SCIENTIFIC NEWS AS A GENRE: A LINGUISTIC ACCOUNT OF 'DISTORTION' OF SCIENTIFIC INFORMATION

Imelda Suhardja
i.suhardja@sms.ed.ac.uk

Abstract

The communication gap that exists between the scientific community and the public should not be underestimated. Bridging this gap is important, especially in medical research as its findings will affect the public at large. The communication gap can be bridged through popularisation of science. In science popularisation, science journalists function as mediators who can translate and convey scientific information to the public. However, scientific news, which refers to the reporting of scientific information by science journalists, is reported by the scientific community to be 'distorted'. The term 'distortion' has been used by the scientific community to refer to biased and sensationalised reporting. In minimising 'distortion', a variety of remedies, such as codes of conduct, guidelines, 'precision journalism', and 'critical medical journalism', have been offered by the scientific community. The emergence of these remedies suggests that the journalists should be held responsible for the 'distortion' that occurs in scientific news reports. Nevertheless, the efficacy of these remedies is questionable. Thus, the present study will provide an alternative account of the 'distortion' that is reported to occur in scientific news. This study will argue that, instead of viewing 'distortion' in terms of bias and sensationalism, the term 'distortion' could be used to refer to the gap between scientific news reports and scientific research reports. Consequently, 'distortion' could be explained with reference to scientific news reporting as a specific genre.

1. Introduction

"This mediation requires the intervention of a new professional figure: a 'third person' (in general the science journalist) who can manage to bridge the gap between the scientist and the non-scientific audience, by understanding the former and communicating his ideas to the latter."
(Bucchi, 1996:376)

The communication gap between the scientific community and the wider public needs to be bridged. This is because scientific knowledge is produced not only for the scientific community but as part of a wider social responsibility. The presence of the gap can also be evidenced in the failure in the communication between experts and non-experts, such as the miscommunication that often occurs in doctor-patient interaction (Calsamiglia, 2003). The need to bridge the gap is particularly important in medical research as its findings are of direct interest to the public. The process of bridging this gap is known as 'popularisation of science' (Nash, 1990:12).

The term 'popularisation of science' is equated with 'popular scientific writing' (Calsamiglia, 2003:139), which includes scientific news reports in newspapers, popular scientific magazines such as *Scientific American* and *New Scientist*, and television documentaries. In the present study, popularisation of science is viewed as the context for investigating one of the aspects of science journalism, which is 'distortion' of scientific news. In popularisation of science, the media is given the role of mediator (Bucchi, 1996:376, 1998:3) or translator (de Semir, 2000:125). As mediator or translator, science journalists translate and convey scientific information to the public. Scientific news, which refers to the reporting of scientific information by science journalists, is produced to bridge the communication gap between the scientific community and the public.

The mass media can take the form of print media such as newspapers and magazines and

broadcast media such as radio and television. Science coverage in print media is further differentiated into general public such as those published in daily and weekly newspapers, general magazines such as the *Time*, & science magazines such as the *New Scientist*. Majority of print media has a separate section called 'science' and/ or 'health'. The type of print media that will be assessed in the present study is newspapers. In newspapers, science reporting takes the form of news brief, hard news, and articles. Articles can be written as explanatory feature, interpretive reports, and investigative reports (Friedman, 1986:23).

However, there are problems in using science journalism as a means of bridging the gap between the scientific community and the public. The way the scientific community and the public regard scientific 'objects' is different (Calsamiglia, 2003). Scientists view scientific objects as having an 'imminent' value in scientific context while the public view scientific objects as having a value that is external to theories and methods. What is valued by the public is the application of the theories and methods and how it might benefit the society in general. Furthermore, there is also a difference between 'truth' in science and media (de Semir, 2000). Scientific truth exists relative to previous research and is subject to revision. Although there are many uncertainties in scientific discoveries, they can be used as a progression to a new knowledge. In contrast, the media requires absolute truth, where the truth is black and white, clear-cut and simple (de Semir, 2000:125). The present study will argue that these problems lead the scientific community to argue that scientific reports in the media are 'distorted'. The report of 'distortion' is mostly derived from the scientific community because they are the producers of scientific information.

