

THE PENNSYLVANIA STATE UNIVERSITY
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TRANSPARENCY IN NATIONAL MEDIA SOURCES OVER TIME WITH REGARDS TO
THE DISCUSSION OF HEART DISEASE

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ABSTRACT

The main purpose of this paper was to find out whether the transparency used to convey the topic of heart disease in national media sources changes over time. The concept of transparency is an important aspect of journalism, providing credibility to the journalist, and better informing the public of the topic at hand. Heart disease, the number one killer of Americans, is a popular and important topic in the national media.

I predicted that transparency in national media sources over the past fifty five years has increased with regards to the discussion of heart disease. I tested this by coding articles from eight national media sources with a coding scheme for transparency. The main focus of analysis was the number of specialists and research studies included in articles. These numbers were recorded and graphed.

Results showed that over time the national media sources in this country have become less transparent with regards to heart disease. A drastic decrease in the use of specialists and research studies was seen. As this is a cursory study, future ideas are provided in order to continue the investigation into the decrease in transparency with regards to heart disease as it is conveyed through national media sources. The importance of furthering this study is paramount to the longevity of the health of the American public.

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Chapter 1

Introduction

Media is a crucial part of our society. According to Croteau and Hoynes, media and society as we know it in this country are fused. The average American adult spends around five hours a day engaged in some sort of media source (Croteau & Hoynes, 2014). The United States prides itself on freedom of speech and freedom of press. During the foundation of this country, special care was taken with regards to the importance of the press, and in appreciation for this role in maintaining an educated society, special protections were provided to the press under the First Amendment (Cornog, 2005). This freedom has allowed our country to become educated and successful in numerous ways. For example, national media sources allow us to understand politics and the world around us. Without these sources, we would not be educated on the changes made within the government, the day to day events of places around in our communities and beyond, and other aspects of daily life that in turn have a large effect on our society (Croteau & Hoynes, 2014).

As stated above, the media has an immensely important role in providing public awareness. Whether it is through the explanation of legislature before the signing of a large and influential bill, such as the Affordable Care Act of 2010 shown in “Looking to the Affordable Care Act for help” (Downs, 2011), presentation of a new scientific study, such as an outbreak in cancer funding shown in “Enlisting viruses as commandos in a war on cancer” (Hale, 2015), or through the interpretation of recent increases in organized crime as shown in “Gang crackdown in New Jersey leads to more than 60 arrests” (Mansnerus, 2006), the media is the public’s window into the inner workings of society. Media sources are exceptionally crucial with regards to public health articles (Griffiths & Knutson, 1960). The media often provides the necessary gateway between weighty science articles and the public. This is shown through the immense role that mass media play in the communication of public health.

The main benefits of mass media with regards to public health are “mobilizing and supporting local agencies, bringing together partnerships of public, voluntary, and private sector bodies, and informing and educating the public, but also setting the agenda for public debate on the health topic” (Catalan-Matamoros, 2011). By providing information and opening up the conversation of various health topics, the public is forced to come to the realization of risk associated with various dangers affecting public health. By providing access to this information, the public is able to avoid various risk factors and be aware and alert for the possibility of dangers within their own body.

Through the years, the public has demanded transparency from national media sources. Transparency in the relation of information to the public is critical to the education of the reader. By providing reliable sources, consulting with experts in the field, and identifying causes and solutions to some of the problems in society, the media is able to provide the most effective knowledge base to the public. Kovach and Rosenstiel (2014) write in their book *The Elements of Journalism: What Newspeople Should Know and the Public Should Expect*, that transparency allows journalism to be the system of news and information that it is in today’s society. If the purpose of the media is to convey the truth to the public, as Kovach and Rosenstiel (2014) contend, then the ultimate way for journalists to accomplish this is to express that what the journalist is capable of knowing is laid out in front of the reader with sources and methods included. Therefore, the journalist needs to provide as much information about the sources that they are using for their story as possible. The reader should feel as though they have access to any extra source of information that the journalist had available in order to construct a story.

In thinking about how a media source and author can convey transparency, a few key factors should be considered (Kovach & Rosenstiel, 2014). Who are the sources for this article? Are those sources listed explicitly, in order for the reader to trace back to the origin of the fact presented, or did the author summarize sources into a unique story piece. What is the background of these sources? Are they closely related and reliable with regards to the topic at hand? When studying sources, it is important to look at the use of multiple sources in order to either strengthen a journalist’s statement, or to provide

perspective to different sides of a common issue (Kovach & Rosenstiel, 2014). In the words of Rosenstiel (2014), “show how the reporting was done and why the people should believe it”.

Transparency is not only important for the reader, it is also important for the author. By being transparent, an author earns credibility and trust from the pool of readers to whom they are writing. Transparency also allows for the cross checking of sources. By utilizing a variety of sources, inconsistencies in theories listed as facts can be checked and corrected before the information is released to the public for absorption (Kovach & Rosenstiel, 2014). As with any field, it is important for journalists to earn the credibility of the public. By earning that credibility, they gain the support of a fan base of readers, from their publication source, and from the nation as a whole. The aspect of fact checking is a built in system for journalists to check themselves before they publish a piece. Incorrect news reporting loses credibility for the journalist and the news source itself. For example, after the Boston bombings in 2013, articles were released informing the public that a suspect had been arrested when, in fact, none had. The sources of this information were tracked, and arrests were made (Farhi, 2013). The public and the government hold presenting the truth to the utmost importance, contributing to the fact that the fact checking aspect of transparency is of high benefit to both author and reader of news sources.

