 2004
Lung cancer drug pulled from European market	The Globe and Mail	January 5, 2005
Light cigarettes save lives, studies show	National Post	January 20, 2005
Smoking risk higher for women	National Post	February 1, 2005
Gretzky's mother treated for lung cancer	The Globe and Mail	March 2, 2005
Toronto hospitals' costly scanners sit idle PET-CT: Cannot afford to operate PET-CT machine	National Post	March 16, 2005
Roche expects sales boost after lung cancer trial	The Globe and Mail	March 16, 2005
Roche defies biotech malaise: 'Personalized medicine'	National Post	April 5, 2005
ABC's Jennings battles lung cancer	The Globe and Mail	April 6, 2005
ABC's Peter Jennings reveal he has lung cancer: 'I will learn to cope'	National Post	April 6, 2005
NCI halts trial of AstraZeneca cancer drug	The Globe and Mail	April 19, 2005
'Thread of hope'	National Post	April 20, 2005
Too much of a good thing	National Post	May 3, 2005
Mattamy Homes to hold charity raffle of its smallest house - for only $5 a ticket	National Post	May 12, 2005
Big bump in tobacco tax urged to combat cancer	The Globe and Mail	May 13, 2005
In China, cigarettes are a kind of miracle drug	The Globe and Mail	June 6, 2005
Spurs forward Robinson vows to keep moving following death of mother from lung cancer	National Post	June 13, 2005
A silent monster lurks in the basement	The Globe and Mail	June 23, 2005
Lung cancer breakthrough 'astonishing'	The Globe and Mail	June 24, 2005
Aspirin won't reduce cancer	National Post	July 6, 2005
Experts weighing life's many risks	The Globe and Mail	July 12, 2005

For lung cancer patients, longer life in a bottle	The Globe and Mail	July 14, 2005
Despite medical progress, lung cancer a dreaded diagnosis	The Globe and Mail	August 9, 2005
Reeve widow reveals her fight for life: 'we are optimistic'	National Post	August 10, 2005
Christopher Reeve's widow battling lung cancer	The Globe and Mail	August 10, 2005
Social Studies	The Globe and Mail	August 12, 2005
Ames quietly grabs a share of the lead	National Post	August 12, 2005
Tobacco's effects	National Post	August 15, 2005
Smoke screen: CT scans may show early tumours, but is it worth the cost?	National Post	August 17, 2005
Strahl stricken with cancer	The Globe and Mail	August 23, 2005
Asbestos-related disease is growing: Has doubled in Ontario	The Globe and Mail	August 24, 2005
Cancer patients warned over antioxidants	The Globe and Mail	September 23, 2005
Pot less of a cancer risk than tobacco, study suggests	The Globe and Mail	October 18, 2005
Genetics determine if your mom was right about brussel sprouts	The Globe and Mail	October 28, 2005
Future considerations Series: Canada's War on Cancer	National Post	October 28, 2005
It's a boy: male chromosomes have that little extra oomph, scientists speculate	The Globe and Mail	December 16, 2005
Lou Rawls suffering from lung, brain cancer	The Globe and Mail	December 17, 2005
Cancer: The nose knows	The Globe and Mail	January 18, 2006
Rights sale boosts Biomira	The Globe and Mail	January 27, 2006
Slow patient recruitment stumps Aeterna drug trial	The Globe and Mail	February 18, 2006
I need to be able to get my message across	The Globe and Mail	February 25, 2006
But she didn't even smoke	The Globe and Mail	March 11, 2006
Why natural can be risky	The Globe and Mail	March 21, 2006
Philip Morris loses appeal of $55-million to smoker's family	The Globe and Mail	March 21, 2006
Improving the odds of survival	The Globe and Mail	April 11, 2006
Beer may hike lung cancer risk	National Post	April 12, 2006