The notion of 'distortion' has been used by the scientific community to refer to bias (Shuchman & Wilkes, 1997; Hammersley, 2003) and sensationalism (Ransohoff & Ransohoff, 2001). Hammersley (2003:328) argued that 'distortion' can be linked to the notion of bias in sociological research. 'Distortion' is defined by Hammersley (2003:338) as 'negative evaluation of the degree of correspondence between media account and aspects of reality to which it refers'. That is, 'distortion' occurs when the evaluation of the content of scientific research articles and its report in the media show that there is no correspondence. Schuman and Wilkes (1997), on the other hand, assessed bias in terms of journalists' tendency to cover a particular topic and rely on a particular source, mainly medical journals. Bias in terms of tendency to focus on a particular topic and dependence on a particular source is also reported by Entwistle and Hancock-Beaulieu (1992) and Entwistle (1995). Additionally, bias has also been assessed in terms of the lack of reporting of risks (Nelkin, 1985:53). In terms of sensationalism, Ransohoff and Ransohoff (2001) argued that sensationalism refers to exaggeration in the reporting of scientific findings. Sensationalism has been assessed in terms of exaggeration in the reporting of hope and health risks of a medical treatment (Shuchman & Wilkes, 1997) and overemphasis in the reporting of the benefit of a treatment (Bubela & Caulfield, 2004). Unlike previous studies which used the notion of 'distortion' in terms of bias and sensationalism, the present study will use the term 'distortion' to refer to the difference in the scientific reports that is published in the newspapers with those that is published in the scientific research articles.

In summary, this shows that popularisation of science, which can be used as a process of bridging the communication gap between the scientific community and the public, will be used in the present study as the context for accounting for the 'distortion' in scientific news that is reported in the newspapers. The notion of 'distortion' in the present study refers to the difference between scientific news reports and scientific research reports.

2. Focus of the study
The focus of the present study is the 'distortion' of health and medical news reports in the

newspapers. The term 'distortion' is used in the present study to refer to the difference between scientific news reports and scientific research reports. Examples of newspaper reports that are categorised as health and medicine are reports on medical research such as the study on the benefits of drinking a glass of wine a day, medical treatment such as the finding of new drug treatments for breast cancer, and diseases such as bird flu. This section will review previous studies which showed that the media 'distorted' the health and medical news reports.

Using content analysis of medical stories in the newspapers, Entwistle and Hancock-Beaulieu (1992) showed that there is bias in the selection of primary topic, with the topic related to disease as the most common category. In another study, Entwistle (1995) used content analysis and interviews with journalists to show that journalists tend to rely heavily on medical journals as their source of information, regardless of the presence of other sources such as press release and letter pages in the journals. When a comparable study was conducted in the Netherlands by Van Trigt, Haaijer-Ruskamp, and De Jong-Van Deberg (1995), they found that journalists in the Netherlands also depend heavily on journals. However, Van Trigt, Haaijer-Ruskamp, and De Jong-Van Deberg (1995) differentiated between the source of ideas, which is used to create an interest, and source of information. They found that press releases and letter pages are only used as sources of ideas. Entwistle and Hancock-Beaulieu (1992), Entwistle (1995), and Van Trigt, Haaijer-Ruskamp, & De Jong-Van Deberg (1995) showed that the media 'distort' the reporting of health and medical news by selecting to report only a particular topic and relying on a particular source

On the other hand, Bubela and Caulfied (2004) used content analysis to measure the media 'hype' of genetic research. Their study compares the content of scientific research articles and their report in the newspapers in Canada, the United States, the United Kingdom, and Australia. The coders, who have a strong background in genetics and biotechnology, assessed the technical accuracy of the newspapers and rated the newspapers exaggeration of the findings and claims made in scientific research articles. Bubela and Caulfield (2004) found that the newspapers accurately convey the findings and claims made. This is in contrast to Shuchman and Wilkes (1997), who argue that the media tend to sensationalise the findings from health and medical research. However, Bubela and Caulfield (2004) found that newspapers have a tendency to report a particular topic and exaggerate this particular topic. Consequently, they concluded that exaggeration of a particular topic leads to the perception that the newspapers exaggerate the findings and claims made in scientific research articles. Woloshin and Schwartz (2002) showed that the exaggeration of claims is not only found in the newspapers but also in the press release. As such, sensationalism, either by the media or the press release, can lead to the 'distortion' in health and medical news reporting.