It is my belief that, as a country, our most important and vital topics of conversation should possess the highest level of transparency. As already stated, transparency provides creates credibility, allows for fact checking, and ensures that the author is fully delivering the sources used in order to create the argument surrounding the article. This importance, as discussed, is of the utmost importance with regards to public health. Within the realm of public health, certain diseases pose to be of greater significance to the general public, given their frequency and severity. These topics, in my opinion, deserve the most attention in the field of public health reporting, and they also deserve the most scrutiny by the public in order to ensure accuracy.

Heart disease is the number one killer of Americans. According to the Centers for Disease Control and Prevention (2014), this disease alone claims an average of 610,000 lives each year. The most

striking fact, though, is that many of these deaths are preventable, making it of the utmost importance that information surrounding this disease is conveyed with transparency. Unlike many other diseases, the risks for heart disease often stem from human behavior and decisions that are made (National Institute of Health (NIH), 2015). Because of this, news about heart disease is of the utmost importance to the American public. Over the past 55 years, great progress has been made in what we know about the disease. Countless studies have been performed in order to hone in on risk factors and prevention methods, as represented by the 130 studies obtained from the multiple sources analyzed in the results and discussion section of this report. These studies have allowed for the growth and development of society's understanding of the complexity of the disease as a whole.

In preliminary research surrounding the disease, the primary focus has been on broad sweeping causes of heart disease. These trends can be seen in the following articles, which are analyzed later on in this thesis: "Agency May Study Link Between Diet and Heart Disease" (1962), "Cardiology: New Culprit in Heart Disease?" (1965), "Atherosclerosis" (Spain, 1966), and "The Real Villain in Heart Disease" (Gilmore, 2015). Later research focuses more frequently on analysis of the different causes of heart and prevention methods associated with these causes. This can be seen in articles such as "Linking Infection to Heart Disease" (Grady, 1998), "Lipoprotein in Heart Disease" (Lawn, 1992), "The Heart of a Woman" (Gupta, 2008), and "New Tests go Beyond Cholesterol to Find Heart Disease Risks" (2001). The accurate and thorough presentation of this information to the public is crucial to the health and wellbeing of our society. An educated society is able to take charge of its own future, helping to create a society that is invested in its own health.

In order to further investigate the transparency of the media with regards to heart disease, I conducted a cursory study into eight national media sources. Using articles from these sources ranging from the 1960s to present day, I was able to look into the question of whether or not national media sources have become more or less transparent in their conversations surrounding heart disease. With the

great increase in knowledge surrounding the disease, I believe that national media sources have become more transparent in presentation of information of the disease over the past fifty-five years.

Chapter 2

Methodology

2.1 Source Selection

A variety of sources were chosen in order to create a broad spectrum of analysis. *The Huffington Post* and *U.S. News & World Report*, two newer news sources that either predominantly or solely rely on the internet for distribution, were chosen in order to analyze the current trends in media. America's two largest newspapers, *The New York Times* and *The Wall Street Journal*, were chosen in order to represent daily print news with a broad circulation. *Newsweek* and *TIME*, popular weekly magazines, were chosen to represent more popular weekly news sources that run a wide variety of stories. *Scientific American* was chosen due to its reputation as a valuable source of scientific information. This source will help to deduce trends within the scientific community. Lastly, *National Journal* was chosen due to its presence as a political news source with a pulse on national policy. I feel that this variety of sources is conducive to a cursory study, as it provides a variety of different styles of media that represent a target audience of close to the entire American population.

2.2 Sampling

Articles were collected for sampling from the following sources: *The Huffington Post*, *National Journal*, *Newsweek*, *The New York Times*, *Scientific American*, *TIME*, *U.S. News & World Report*, and *The Wall Street Journal*. Article selection was based on each decade, selecting one article from each news source, if available, from the following ranges:

January 1, 1960 – December 31, 1969
 January 1, 1970 – December 31, 1979
 January 1, 1980 – December 31, 1989
 January 1, 1990 – December 31, 1999
 January 1, 2000 – December 31, 2009
 January 1, 2010 – March 25, 2015

Searches were performed through the following search engines:

Table 1. Search Engines Based on Source

Source	Search Engine
<i>The Huffington Post</i>	www.huffingtonpost.com
<i>National Journal</i>	www.nationaljournal.com
<i>The New York Times</i>	www.nytimes.com with membership
<i>Newsweek</i>	www.lexisnexis.com
<i>Scientific American</i>	http://www.nature.com.ezaccess.libraries.psu.edu/scientificamerican/archive/index.html
<i>TIME</i>	www.time.com with membership
<i>U.S. News & World Report</i>	www.usnews.com
<i>The Wall Street Journal</i>	www.search.proquest.com

The input “heart disease” was used in each search engine in order to obtain results. Quotation marks were used in order to ensure that the terminology was searched as a unit. Results were sorted using the “relevance” feature of each respective site. The most relevant article presented for each decade was selected for analysis. This method was chosen over other methods in order to ensure that the most relevant and representative articles were chosen. By having equivalent articles, a more direct and unbiased comparison could be applied.

This method was chosen over using a random number table that generates random results in article selection. Although this method was fully considered, the articles selected using this method were not of equivalent value due to the fact that the main subject of the article did not always revolve around heart disease, and the varying topics prevented unbiased analysis from occurring. I found that it was not accurate to compare an article surrounding a new breakthrough in heart disease research with an article talking about a famous actor who had passed away from heart disease. Therefore, a new and more effective system was utilized to ensure that all articles had a main focus of heart disease.