Suffering from a father's job,	The Globe and Mail	April 17, 2006
Keep cancer (and vampires?) at bay	The Globe and Mail	April 19, 2006
Cigarette warnings to get scarier: Aggressive campaign	National Post	May 23, 2006
'Matriarch' of anti-smoking movement dies at 61	The Globe and Mail	May 23, 2006
Lung cancer's not gender blind	The Globe and Mail	May 30, 2006
Dieting drivers beware	The Globe and Mail	June 2, 2006
So many patients and too few dollars	The Globe and Mail	June 5, 2006
Health experts sound alarm on radon	The Globe and Mail	June 14, 2006
Children still choke on parent's smoke	The Globe and Mail	June 29, 2006
Ontario late-stage cancer patients to access four costly new drugs at public's expense	National Post	July 8, 2006
Scans for lung cancer risk 'over-diagnosis'	The Globe and Mail	July 14, 2006
Tests will aid decisions about chemo, doctors hope	The Globe and Mail	August 10, 2006
Ottawa to stiffen guideline on radon levels in home	The Globe and Mail	August 14, 2006
Gene therapy cures two men of cancer	National Post	September 1, 2006
Two cancers soar in young adults	The Globe and Mail	September 12, 2006
Apples get their shine back	National Post	September 26, 2006
Scans detect lung cancer sooner	The Globe and Mail	October 26, 2006
Dying the good death: Experts examine consequences of end-of-life care	National Post	November 6, 2006
Words we all fear to hear	The Globe and Mail	November 14, 2006
Vow broken on cancer wait times	The Globe and Mail	November 21, 2006
Cancer's top five killers	The Globe and Mail	November 25, 2006
Smoking less won't cheat death	The Globe and Mail	November 29, 2006
Something malign this way comes	The Globe and Mail	December 9, 2006
Patients light up even after lung cancer	The Globe and Mail	December 15, 2006
National report	National Post	January 3, 2007
Drug trials spur shares of Biomira	The Globe and Mail	January 3, 2007
YM Biosciences in the hunt for holy grail of cancer killers	The Globe and Mail	January 18, 2007

MDs forced abroad for scanner training	The Globe and Mail	January 19, 2007
Healthy seasonings: Besides enhancing the flavour of food, spices can help fight disease	National Post	January 30, 2007
It was always for Alice	National Post	February 10, 2007
No funding for cancer drug tests	National Post	February 15, 2007
The good news and the bad news about pot	The Globe and Mail	February 16, 2007
Big Tobacco to fight ad ban,	National Post	February 19, 2007
Upside seen in anemic performance: Amgen faces rivals	National Post	February 28, 2007
Veteran fears thousands risk cancer: Ex-navyman exposed to ship's asbestos during WWII	National Post	March 6, 2007
CT scans don't cut smokers' deaths from lung cancer	The Globe and Mail	March 7, 2007
Cotton-fibre pollutant keeps lung cancer at bay	The Globe and Mail	March 9, 2007
U of T to divest $10-million in tobacco stock	The Globe and Mail	April 10, 2007
Death rate falling, more women living longer after diagnosis	The Globe and Mail	April 11, 2007
Breast cancer survival rates jump; 'Screening works'	National Post	April 11, 2007
Eat and drink your way to good health; 10 superfoods found to cut the risk of cancer	National Post	April 14, 2007
Cancer set to surpass heart disease as leading killer of Canada: StatCan	National Post	April 28, 2007
Metabolic disease drug gains popularity among terminally ill cancer patients	National Post	May 26, 2007
No money for a miracle	The Globe and Mail	June 2, 2007
Vitamin D: Will it fight disease where others have failed?	The Globe and Mail	June 11, 2007
Right-to-know law may apply to the little guys	The Globe and Mail	July 9, 2007
Cancer society calls on Ottawa to change tack and ban asbestos	The Globe and Mail	July 12, 2007
Compensate families of workers, panel rules	The Globe and Mail	July 29, 2007
One way Canada could lose some wait	The Globe and Mail	August 4, 2007
Ex-smokers still playing Russian roulette: study	National Post	August 30, 2007

How cancer research dollars get spent	The Globe and Mail	September 12, 2007
Mind-body' therapies to treat lung cancer	The Globe and Mail	September 14, 2007
We need more tobacco like a hole in the head	The Globe and Mail	October 4, 2007
Asbestos shame	The Globe and Mail	October 27, 2007
Lung cancer risk linked to red meat	The Globe and Mail	December 11, 2007
Smokers have one more thing to quit	The Globe and Mail	December 14, 2007
Scientists Warn Of Lung Cancer Epidemic Linked To Smoking Cannabis	National Post	January 31, 2008
Abortion, gunshot wounds, lung cancer: Who pays?	The Globe and Mail	February 7, 2008
Bayer, Onyx stop trials of drug Nexavar for lung cancer on disappointing results	National Post	February 19, 2008
Health Canada assessing risk of chrysotile asbestos	The Globe and Mail	February 22, 2008
Smokers who take vitamin E are at risk	The Globe and Mail	February 29, 2008
Truth is the first casualty of activism	National Post	March 15, 2008
Teaching hospitals better for lung surgery	National Post	March 19, 2008
'Double-whammy gene' deals smokers a biological blow	The Globe and Mail	April 3, 2008
Scarier living through chemistry	National Post	April 19, 2008
Antioxidant supplements may be deadly	The Globe and Mail	April 23, 2008
Pot and the post	National Post	May 24, 2008
Blowing smoke in Ontario	National Post	June 3, 2008
Romancing the bottle	National Post	June 4, 2008
Live	National Post	June 14, 2008
Cancer risk higher in female non-smokers	National Post	June 17, 2008
Gene test in works for lung cancer treatment	National Post	July 22, 2008
Can my countertops give me cancer?	The Globe and Mail	July 25, 2008
Chest pain may signal risk of heart disease	National Post	August 6, 2008
Putting a pretty face to a tragic statistic	National Post	August 16, 2008
Researchers seek lung cancer test	The Globe and Mail	September 17, 2008
Eli Lilly is named as ImClone suitor	The Globe and Mail	October 2, 2008
Drug combo doesn't help cancer survival	National Post	October 7, 2008