Previous studies reviewed above show that there is indeed 'distortion' in the newspaper reports of health and medical news. Therefore, the type of media that will be focused in the present study is newspapers, specifically British newspapers. These newspapers are *The Guardian, The Independent, The Daily Telegraph, The Times, The Daily Express, The Daily Mail, The Mirror, The Sun*, and *Metro*. These newspapers are chosen because they have high circulations. In the context of British newspapers, Entwistle and Hancock-Beaulieu's (1992) content analysis showed that the British newspapers do 'distort' health and medical coverage. However, unlike previous studies which viewed 'distortion' in terms to bias and sensationalism, the present study views 'distortion' as the difference between scientific news reports and scientific research reports.

In terms of methodology, while the use of content analysis could describe how scientific

news reports are written, it could not provide an account for the 'distortion' that occurs in scientific news. In accounting for 'distortion' of scientific news in general and of health and medical news in particular, this study will use genre analysis. That is, this study will argue that 'distortion' occurs because the genre of scientific news is different from the genre of scientific research articles.

3. From science journalism to medical journalism: accounts of 'distortion' in science and medical reports

According to Weingart (1998), the media is an independent entity from science. The media has its own news values and frames to adhere to. News values such as sensation, proximity, personalisation, and predictability are in contrast to values in science, such as truth and scientific accuracy (Weingart, 1998:870). Moreover, frames that are used by the media to structure and select information and knowledge are different from the frames in science. Therefore, Weingart (1998:870) argued that the media construction of their own reality, using 'different instruments, different approaches to 'reality', and different forms of representation' than science, led to the idea that the media 'distorts' scientific information.

Entwistle (1995) argued that the difference between newsworthiness in journalistic and scientific practices could affect the quality of health and medical news reporting, which could therefore contribute to the claim of 'distortion'. Newsworthiness in journalistic practice is shaped by media and political agendas, whereas in medicine, what is considered as newsworthy tends to focus on news which is related to hospital based medicine instead of social causes (Entwistle, 1995). This is shown by Bartlett, Sterne, and Egger (2005), who examined newsworthiness in terms of the difference in the type of information that are more likely to be press released by the journals and those that are more likely to be published in the newspapers. Newsworthiness is characterised according to study design, study location, population type, and topic. Newspapers tend to report studies that are based on observations rather than randomised trials, although both types of study designs are equally reported in press releases. This is because observational studies enable the public to relate the study to their personal experience (Bartlett, Sterne, & Egger, 2005:84). Studies from Britain are more likely to be published in newspapers than those that originate from developing countries, while there is little evidence showing the association between the press release and study location. Studies which relate to women's health, reproduction, and cancer tend to be press released and reported in the newspapers. However, newspapers tend to overemphasise these and ignore those studies which relate to babies, children, mental health, and the elderly. Bartlett, Sterne, and Egger (2005) also found that bad news is more likely to be reported in the newspapers even though the press release equally reports bad news and good news. Therefore, the journalists' tendency to focus on a particular kind of information, which contributes to the difference in what is considered newsworthy by journalists and scientists, could also account for the 'distortion' that is reported to occur in health and medical news.

Ransohoff and Ransohoff (2001) argued that health and medical news are 'distorted' because of the advantage that is obtained from sensationalism, both for the journalists and the scientists. The journalists gain by having their news stories published while the scientists gain publicity for their study. Schuman and Wilkes (1997), on the other hand, argued that sensationalism occurs due to the pressure that is imposed on the journalists to produce newsworthy stories. Stories that are not newsworthy will not be published by the editors, as such, to increase the newsworthiness, journalists sensationalise the news stories. An example of sensationalised news stories can be seen in the case of a breast cancer drug. The media reported that studies have shown the benefit of the drug *Herceptin* for breast cancer sufferers. This news story has lead to court cases due to a number of sufferers who are refused the treatment. Although it is mentioned by the media that the drug has been

licensed only for advanced stages of breast cancer and not early stages, what is emphasised and considered newsworthy is the benefit of the treatment and denial of that treatment for a few sufferers. This is supported by Bubela and Caulfied (2004) who showed that overemphasis in reporting the benefits of a treatment, instead of providing a balanced reporting of the benefits, risks, and costs of the treatment are important factors that contribute to exaggeration of news stories.