2.3 Coding

In order to determine if national media sources have become more transparent over time, after articles were selected from each news source, a code was applied to each source in order to determine overall transparency. Key aspects of transparency, as discussed above, were included in order to extrapolate the most important aspects of each article. The use of statistics, specialists, and research was included in order to determine how freely the authors of the articles released the background content of their pieces, an element that, as discussed earlier, provides the greatest deal of transparency. The use of diagrams was considered, as their inclusion allows the reader a great deal of extra information surrounding a topic. Whether or not “heart disease” was included in the title and the overall placement of the article were considered in order to determine how prevalent this article was in the eyes of the readers. The coding scheme, shown in Table 2 below, was enacted through reading each article and recording the necessary information in a chart in order to best determine transparency and maintain consistency.

Table 2. Article Coding Scheme

Coding Scheme	
Date of Article	mm/dd/yyyy
Location	0- main body
	1- front page
Headline	0- "heart disease" not included in title
	1- "heart disease" included in title
Word Count	Number of words, not including title
Statistics	0- not included
	1- included
Specialists	Number of specialists consulted
Physician	0- no physician consulted in article
	1- at least one physician consulted in article
Diagrams	0- no diagrams/figures included
	1- diagrams/figures included
Research	Number of research studies referenced in article
Topic	1- heart disease causes
	2- heart disease prevention/treatment
	3- heart disease causes and prevention/treatment
	4- heart disease in subgroups
	5- healthcare
	6- health statistics
	7- other

Chapter 3

Results

The coding scheme was applied to each article selected via the screening process. The results are outlined based on news source in the tables below.

Table 3. *The Huffington Post* Source Analysis

<i>The Huffington Post</i>			
<i>2000s</i>		<i>2010s</i>	
Date	09/21/2009	Date	11/23/2014
Location	0	Location	0
Headline	1	Headline	1
Word Count	932	Word Count	972
Statistics	1	Statistics	1
Specialists	4	Specialists	1
Physician	1	Physician	1
Diagrams	0	Diagrams	0
Studies	1	Studies	0
Topic	2	Topic	4

Table 4. *National Journal* Source Analysis

<i>National Journal</i>			
<i>1980s</i>		<i>1990s</i>	
Date	12/02/1989	Date	01/17/1995
Location	0	Location	0
Headline	0	Headline	0
Word Count	122	Word Count	27
Statistics	1	Statistics	1
Specialists	0	Specialists	0
Physician	0	Physician	0
Diagrams	1	Diagrams	0
Studies	0	Studies	0
Topic	6	Topic	6
<i>2000s</i>		<i>2010s</i>	
Date	09/17/2008	Date	12/15/2011
Location	0	Location	0
Headline	1	Headline	1
Word Count	181	Word Count	218
Statistics	1	Statistics	1
Specialists	0	Specialists	1
Physician	0	Physician	0
Diagrams	0	Diagrams	0
Studies	0	Studies	1
Topic	2	Topic	1

Table 5. *The New York Times* Source Analysis

<i>The New York Times</i>					
<i>1960s</i>		<i>1970s</i>		<i>1980s</i>	
Date	02/11/1964	Date	03/25/1973	Date	02/24/1985
Location	0	Location	0	Location	0
Headline	0	Headline	1	Headline	1
Word Count	2233	Word Count	7700	Word Count	299
Statistics	0	Statistics	1	Statistics	1
Specialists	0	Specialists	17	Specialists	1
Physician	0	Physician	1	Physician	1
Diagrams	0	Diagrams	1	Diagrams	0
Studies	0	Studies	28	Studies	1
Topic	5	Topic	3	Topic	1
<i>1990s</i>		<i>2000s</i>		<i>2010s</i>	
Date	02/17/1998	Date	05/01/2007	Date	09/24/2013
Location	0	Location	0	Location	0
Headline	1	Headline	0	Headline	1
Word Count	1302	Word Count	823	Word Count	169
Statistics	1	Statistics	1	Statistics	1
Specialists	3	Specialists	4	Specialists	0
Physician	1	Physician	1	Physician	0
Diagrams	0	Diagrams	0	Diagrams	0
Studies	2	Studies	1	Studies	0
Topic	3	Topic	2	Topic	4

Table 6. *Newsweek* Source Analysis

<i>Newsweek</i>					
<i>1970s</i>		<i>1980s</i>		<i>1990s</i>	
Date	12/19/1977	Date	09/18/1989	Date	08/11/1997
Location	0	Location	0	Location	1
Headline	0	Headline	0	Headline	0
Word Count	4092	Word Count	1429	Word Count	3293
Statistics	1	Statistics	1	Statistics	1
Specialists	16	Specialists	5	Specialists	9
Physician	1	Physician	1	Physician	1
Diagrams	0	Diagrams	0	Diagrams	0
Studies	7	Studies	5	Studies	10
Topic	3	Topic	1	Topic	1
<i>2000s</i>		<i>2010s</i>			
Date	05/17/2004	Date	02/15/2010		
Location	0	Location	0		
Headline	0	Headline	0		
Word Count	1507	Word Count	1512		
Statistics	1	Statistics	1		
Specialists	6	Specialists	4		
Physician	1	Physician	1		
Diagrams	0	Diagrams	0		
Studies	0	Studies	0		
Topic	4	Topic	2		