The new asbestos science scare	National Post	October 22, 2008
A deadly Canadian export	The Globe and Mail	October 23, 2008
Cancer society turns sights to farm pesticides	The Globe and Mail	November 12, 2008
Cancer patients missing key surgeries: report	The Globe and Mail	November 21, 2008
Cancer rates in U.S. slowly declining, study shows,	The Globe and Mail	November 26, 2008
Canadian Inuit have top rate of lung cancer,	The Globe and Mail	December 9, 2008
Inuit have highest rate of lung cancer; 58% of Canadian Inuit smoke every day, says Stats Canada	National Post	December 9, 2008
Cancer will become No. 1 cause of death by 2010; Smoking rates in developing world among the reasons	National Post	December 10, 2008
Hospitalization rates drop after smoking ban: study	The Globe and Mail	January 1, 2009
Haggard ready to perform after lung-cancer bout	The Globe and Mail	January 2, 2009
An update in the war on cancer; Number of cases rise while rates of mortality slow	National Post	January 14, 2009
Burns diagnosed with lung cancer	The Globe and Mail	January 22, 2009
Bill would help firefighters get lung-cancer benefits	The Globe and Mail	March 10, 2009
B. C. Introduces Legislation Adding Lung Cancer To Firefighters' Risks	National Post	March 10, 2009
Found: a c-word for cancer	The Globe and Mail	March 26, 2009
Report linking asbestos and cancer buried; Paper shelved in 'needless secrecy,' chairman says	National Post	April 16, 2009
Motive questioned in failure to disclose asbestos study	The Globe and Mail	April 22, 2009
Novelist 'hopes to see some projects through' after cancer diagnosis	The Globe and Mail	June 2, 2009
The Rubber Duckies	National Post	June 20, 2009
We do have to put a price on life	The Globe and Mail	September 10, 2009
Rising lung cancer rates in women call for new screening methods	The Globe and Mail	October 6, 2009
'Everybody smokes' attitude goes with the territory; Nunavut 'a generation behind' on	National Post	October 13, 2009

controlling cigarettes		
Each day like it's my last	National Post	October 17, 2009
Folic acid may raise cancer risk	The Globe and Mail	November 18, 2009
Cancer risk to town unclear in report on asbestos effects	The Globe and Mail	December 12, 2009
What scientists don't tell you about abortion	National Post	January 15, 2010
Cancer studies face national funding crisis	The Globe and Mail	January 16, 2010
Personalized health care: a new era in cancer treatment	National Post	February 3, 2010
Social Studies	The Globe and Mail	February 4, 2010
Express lessons on the road of life	The Globe and Mail	March 25, 2010
Strength of smoking addictions, ability to quit linked to variations in genetics	National Post	April 28, 2010
Cancer snapshot	National Post	May 20, 2010
Copper sulfates can kill microbes	The Globe and Mail	May 28, 2010
Protect your lungs with more vitamin B	The Globe and Mail	June 16, 2010
Fish oil tied to breast cancer prevention	The Globe and Mail	July 9, 2010
Breathe easy; JdJ Jewellery raises money for lung cancer	National Post	August 14, 2010
From the archives	The Globe and Mail	August 30, 2010
Cancer patients living longer	National Post	September 16, 2010
Rounding up the latest in science and research	The Globe and Mail	November 5, 2010
The scan that cures	National Post	November 6, 2010
Bon egg, bad egg: the heart risk debate	National Post	November 9, 2010
CT scans detect lung cancer earlier - but at what cost?	The Globe and Mail	November 16, 2010
Survival rates up for major cancers	The Globe and Mail	December 22, 2010

Appendix B: List of Operations

The below list provides all the operations related to the emphasis, themes, tones, frames and social actors.