The accounts of 'distortion' provided by previous studies reviewed above led to the emergence of remedies which are offered, mostly by the scientific community, to ensure that scientific information that is reported in the media is not 'distorted'. Examples of these remedies are guidelines that are produced by the Social Issues Research Centre (http://www.sirc.org/publik/revised_guidelines.shtml); codes of conduct that are produced by the National Union of Journalists (http://www.nuj.org.uk/inner.php?docid=59); and advice to adopt 'precision journalism' (Meyer, 1991), 'evidence-based journalism' (Swan, 2005), or 'critical medical journalism' (Levi, 2001). Precision journalism, evidence-based journalism, and critical medical journalism are referring to the critical and investigative approach that should be adopted by science and medical journalists. That is, science and medical journalists should adopt a more scientific approach to reporting. For example, scientific methods that are used in scientific data collection and data analysis should be adopted by journalists when gathering and assessing the information obtained from their sources. However, the efficacy of these remedies is still questionable because the health and medical news reports is still claimed to be 'distorted'.

The present study will argue that 'distortion' occurs because scientific news and scientific research articles are of different genres. That is, 'distortion' in scientific news reports can be explained by understanding the genre of scientific news in general and health & medical news in particular. This study is providing an alternative explanation, a linguistic account, of the 'distortion' of scientific news reports. By demonstrating that the genre of scientific news is different from the genre of scientific research articles, this study will show that scientific news and scientific research articles have different communicative purposes, different structures, and different linguistic features. The claim of 'distortion' exists because of the lack of understanding of the specific features of a particular genre.

To summarise, unlike previous studies which argued that 'distortion' occurs due to the difference between journalists and scientists values and frames and the pressure that is imposed on journalists to produce a newsworthy story; this study will argue that 'distortion' occurs due to the difference in the genre specific features of scientific news and scientific research articles.

4. Genre analysis as an approach to 'distortion' in health and medical news reports
The approach to genre analysis that will be adopted in this study is the English for Specific Purposes (ESP). This is because the ESP approach can provide an explanation for the use of specific language in an institutionalised setting. The ESP approach would be able to provide an account of the 'distortion' in health and medical news reporting that the present study aims to answer. The ESP view genre as a class of communicative events with a set of goals that are shared by the member of a discourse community (Swales, 1981; 1990). The features that turn these communicative events into a genre are communicative purposes that are shared by the member of a discourse community. Additional features that are required in genre identification are structure and linguistic features. The structure and linguistic features that characterise the genre will reflect the communicative purposes. According to Bhatia (2005:23), the two important aspects in genre theory are the use of language in a conventionalised setting and the flexibility of genre. The use of language in a

conventionalised setting reflects the communicative purposes of the particular institution. The communicative purposes set the constraints of the discourse, in terms of structure and linguistic features. On the other hand, the flexibility of genre implies that the structure and linguistic features that characterise the genre can be exploited by the expert member of a discourse community. The view that genre is not static indicates that the ESP views text analysis as a process analysis (Swales, 1981:21). As a process, the analysis will attempt to explore the obligatory and optional moves taken by the writer in constructing the text. An example of genre analysis by the ESP is the genre identification of scientific research articles. Swales (1990) identified a three-move structure that characterised the Introduction section of scientific research articles. These moves are 'establishing a territory', 'establishing a niche', and 'occupying a niche'. The moves can be realised by linguistic features that are typical of a particular move. For example, the move 'establishing a territory' can be realised by stating current knowledge using preparatory statements such as 'There is evidence that …'. The move structure and linguistic features that are identified will reflect the communicative purpose of the Introduction section, which is to motivate and justify the need for a new study.

In viewing text analysis as process analysis, Swales (1981) posits a four-move schema for the Introduction section of scientific research articles, which is comprised of 'establishing the field', 'summarising previous research', 'preparing the present research', and 'introducing present research'. The four-move structure is then revised into a three-move structure, which consists of 'establishing a territory', 'establishing a niche', and 'occupying a niche' (Swales, 1990). The four-move structure was revised into a three-move structure because of the difficulties in separating Move 1, 'establishing a field', and Move 2, 'summarising previous research' (Swales, 1990:140). The problem that is encountered in separating Move 1 and Move 2 is due to the restriction in the original corpus, where only research articles with short introductions were used in the analysis. Moves are highly dependent on linguistic features, although context also plays a part (Nwogu, 1997). Nwogu (1997) argued that the linguistic features, such as preparatory statements, explicit lexeme, and summary statements, provide that part of the text its typical structure and content.