Table 7. *Scientific American* Source Analysis

<i>Scientific American</i>					
<i>1960s</i>		<i>1970s</i>		<i>1980s</i>	
Date	08/1966	Date	04/1972	Date	11/1980
Location	0	Location	0	Location	0
Headline	1	Headline	0	Headline	1
Word Count	4890	Word Count	419	Word Count	3566
Statistics	1	Statistics	1	Statistics	1
Specialists	9	Specialists	1	Specialists	4
Physician	1	Physician	1	Physician	1
Diagrams	1	Diagrams	0	Diagrams	1
Studies	15	Studies	1	Studies	7
Topic	3	Topic	2	Topic	6
<i>1990s</i>		<i>2000s</i>		<i>2010s</i>	
Date	06/1992	Date	01/2003	Date	11/2011
Location	0	Location	0	Location	0
Headline	1	Headline	0	Headline	0
Word Count	4362	Word Count	3900	Word Count	1664
Statistics	1	Statistics	1	Statistics	1
Specialists	8	Specialists	0	Specialists	2
Physician	1	Physician	0	Physician	1
Diagrams	1	Diagrams	1	Diagrams	0
Studies	11	Studies	1	Studies	4
Topic	1	Topic	7	Topic	1

Table 8. *TIME* Source Analysis

<i>TIME</i>					
<i>1960s</i>		<i>1970s</i>		<i>1980s</i>	
Date	07/23/1965	Date	11/12/1973	Date	06/01/1981
Location	0	Location	0	Location	0
Headline	1	Headline	0	Headline	1
Word Count	297	Word Count	694	Word Count	4832
Statistics	1	Statistics	0	Statistics	1
Specialists	1	Specialists	1	Specialists	18
Physician	1	Physician	1	Physician	1
Diagrams	0	Diagrams	0	Diagrams	0
Studies	1	Studies	0	Studies	8
Topic	1	Topic	7	Topic	2
<i>1990s</i>		<i>2000s</i>		<i>2010s</i>	
Date	03/09/1995	Date	01/17/2008	Date	03/25/2015
Location	0	Location	0	Location	0
Headline	1	Headline	0	Headline	0
Word Count	103	Word Count	661	Word Count	325
Statistics	1	Statistics	1	Statistics	1
Specialists	0	Specialists	1	Specialists	1
Physician	0	Physician	1	Physician	1
Diagrams	0	Diagrams	0	Diagrams	0
Studies	1	Studies	1	Studies	1
Topic	6	Topic	4	Topic	1

Table 9. *U.S. News & World Report* Source Analysis

<i>U.S. News & World Report</i>			
<i>2000s</i>		<i>2010s</i>	
Date	05/26/2009	Date	02/06/2014
Location	0	Location	0
Headline	1	Headline	1
Word Count	285	Word Count	426
Statistics	1	Statistics	1
Specialists	1	Specialists	1
Physician	1	Physician	0
Diagrams	0	Diagrams	0
Studies	1	Studies	2
Topic	1	Topic	6

Table 10. *The Wall Street Journal* Source Analysis

<i>The Wall Street Journal</i>					
<i>1960s</i>		<i>1970s</i>		<i>1980s</i>	
Date	08/05/1962	Date	03/04/1974	Date	01/13/1984
Location	0	Location	0	Location	0
Headline	1	Headline	1	Headline	1
Word Count	600	Word Count	240	Word Count	780
Statistics	1	Statistics	1	Statistics	1
Specialists	1	Specialists	1	Specialists	3
Physician	1	Physician	1	Physician	1
Diagrams	0	Diagrams	0	Diagrams	0
Studies	1	Studies	1	Studies	1
Topic	3	Topic	6	Topic	1
<i>1990s</i>		<i>2000s</i>		<i>2010s</i>	
Date	1/16/1990	Date	06/22/2001	Date	11/01/2011
Location	0	Location	0	Location	0
Headline	1	Headline	1	Headline	1
Word Count	300	Word Count	841	Word Count	972
Statistics	1	Statistics	1	Statistics	1
Specialists	1	Specialists	4	Specialists	4
Physician	1	Physician	1	Physician	1
Diagrams	0	Diagrams	0	Diagrams	0
Studies	1	Studies	3	Studies	2
Topic	2	Topic	2	Topic	4

3.1 Location and Headline

The location of the article, referring to whether or not it was in the main body of the news source or on the front page, was deemed to be relatively insignificant, as only one article, the 1997 *Newsweek* article, “The Heart Attackers”, proved to be on the front page. All of the remaining articles appeared in the body of the news source that it was published in or it was simply posted online, a most news stories are posted at this point in time.

Whether or not “heart disease” was included in the headline also proved to be rather arbitrary with regards to time and news source. While the inclusion of the terminology in the title would generally lead to more transparency in speaking towards the subject, most articles, if not stating the terminology explicitly, came up with a way to elicit the same response. Examples of this are including references to the heart, cardiology, or well-known causes of the disease, such as cholesterol. A full list of titles can be

found in the appendix of this report, yet given the lack of overall trend and the brevity of this report, further analysis will not be provided in this topic.

3.2 Word Counts

Word counts varied a good amount based on source and within sources. An average of the length of articles based on decade is provided below in order to get a more cohesive view of any trends present in the data over time. As can be seen through the data outlined, on average, the total word count of the articles decreases over time. This trend will be discussed more in-depth in the discussion and conclusion section of this report.