Emphasis

- Low: Lung cancer is mentioned as a comparator to another cancer or disease that is the focus, or names the disease in a broader discussion.
- Medium: Lung cancer is featured as one several story vignettes, or an article discusses lung cancer in depth in a section of an article but also discusses or topics.
- High: The article focuses primarily on lung cancer and the issues related to the disease.

Themes:

- Asbestos: Mentions the link between asbestos and lung cancer; exposure can occur in either the workplace or the home.
- Radon: Mentions the link between radon and lung cancer.
- Pollution (other): Mentions the link between pollution, such as air pollution, and lung cancer.
- Smoking/Non-smoking: Mentions the links between smoking and/or secondhand smoke and lung cancer.
- Genetics/Hormones: Mentions the link between genetic predispositions to and/or hormonal influences on the development of lung cancer.
- Tobacco company: Mentions tobacco companies actions such as lawsuits and/or marketing practices and the link with lung cancer.
- Workplace exposure (non-asbestos): Mentions particular workplace exposure that causes lung cancer, such radon, and/or secondhand smoke.

- Pharmaceutical/Biomedical device developments: Mentions innovations in pharmaceutical and/or biomedical device for the clinical detection/screening/diagnosis, treatment and survival of lung cancer.
- Prevalence: Mentions the number of total cases of lung cancer in Canada or internationally.
- Incidence: Mentions the number of annual new cases of lung cancer in Canada or internationally.
- Age: Compares the prevalence and/or incidence of lung cancer between age groups, or focuses on the prevalence and/or incidence of lung cancer in a specific age group.
- Gender: Compares the prevalence and/or incidence of lung cancer between genders, or focuses on the prevalence and/or incidence of lung cancer in a specific gender.
- Race/Ethnicity - Compares the prevalence and/or incidence of lung cancer between races/ethnicities, or focuses on the prevalence and/or incidence of lung cancer in a specific race/ethnicity.
- Prevention: Mentions the primary prevention of lung cancer, such as risk reduction through non-smoking, at the individual and/or societal levels.
- Detection/Screening/Diagnosis: Mentions the clinical detection of, screening for and diagnosis of lung cancer.
- Treatment: Mentions the clinical/pharmacological treatment of lung cancer.
- Death: Mentions the population death rates of lung cancer in Canada or internationally, or mentions the potential for or death of a patient.

- Survival: Mentions population survival rates from lung cancer, mentioned survival outcomes through improved detection, treatment and healthcare system management, or discussed a particular patient's survival.
- Biomedical research: Mentions new findings from clinical studies into the biology of lung cancer, as well as research into new secondary prevention, treatment and survival methods.
- Socioenvironmental research: Mentions new findings of epidemiological and/or population health research into lung cancer.
- Fundraising: Mentions fundraising efforts to support lung cancer initiatives.
- Healthcare system management: Mentions the overall management of healthcare system resources, such as services and their delivery, with regard to lung cancer.
- Patient rights/Access to treatment: Mentions the need for patients to have access to treatment including overall clinical and palliative care.
- Patient experience: Discusses the individual patient experience with lung cancer.
- International: Discusses lung cancer outside a Canadian context.
- Risk: Any of mention of risk that cannot be coded within the above categories.
- Other: Any other themes that emerge that cannot be coded within the above categories.
- Home exposure (non-asbestos, non-radon): Mentions particular home exposure that causes lung cancer, such secondhand smoke.
- Vitamins: Mentions the link between vitamins and lung cancer.
- Marijuana: Mentions the link between marijuana smoking and lung cancer.

Tone:

- Optimistic: The article describes lung cancer in an optimistic or hopeful manner.

- Pessimistic: The article describes lung cancer unfavourably or pessimistically.
- Neutral/Mixed: The article presents a balanced view or a mix of optimistic and pessimistic tones.

Frames:

- Behavioural/Lifestyle: Issues are depicted as individual challenges and accentuate the individual's responsibility in rather than societal contributions to the emergence of disease, such as through smoking tobacco or marijuana, or taking vitamin supplements (Bryant, 2009; Clarke, 2005; Clarke & Everest 2006; Hust et al., 2006; Kwan, 2009; Lawrence, 2004).
- Biomedical: Issues are described in scientific/biological terms and/or discussed clinical care including disease screening, detection, diagnosis, treatment, survival and clinical research (Bryant, 2009; Clarke 2005; Clarke & Everest, 2006; Kwan, 2009).
- Socioenvironmental: Issues are related to societal and environmental causes of lung cancer such as tobacco marketing, pollution and poverty. Issues are examined in terms of disease incidence, prevalence, death and survival in society as a whole, or in terms of social categories such as gender, age, race/ethnicity, religion or socioeconomic status. Issues also discussed with regard to an individual's wellbeing and social support for patients. (Bryant, 2009; see also Clarke & van Amerom, 2008; Kwan, 2009; Lawrence, 2004).
- Structural/Critical: Issues are discussed with a concern toward how society "organizes and distributes social and economic resources within a population" (Bryant, 2009, pp. 35-36). as a result of political ideology (see also Clarke & van Amerom, 2008; Kwan, 2009,