In identifying scientific news as a genre, this study will identify the communicative purposes that are shared by science journalists. The shared set of communicative purposes will be reflected in the move structure. The moves will be realised by the linguistic features which will provide characterisation for that particular move. In accounting for 'distortion' in health and medical news reporting, the genre of scientific news will be compared with the genre of scientific research article. The difference in the genre specific features of the two texts could be accounted for by the difference in the communicative purpose. That is, the difference in the move structure and linguistic features of scientific news reports and scientific research reports shows that there is 'distortion' in the reporting of scientific news. The 'distortion' could only be accounted for by the difference in the communicative purpose of scientific news reports and scientific research reports.

Genre Analysis of Health and Medical News Reports
The use of the ESP approach to analyse the genre of health and medical news has been shown by Nwogu (1991) in his analysis of the move structure and linguistic features of popularised medical texts. However, Nwogu (1991) did not identify whether the medical news that he analysed is hard news. Nwogu's (1991) genre analysis is placed within the context of popularisation of science, which is similar to the present study. The communicative purpose of scientific news is to report newsworthy scientific research to the public. In realising this communicative purpose, Nwogu (1991) identified nine moves that are typically Journalistic Reported Version (JRV) of medical research articles. The move structure is summarised in Figure 1.1.

INITIAL MOVES	MOVE 1: Presenting background information
	(1) by reference to established knowledge in the field
	(2) by reference to main research problem
	(3) by stressing the local angle
	(4) by explaining principles and concepts
	MOVE 2: Highlighting overall research outcome
	(1) by reference to main research result
	MOVE 3: Reviewing related research
	(1) by reference to previous research
	(2) by reference to limitations of previous research
	MOVE 4: Presenting new research
	(1) by reference to authors
	(2) by reference to research purpose
MEDIAL MOVES	MOVE 5: Indicating consistent observations
	(1) by stating important results
	(2) by reference to specific observations
	MOVE 6: Describing data collection procedure
	(1) by reference to authors
	(2) by reference to source of data
	(3) by reference to data size
	MOVE 7: Describing experimental procedure
	(1) by recounting main experimental processes
FINAL MOVES	MOVE 8: Explaining research outcome
	(1) by stating a specific outcome
	(2) by explaining principles and concepts
	(3) by indicating comments and views
	(4) by indicating significance of main research outcome
	(5) by contrasting present and previous outcomes
	MOVE 9: Stating research conclusions
	(1) by indicating implications of the research
	(2) by promoting further research
	(3) by stressing the local angle

Figure 1.1 Nwogu (1991:113) moves and sub-moves in typical JRV texts

Nwogu (1991:120) argued that the schematic structure of JRV texts is organised hierarchically due to the constraints in science journalists' social and professional routines. Some of the routines that are identified by Nwogu (1991) are the five-W beginning and the use of lead. The five-W, which is the who, what, where, when, and why, have to be presented in the first move of JRV texts. The nine moves identified by Nwogu (1991) are classified into Initial move, Medial Move, and Final move. Move 1, which functions to provide background explanation by presenting knowledge and highlight the research problem, can be realised using linguistic features such as prepositional phrases and temporal adverbs. For example 'In Britain …'. Move 2 functions to present the major outcome of the research in a form of a brief statement. This move can be realised using explicit lexical items such as '*the new research* has shown that …'. Move 3 aims to place the new research within the context of on-going research by providing the information that can be used to assess the contributions made. This move can be realised by negative verb forms such as 'there are *no studies* that show …'. Move 4 is used to present the purpose of the new research. This move can be achieved using explicit lexical clues such as 'the *aim* of the present study is …'.

Move 5, which functions to report the importance of the result in terms of what the writer considers of interest to the readers, can be achieved using explicit verb forms such as '… *reported* that …'. Move 6 corresponds with the information that is presented in the Method section of the scientific research article. This move aims to report the process of the data

collection and analysis, as such, this move can be realised in a single complex sentence. Move 7 is only used for experimental research or non-experimental research that focuses on data description and analysis. This move can be realised using statistical figures and measurements.