Table 11. Word Counts per Decade

Decade	Average Word Count
1960s	2005
1970s	2629
1980s	1838
1990s	1565
2000s	1365
2010s	782

3.3 Statistics

The use of statistics was almost ubiquitous among articles from each source. While the length and specificity of the statistics presented varied among sources, a point that is rectified by the analysis of the number of studies and specialists referred to in each article, the overall use of statistics is commonplace when discussing the disease as a whole.

3.4 Specialists

The amount of specialists referred to or quoted in an article was one of the most variant aspects of analysis. In order to better visualize the changes and trends within news sources and among decades, a bar graph is provided below. The data for this graph is found in the tables for each individual news source above.

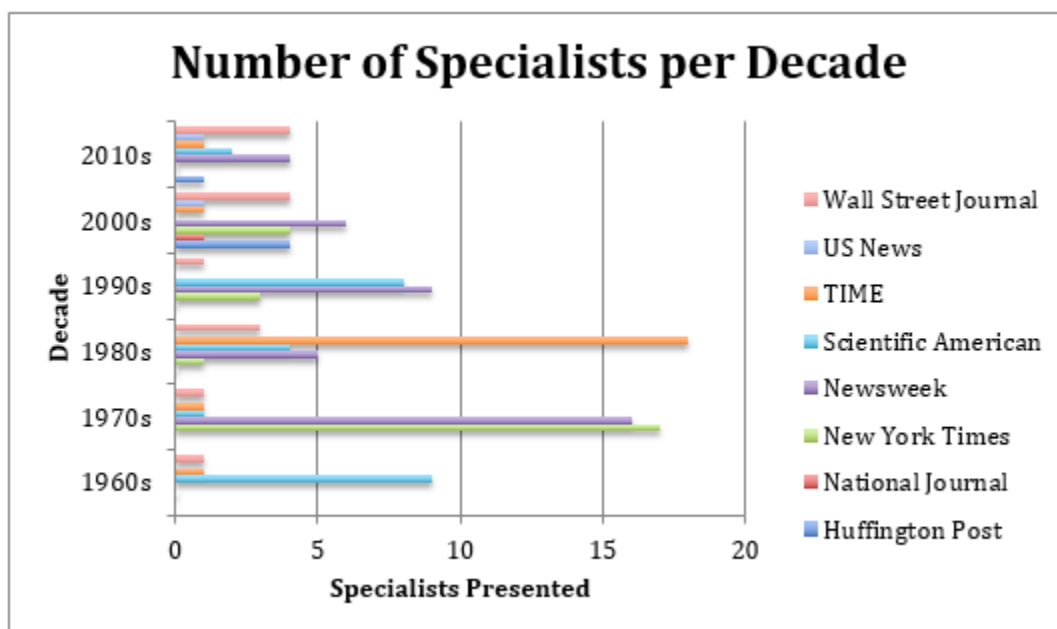


Figure 1. Number of Specialists Cited per Decade

While trends vary slightly based on news source, an overall decrease in the use of specialists can be seen as time progresses. Significant peaks are seen during both the 1970s and 1980s, with significant drop off in the 2000s and 2010s. The only source with any significant increase during this drop period is *The Wall Street Journal*.

3.5 Physician

Whether or not a physician was cited was largely dependent on the use of specialists as a whole. As can be seen through the charts representing each news source, in most cases, if a specialist was quoted

in some capacity, that person was often a physician, relating to the fact that they are truly the specialists in this field. The overall number of physicians referenced was usually proportional to the total number of specialists utilized in the article.

3.6 Diagram/Graphic Presentation

The use of diagrams in order to visualize data was utilized relatively infrequently among sources. While some sources, such as *Scientific American*, relied on diagrams heavily in almost all of their articles, with the exception of the 1972 and 2011 article, most sources did not. The only other diagrams presented came from *The New York Times* 1972 article, and the *National Journal* 1989 article. While it seems as though diagrams were utilized more in earlier decades, a definitive trend cannot be determined.

3.7 Research

The use of research studies, similar to the use of statistics, also varied greatly based on decade and source. In order to visualize changes and trends, a graph is provided below based on the total amount of research mentioned in each article based on source and decade.

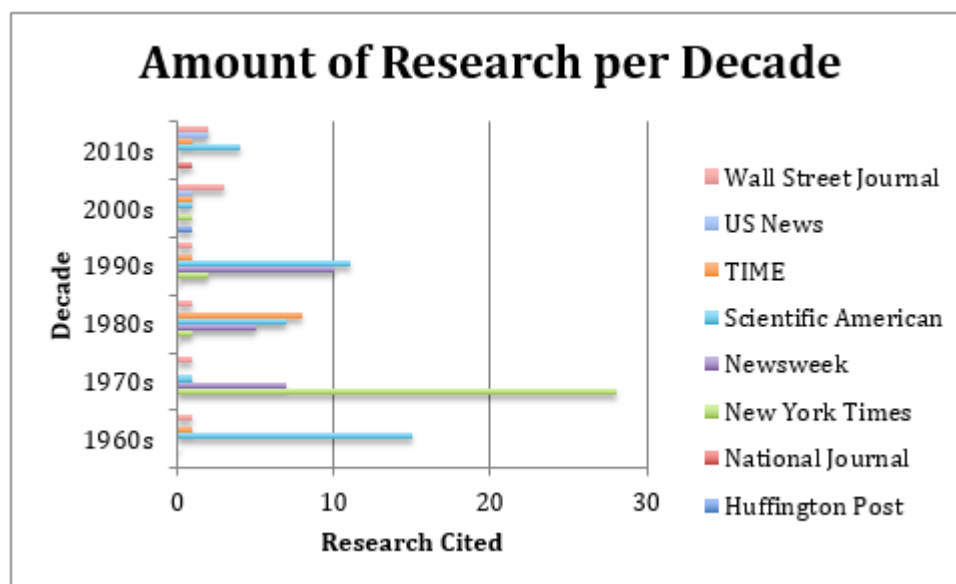


Figure 2. Amount of Research Cited per Decade

An overall decrease in the use of cited research can be seen over time, with the most studies presented in the 1970s through the 1990s. The use of research tapers drastically during the 2000s and 2010s. The only source with a noticeable increase during this time frame is *The Wall Street Journal*.