Lawrence, 2004); A critique of the issues around lung cancer is offered with particular attention toward public policy change.

Social actors:

- Biomedical expert: A medical, biological and/or clinical specialist who speaks under the guise of clinical expertise on the biology of lung cancer.
- Socioenvironmental expert: An epidemiologist or social or environmental expert who speaks under the guide of population health, social or environmental expertise.
- Government official: An official who speaks on behalf of the government at the municipal, provincial, national and/or international levels.
- Politician: An elected official who speaks on behalf of constituents.
- For-profit representative: A representative of for-profit company that provides profitable solutions, such as pharmaceutical/biomedical device companies, financial analysis firms, tobacco companies, etc.
- Non-government/non-profit representative: A non-profit, non-government stakeholder organization representative of particular interests such as an association or advocacy group like the Canadian Cancer Society or the Cancer Advocacy Coalition of Canada.
- Patient (non-celebrity): A non-commonly known person who develops lung cancer.
- Patient (celebrity): A commonly-known person who develops lung cancer.
- Family/Friends: Those personally connected to the patient.
- Judicial expert: A law official such as a lawyer who represents a client, or a judge who pronounces on a legal case.

Appendix C: Coding Guide[6]

Variable	Categories
Newspaper	1) The Globe and Mail 2) National Post
Article Title	
Year of publication	1) 2001 2) 2002 3) 2003 4) 2004 5) 2005 6) 2006 7) 2007 8) 2008 9) 2009 10) 2010
Month of publication	1) January 2) February 3) March 4) April …. 9) September 10) October 11) November 12) December
Date of Publication	1) 1 2) 2

[6] In developing this codebook, I adapted a template belonging to Dr. Martine Lagacé. The grid provided me with guidance on how to structure the coding and what to look for (e.g., coding for newspapers, dates, etc.) in my investigation.

	3) 3 … 29) 29 30) 30 31) 31
Day of the Week of publication	1) Monday 2) Tuesday 3) Wednesday 4) Thursday 5) Friday 6) Saturday 7) Sunday
Positioning of article	1) Cover 2) Non-cover
Article section (e.g., World News, Business)	
Page number (e.g., A1, B12)	
Word length (specification)	
Name of journalist	
Theme	1) Asbestos 2) Radon 3) Pollution (other) 4) Tobacco companies 5) Workplace exposure 6) Prevalence (total cases) 7) Incidence (new cases) 8) Age 9) Gender 10) Race

	11) International 12) Genetics/Hormones 13) Prevention 14) Detection/Diagnosis/Screening 15) Treatment 16) Pharmaceutical/Biomedical device developments 17) Biomedical research 18) Fundraising 19) Healthcare system management 20) Smoking/non-smoking 21) Death 22) Survival 23) Patient rights/Access to treatment 24) Risk 25) Other 26) Socioenvironmental research 27) Patient experience 28) Home exposure 29) Vitamins 30) Marijuana
Theme - Notes	
Dominant Frame	1) Biomedical 2) Socioenvironmental 3) Behavioural/Lifestyle 4) Structural/Critical
Additional Frame (2) (3) (4)	1) Biomedical 2) Socioenvironmental 3) Behavioural/Lifestyle 4) Structural/Critical
Frame - Notes	
Tone	1) Optimistic

	2) Pessimistic 3) Neutral/Mixed
Tone – Notes	
Emphasis	1) Low 2) Medium 3) High
Emphasis – Notes	
Social Actors	1) Biomedical expert 4) Government official 7) Politician 10) For-profit representative 13) Non-government/Non-profit representative 16) Patient (non-celebrity) 19) Patient (celebrity) 22) Family/Friends 25) Judicial expert 28) Other 31) Socioenvironmental expert
Social Actor - Notes	
Smoking status of patient mentioned	1) Yes 2) No 3) Does not apply
If YES, Smoking status	1) Former/non-smoker 2) Smoker
Dynamics of interaction - Notes	
Text that discusses Lung Cancer	