Move 8 is a major move in JRV texts because it aims to restate the main observations in the study by indicating significance, interpretations, justification, and contrast with previous studies. Linguistic features of this move include the use of rhetorical questions to explain principles and concepts, such as '… is common but how does it work?'; reporting verbs to indicate comments and views, for example 'Dr … says that …'; the use of direct quotation; the use of metadiscourse clues such as ' commenting on these findings ….'; and the use of exemplification and explicit lexical clues to contrast the new research with previous research, for example '*In contrast to* previous studies, the present study …'. Move 9, which is the last move, is used to present the view of the authors of the source on the contributions made, implication of the study, and future studies. This move aims to relate the new research with the audience and can be realised using explicit lexical clues and prepositional phrases to refer to the audience. For example, 'This study provided further support …' and 'In Britain …'.

According to Nwogu (1991), the move structure that he identified is in line with Van Dijk's (1985) principles in news production, although the only difference is in the placement of background information. These principles are:

important consequences come first

details of an event or actor come after overall mentioning of the event or person

causes or conditions of events are mentioned after the event and its consequences

context and background information comes last

Nwogu (1991) argued that Van Dijk's (1985) background information may be equated to the information in Nwogu's (1991) Move 8. The difference between Nwogu's (1991) division of moves and Van Dijk's (1985) principles could be due to the difference in the type of news that are used as data in Van Dijk's (1985) and Nwogu's (1991) study. Van Dijk (1985) used political hard news as data, while Nwogu's (1991) data is medical news that is collected from the 'science' section of a popular scientific magazine, *New Scientist*; a general magazine, *Newsweek*; and a newspaper *The Times* (Nwogu, 1991:112). By not differentiating the types of print media analysed, the move structure that is identified by Nwogu (1991) does not seem to be applicable to many scientific news reports in the newspapers. Moreover, Nwogu (1991) did not differentiate the types of scientific news reporting in the newspapers. Friedman (1986) argued that science reporting in the newspapers can take the form of hard news, features articles, and investigative reports. These reporting have different purpose and different structure, as such, they are of different genres. It seems that Nwogu's (1991) move structure is only applicable to feature articles or investigative reports, and not hard news.

This section shows that the move structure, and therefore the linguistic features, of medical news that are identified by Nwogu (1991) might not be applicable to health and medical news that are categorised as hard news. Therefore, the present study will attempt to counter the limitation in Nwogu's (1991) study by choosing to investigate a specific type of print media, which is newspapers, and a specific type of scientific news reporting in the newspapers, which is hard news. Although Bell (1991) analysed the hard news aspect of newspapers, Bell's model is derived from political hard news instead of health and medical hard news. Furthermore, Bell (1991) used narrative and schematic analysis, which could only describe the structure of hard news instead of accounting for the 'distortion' that is reported to occur in news reports.

RESEARCH DESIGN

The aim of the present study is to use genre analysis to account for the 'distortion' in health and medical news. This study hypothesises that 'distortion' is the result of the genre specific features of scientific news reporting in general and of health and medical news reporting in

particular.

The media that will be the focus of this study is print media, in particular newspapers because newspapers have a wider distribution than magazines and therefore a wider effect of 'distortion'. The newspaper articles will be collected from the different types of newspapers, which will include four quality newspapers (*The Guardian, The Independent, The Daily Telegraph, The Times*), four popular newspapers *(The Daily Express, The Daily Mail, The Mirror, The Sun*), and one free newspaper (*Metro*). These newspapers are chosen because they have high circulations according to the Audit Bureau of Circulations. In terms of the type of newspapers collected, the data could either include the different types of newspapers or only a particular type of newspaper. Although analysing a particular type of newspaper will provide an in-depth analysis, the finding will only be applicable to other types of newspapers. As different newspapers have different house styles, the finding could not be used to account for 'distortion' in scientific news in general. Therefore, analysis of the different types of newspapers will be more appropriate for the present study.