3.8 Topic

The overall topic of each article stayed relatively consistent over time regardless of source. While some studies went into more detail than others, most articles focused on the causes of heart disease, the prevention or treatment of the disease, or both. One noticeable trend in topic was the increase in the topic of heart disease in subgroups. Five articles focused on this topic, and all of these were published after 2000. Four of these five articles focus on heart disease in women, showing a recent push towards educating the public on the dangers the disease poses towards a group it has often neglected to speak towards. The fifth article focused on heart disease in infants. This increase in breadth is the most noticeable trend in topic content.

3.9 Search Results

As stated in the methodology section of this report, the amount of search results retrieved from each source per decade was recorded. This data, found in a chart in the appendix of this report, was then used to create the bar graph shown below.

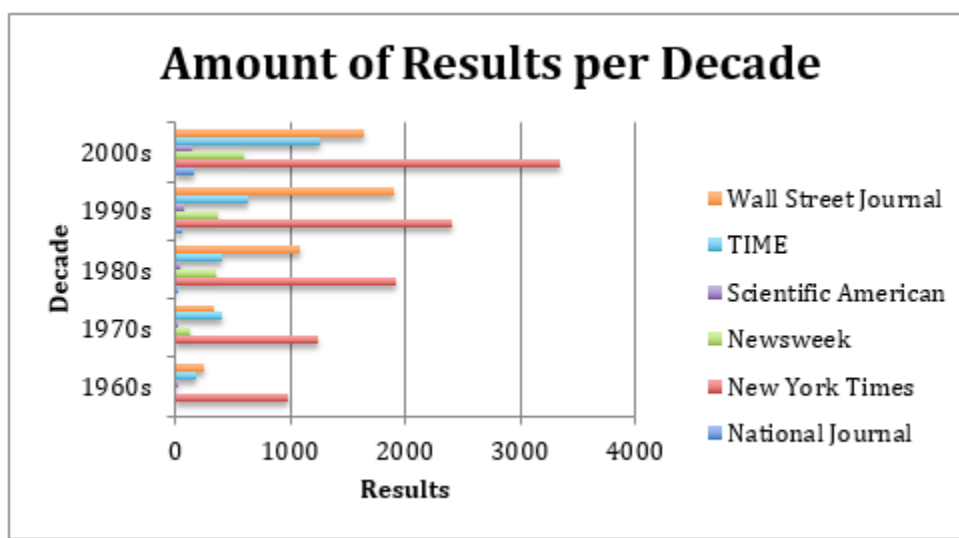


Figure 3. Amount of Results Collected per Decade

Decades were only included up through the 2000s, as the 2010s are still ongoing. *The Huffington Post* and *U.S. News & World Report* were left out of this analysis due to faulty or non-existent counts of overall results. As can be seen in the graph, a strong positive correlation exists between decade and amount of search results obtained.

Chapter 4

Discussion

When considering transparency, I considered many qualities to look for in an article. Yet, for this given topic, I believe that the most important aspects to consider are the use of specialists and research to aid in the presentation and explanation of information surrounding the topic. Because of the scientific nature surrounding the topic of heart disease, the use research and specialists in the health field provide the transparency that is crucial to accurate presentation and absorption of the information surrounding the disease. According to Kovach and Rosensteil (2014), the use of multiple sources is the most effective form of transparency. By consulting with multiple specialists, a source is providing highly reputable information that accents and magnifies the findings summarized by the author. Specialists provide credibility, and by utilizing them, the public has a direct connection into the studies and statistics that are taking place. While the author may be able to summarize a study or explain new findings, bringing in the external source adds a lot to the credibility of the article and the information it contains (O'Reilly, 1982). This is especially pertinent with regards to scientific articles, as studies are constantly emerging regarding new findings, and the information that we have as a society is ever changing. Providing the backing of the most up to date scientific findings provides the transparency that is desired by the American public.

The use of research has a very similar effect on the explanation of information as well as the overall tone of the article. By incorporating research, the author is again giving the reader a direct connection to recent, relevant, and scientifically valid information. As stated with the discussion on the use of specialists, an author can summarize facts without referring to the original research, but allowing the reader to have insight into that study allows for much more transparency. I believe that it is also easier for an author to skew information to the audience by not presenting actual research, or multiple research studies for comparison and validation. The fact checking aspect of transparency prevents the fabrication

of information by forcing comparison or validation by multiple studies. If an author chooses not to include various research studies, or none at all, they are preventing the reader from access to fact check and make comparisons. By writing the source of the original data, readers are able to read through the studies themselves and make further conclusions on the topic. This type of presentation provides the most transparency.

Based on the statistics and graphs presented in the results above, a definitive trend can be seen in the use of studies and statistics as a method of data presentation in popular news sources. Almost ubiquitous among sources is the drastic decline in the use of research and specialists in the 2000s and 2010s. While the spikes in both the use of specialists and studies varies slightly, with some extremes present in each source, the decline across all sources for the 2000s and 2010s is something that cannot be ignored. As stated, the factors of research and specialists are the two most critical aspects of transparency. This steady decline indicates that national media sources have started to become less transparent. The only exception, with regards to both categories, is from *The Wall Street Journal*. This news source has remained transparent, and potentially become even more transparent over the years, perhaps contributing to the consistent highest levels of readership.

While the overall decrease in the use of studies may be argued to be because of a decrease in the amount of studies produced, this proves not to be true. Funding for heart disease research has skyrocketed over the last fifty years. With funding around \$512 million in 1986 (Johnson), this number increased to a hefty \$1.65 billion projected through 2015 (National Institute of Health). While numbers are not readily available before this time frame, this increase shows the overall capacity to produce more studies, as this funding is distributed in order to create or maintain studies in the field of heart disease.

With the drastic drop off, comes a decrease in overall article length. This trend can be seen based on the averages provided in the table of word counts. As a whole, news pieces are getting shorter and are limiting the use of studies and specialists in order to present information. The trend to move news online may also be attributed to this decline in word count, specialists, and studies. Both *The Huffington Post*

and *U.S. News & World Report*, both of which are solely online, lacked a great deal in the use of facts and figures. Instead, these pieces were written more like a blog, a tactic helpful in obtaining online readership. Over the past fifteen years, the internet has taken over. This shift can be seen directly through the facts and figures of media transparency.

Chapter 5

Conclusion

I believe that as a society, we are becoming less and less receptive to long pieces of text that include statistical analysis, first hand studies, and the use of professionals to support conclusions. This transparency, provided much more fully throughout the 1960s, 1970s, 1980s, and to some extent the 1990s, has decreased rapidly throughout the past fifteen years. With the move to online sources, and the ability for people to gain bits and pieces of information through tweets, Facebook posts, and other forms of social media, the way that we are receiving news is changing. Just under half of Facebook's users say that they use the site for obtaining news, the majority of which is centered around entertainment (Anderson & Caumont, 2014). With shortened articles, authors are pushed to provide news fast and efficiently, without bogging down their articles with weighty studies and second opinions.

As stated in the introduction of this paper, the use of media is a powerful tool to raise public awareness. Transparency acts as the way to best create trust and provide truthful and accurate information to the public. Transparency is best shown through the use of studies in articles in order to compare sources, provide backing for existing claims, fact check between various sources, and add credibility to the author. Over the past fifty five years, the inclusion of research studies and the use of credible specialists has declined greatly. This research shows that we are becoming less and less transparent over time, even though funding for research has increased dramatically. The importance of this finding is paramount. The American public is no longer being given access to the most current studies regarding the deadliest disease in the country. This disease costs \$313.8 billion a year in direct medical expenditures, making it the most expensive disease that our country is facing (Centers for Disease Control and Prevention). Adding the fact that heart disease is often preventable, the issue with less transparent national media sources regarding the disease needs to be addressed.

Because this was just a cursory study, I believe that the next step is to broaden the search, both with regards to the number of sources as well as the number of articles collected. While I was limited by these factors, having a larger database of articles to code and compare would allow for more breadth in discussion. A variety of other news sources should also be included in order to expand that aspect of the study as well. I believe that it would also be interesting to compare current print stories with current online news stories regarding heart disease from sources that cover both types of media.

The American public needs to demand more transparency from national media sources. Ideally, sources should be utilized as much as possible. This decrease in transparency should be presented to national media sources as well as the national government in order to raise awareness of the increasing problem. Without support from the media and government, the public will remain at a disadvantage, with limited amounts of knowledge being disseminated to the public.

The future of this study is important, and if results continue to show that transparency is decreasing over time, steps must be taken in order to ensure that the trend is reversed. Heart disease is killing hundreds of millions of Americans each year. As I have shown, with the huge increase in funding, new studies are out there to be written about. Yet, the use of studies and specialists is decreasing drastically in the texts. The American public deserves to know the implications of certain life choices over their future. The use of research and specialists to implicate the importance and relevance of the disease is crucial to creating an environment of knowledge and ownership over one's health. A future of a healthy America should be of the utmost importance to this country, but without all of the facts, this future may be less clear.

Appendix

Search Results Per Decade					
	1960s	1970s	1980s	1990s	2000s
<i>National Journal</i>	-----	-----	19	51	166
<i>The New York Times</i>	980	1238	1924	2401	3350
<i>Newsweek</i>	-----	125	349	365	606
<i>Scientific American</i>	27	32	47	78	141
<i>TIME</i>	174	410	408	628	1262
<i>The Wall Street Journal</i>	247	345	1090	1908	1634