The data will be comprised of a corpus collection of health and medical news reports. The health and medical news reports that will be analysed in this study are those that are categorised as hard news. This is because hard news is reported to have a detrimental effect on science communication (Friedman, 1986:25). Friedman (1986) argued that to be categorised as hard news, the news reports need to meet the following criteria:

inverted pyramid style, where the conclusion is placed in the beginning of a news story

the who, what, where, when, why, and how of a news story are placed in the first few paragraphs and the rest of the articles are written in short paragraphs and short sentences

the news report is providing information about what is happening

Moreover, in identifying the news stories as health and medicine news as well as to ensure that the news reported are based on scientific research, these news stories need to meet one of the following criteria:

attribution to the scientists, which includes either the scientists' name or the generic term, such as scientists, researchers, experts, or clinicians, and the university or organisation with which the scientists are associated with or

the source of information, for example the name of the journal which published the study

In identifying scientific news as a genre, this study will identify the communicative purpose, move structure, and linguistic features of scientific news in general, and health and medical news in particular. Communicative purpose, which is an important aspect that differentiates one genre from another, is reflected in the move structure. The moves are realised by specific linguistic features, which will provide the moves with its typical structure. In accounting for the 'distortion' in health and medical news reporting, the present study will compare the genre of scientific news with the genre of scientific research article. The difference in the genre specific features of scientific news and scientific research article will show that there is a 'distortion' in the scientific news reporting. The 'distortion' can be interpreted in terms of the difference in the communicative purpose of scientific news reports and scientific research reports.

SAMPLE ANALYSIS

The sample analysis in this section will show how 'distortion' can be explained by aspects of genre. That is, identification of linguistic features of scientific news genre will show that these features are specific to scientific news because they are reflecting the communicative purpose of scientific news, which is to report newsworthy scientific research to the public.

Linguistic properties	Examples of analysis
The use of language which exaggerate scientific findings	Extract 1
	01 CANNABIS MAY HELP PREVENT ALZHEIMER'S MEMORY
	02 LOSS.
	03 Scientists at one of Spain's leading research centres claimed
	04 yesterday to have found evidence that cannabis helps prevent the

05   memory loss experienced by people suffering from Alzheimer's.
06   The potential breakthrough in understanding a disease that affects
07   nearly half a million people in Britain, and around nine million
08   worldwide, was made by a team led by María de Ceballos at the
09   Cajal Institute in Madrid. ….. Although the study is preliminary, it
10   was welcomed by patient groups.
11
12
(G55)

In extract 1 line 1, the *Guardian* headline 'cannabis may help prevent Alzheimer's memory loss' implies that there is a possibility of an association between cannabis and Alzheimer's memory loss. This is further reinforced by the term 'scientists ….. claimed' in the lead paragraph in line 3-4 and 'potential breakthrough' in line 7. The term 'scientist … claimed' is used to indicate that this claim is supported by scientific evidence, while the term 'potential breakthrough' is used to show the importance of the study. The importance of the study is emphasised further by the occurrence of 'a disease that affects nearly half a million people in Britain, and around nine million worldwide' in lines 7-9. This is meant to show that the discovery will have a positive effect on many people. Although the lead and first paragraph show the significance of the study, line 11 explicitly states that 'the study is preliminary'. This statement is presented in a subordinate clause and what is emphasised is that the study is 'welcomed by patient group'. Another indications that the study reported is a preliminary study can also be seen in the use of downtoners, such as 'may' in line 1, 'claimed' rather than 'have found' in line 4, and 'potential breakthrough' rather than just 'breakthrough' in line 7. The choice of the term 'breakthrough' to describe the study shows that the *Guardian* is attempting to increase the newsworthiness by exaggerating the description of the study reported. The use of exaggeration, which is commonly found in scientific news reports, is an example of sensationalised reporting.

This extract shows that exaggeration can be explained with reference to newsworthiness. That is, exaggeration using terms such as 'breakthrough' are used to serve the communicative purpose of scientific news, which is to report scientific news that is newsworthy. Thus, the use of language that exaggerates scientific research, by the *Guardian* to increase the value of the news, could imply that the *Guardian* 'distorts' the health and medical news reports.

CONCLUSION

The present research aims to account for 'distortion' that is reported by the scientific community to occur in health and medical news reports. This study argues that 'distortion' is the result of the difference between the genre specific features of scientific research reports and health and medical newspaper reports. That is, the alleged 'distortion' can be interpreted in terms of the difference in the communicative purpose of the two texts. The limitation of the present study is that it only looks at the difference in terms of genre. 'Distortion' can also be assessed by looking at the difference in terms of discourse.