Articles for Analysis		
Source	Title	Date
The Huffington Post		
2000s	"Killing the Killers: How We Can Eliminate Heart Disease and Cancer"	September 21, 2009
2010s	"Heartbreaking News: Heart Attack in Young Women"	November 23, 2014
National Journal		
1980s	"The Numbers Game- The Death Toll"	December 2, 1989
1990s	"Summary- Fact of the Day"	January 17, 1995
2000s	"Grants for Women's Heart Disease Research"	September 17, 2008
2010s	"Nearly All Americans Have At Least One Heart Disease Risk Factor"	December 15, 2011
The New York Times		
1960s	"Excerpts From the President's Message to Congress on Health and Medical Care"	February 11, 1964
1970s	"The real villain in heart disease"	March 25, 1973
1980s	"Heart Disease Tied to Poverty"	February 24, 1985
1990s	"Linking Infection to Heart Disease"	February 17, 1998
2000s	"Heart Scans: Finding More Than You May Need to Know"	May 1, 2007
2010s	"Heart Disease in Infants"	September 24, 2013
Newsweek		
1970s	"Diet Crazes"	December 19, 1977
1980s	"Cholesterol Confusion"	September 18, 1989
1990s	"The Heart Attackers"	August 11, 1997
2000s	"Putting It All Together"	May 17, 2004
2010s	"Heart to Heart; Four leading cardiologists open up about how to combat America's No. 1 killer"	February 15, 2010
Scientific American		

<i>1960s</i>	"Atherosclerosis"	August 1966
<i>1970s</i>	"Science and the Citizen"	April 1972
<i>1980s</i>	"The Rise and Fall of Ischemic Heart Disease"	November 1980
<i>1990s</i>	"Lipoprotein in Heart Disease"	June 1992
<i>2000s</i>	"Rebuild the Food Pyramid"	January 2003
<i>2010s</i>	"Cholesterol Conundrum"	November 2011
TIME		
<i>1960s</i>	"Cardiology: New Culprit in Heart Disease?"	July 23, 1965
<i>1970s</i>	"Medicine: Dr. Cardiology"	November 12, 1973
<i>1980s</i>	"Taming the No. 1 Killer: Heart Disease"	June 1, 1981
<i>1990s</i>	"Heart Disease Study"	March 9, 1995
<i>2000s</i>	"The Heart of a Woman"	January 17, 2008
<i>2010s</i>	"High Blood Pressure Deaths Are Way Up: CDC"	March 25, 2015
U.S. News & World Report		
<i>2000s</i>	"Gum Disease, Heart Disease Share Genetic Link"	May 26, 2009
<i>2010s</i>	"The Facts on Heart Disease"	February 6, 2014
The Wall Street Journal		
<i>1960s</i>	"Agency May Study Link Between Diet and Heart Disease"	August 15, 1962
<i>1970s</i>	"Heart-Disease Deaths Said Falling For Middle-Aged"	March 4, 1974
<i>1980s</i>	"Anti-Cholesterol Treatment Can Cut Risk of Heart Disease Up to 50%"	January 13, 1984
<i>1990s</i>	"'PET Scanning' System Tracks Heart Disease"	January 16, 1990
<i>2000s</i>	"New Tests Go Beyond Cholesterol to Find Heart Disease Risks"	June 22, 2001
<i>2010s</i>	"Gender Gap: The Risks of Heart Disease For Women"	November 1, 2011

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ACADEMIC VITA

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Education

Schreyer Honors College
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Work Experience

Counselor at The Double H Ranch - Lake Luzerne, NY Summer 2013/2014

- Worked to provide the traditional camp experience to kids ages 6-16 facing life-threatening diseases
- Provided personal care and emotional and physical support to the 800 campers served
- Designed and enacted science programming for all age ranges

Intern at CSL Behring - King of Prussia, PA Summer 2012

- Worked 4 days a week, reporting to Dr. Jeannie Joughin, the Global Head of Business Development.
- Responsibilities included organizing meetings, contacting individuals from other companies, planning and organizing schedules for trips, creating slides for presentations, and organizing company information

Volunteer at Main Line Surgery Center - Bala Cynwood, PA May 2010 - May 2015

- Responsibilities include helping patients in the pre- and post-operative area, retrieving family members, retrieving items needed in the operating room, and prepping rooms for cases.
- Have clocked over 300 hours of volunteer services since beginning

Research

Research Assistant to Stephen Knabel Nov 2012 - Sept 2013

- Researched *Listeria monocytogenes* in a self-designed experiment with the potential of discovering a new epidemic clone using isolates from the CDC and current outbreaks

Research Assistant to David Hughes Jan 2012 - May 2012

- Research involved understanding how a specific parasitic fungus targets carpenter ants with the end hope that this research will lead to biologically and environmentally friendly insecticides. Compiled a database of ant and fungal species to determine patterns of infection

Skills/ Activities

Special Events Director for the 2015 Penn State Dance Marathon Apr 2014 - Apr 2015

- Serving on the Executive Committee of the largest student run philanthropy in the world.
- Responsibilities include leading 20 Captains and 120 Committee Members as we plan various events for the THON community.
- Events include: the THON 5K (8,000 participants), the Family Carnival (2,400 attendees), and the Road to THON Celebration (a formal banquet for 780 guests)

Member of Parmi Nous Senior Honor and Tradition Society Sept 2014 - May 2015

- Leaders in the Penn State community work together to ensure unity, honor, and tradition within Penn State

Morale Captain for the 2014 Penn State Dance Marathon Sept 2013 - March 2014

- Responsibilities included leading a team of 35 individuals, holding weekly meetings, and organizing a timeline in five minute intervals for the 46-hour THON weekend

Member of Science LionPride Sept 2011 - May 2015

- Responsibilities include giving tours to perspective science students, interacting with science alumni, and acting as a liaison between science students and the administration

Schreyer Honors College Orientation Logistics Team Lead 2012 and 2013

- Responsibilities included leading a team of 20 while planning and executing activities throughout the orientation