REFERENCES

Audit Bureau of Circulations (2006). *Interactive Analysis*. Retrieved 27 January 2006, from http://www.abc.org.uk.

Bartlett, C., Sterne, J., & Egger, M. (2002). What is newsworthy? Longitudinal study of the reporting of medical research in two British newspapers. *British Medical Journal, 325*, 81-84.

Bell, A. (1991). *The Language of News Media*. Oxford: Basil Blackwell Ltd.

Bhatia, V. K. (1993). *Analysing Genre: Language Use in Professional Settings*. London: Longman.

Bhatia, V. K. (2005). *Worlds of Written Discourse: A Genre-Based View*. London: Continuum.

Bubela, T. M., & Caulfield, T. A. (2004). Do the print media 'hype' genetic research? A comparison of newspaper stories and peer-reviewed research paper. *Canadian Medical Association Journal, 170*, 1399-1407.

Bucchi, M. (1996). When scientists turn to the public: Alternative routes in science communication. *Public Understanding of Science, 5*, 375-394.

Calsamiglia, H. (2003). Popularisation discourse [Editorial]. *Discourse Studies, 5,* 139-146.

De Semir, V. (2000). Scientific journalism: Problems and perspectives [Perspective]. *International Microbiology, 3*, 125-128.

Entwistle, V., & Hancock-Beaulieu, M. (1992). Health and medical coverage in the UK national press. *Public Understanding of Science, 1*, 367-382.

Entwistle V. (1995). Reporting research in medical journals and newspapers. *British Medical Journal, 310*, 920-923.

Friedman, S. M. (1986). The journalist's world. In S. M. Friedman, S. Dunwoody, & C. L. Rogers (Eds.), *Scientists and Journalists: Reporting Science as News*. New York: The Free Press, 17-41.

Hammersley, M. (2003). Media representation of research: The case of a review of ethnic minority education. *British Educational Research Journal, 29*, 327-344.

Levi, R. (2001). *Medical Journalism: Exposing fact, fiction, fraud*. Iowa: Iowa State University Press.

Meyer, P. (1991). *The New Precision Journalism*. Retrieved December 8, 2005, from http://www.unc.edu/%7Epmeyer/book/

Nash, W. (1990). *The Writing Scholar: Studies in Academic Discourse*. London: Sage Publications Ltd.

Nwogu, K. N, (1991). Structure of science popularisations: A genre-analysis approach to the schema of popularised medical texts. *English for Specific Purposes, 10*, 111-123.

Nwogu, K. N. (1997). The medical research paper: Structure and functions. *English for Specific Purposes, 16*, 119-138.

Ransohoff, D. F., & Ransohoff, R. M. (2001). Sensationalism in the media: When scientists and journalists may be complicit collaborators. *Effective Clinical Practice, 4*, 185-188.

Shuchman, M., & Wilkes, M. S. (1997). Medical scientists and health news reporting: A case of miscommunication [Perspective]. *Annals of Internal Medicine, 126*, 976-982.

Swales, J. M. (1981). Aspects of article introductions. *ESP Research Report (1).* Birmingham: Aston University.

Swales, J. M. (1990). *Genre Analysis: English in Academic and Research Settings*. Cambridge: Cambridge University Press.

Swan, N. (2005). Evidence-based journalism: A forlorn hope? [Commentary]. *The Medical Journal of Australia, 183*, 194-195.

Van Dijk, T.A. (Ed.). (1985). *Discourse and Communication*. Berlin: W.de Gruter.

Van Trigt, A. M., Jong-van den Berg, L. T. D., Voogt, L. M., Willems, J., Tromp, T. F., & Haaijer-Ruskamp, F. M. (1995). Setting the agenda: does the medical literature set the agenda for articles about medicines in the newspapers? *Social Science & Medicine, 41*, 893-899.

Van Trigt, A. M., Haaijer-Ruskamp, F. M., & Jong-Van Den Berg, L. T. D. (1995). Reporting research in medical journals and newspapers [Letters]. *British Medical Journal, 311*, 62.

Weingart, P. (1998). Science and the media. *Research Policy, 27*, 869-879.

Woloshin, S., & Schwartz, L. M. (2002). Press release: Translating research into news. *Journal of American Medical Association, 287*, 2856-2858.