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Information or Promotion? Medication Coverage in the Israeli Press

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Abstract
The importance of providing the public with accurate, balanced, and objective information about drugs is reflected in their unique regulatory status. As such, Direct-To-Consumer-Advertising (DTCA) of prescription drugs is banned in most countries. Moreover, Embedded Marketing is banned in Israeli media, and the inclusion of commercial content in journalistic texts is considered unethical Given that only scant literature on media coverage of medications and its sources exits, the present study contributes to closing this gap. It assessed the balance between commercial and health frames in medication coverage in Israeli newspapers using framing theory. It evaluated the relative prominence of information sources applying advanced countervailing powers theory. Results showed promotional content four times greater than health contents. Prescription drug citations comprised 75% of coverage, although their advertising is prohibited. About half the articles cited sources perceived as objective: researchers or physicians, but these professionals depend on drug companies for research funding. Arguably, such coverage is embedded marketing of medications.

Key Words: reporter-generated article; promotional article; embedded marketing, Direct-To-Consumer advertising, journalist ethics

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Introduction

The November 2004 reform of the Israeli drug market permits direct-to-consumer advertising (DTCA) of non-prescription drugs (Pharmacist Remedies, 2004, Article 28(a)). This law maintained the prohibition on advertising prescription drugs, because audiences lack the expertise to evaluate health risks and side effects (Ta & Frosch, 2008). Nonetheless, the pharmaceutical industry has continued to lobby for DTCA of prescription drugs (Ben-Nun, Berlovitz & Shani, 2005). Thus, it is important to investigate if it also used different marketing strategies such as embedded marketing to expose the public to new prescription drugs.

Embedded marketing is defined as the paid inclusion of branded products or brand identifiers within mass-media programming (Ta & Frosch, 2008). It is prohibited by the Second Israeli Authority for TV and Radio Law, by the Bezek Law for Cable Television and Satellite Broadcasting, and by the Consumer Protection Law. Similarly, the Code of Press Ethics, prohibits inclusion of commercial content in journalistic texts (Israel Press Council, 1996). It is considered unethical because denying consumers the possibility to distinguish between promotional and informational content imposes advertising upon them. They may be unaware of being exposed to promotional content and unable to activate any defense mechanisms like skepticism and criticism (Schmitt, Wagner & Kirch, 2007). This may eventually expose the public to health risks.

In the present study, the concept "embedded marketing" is used for commercial content appearing in reporter-generated articles. Investigating the characteristic profile of embedded marketing may help decision-makers and newspaper editors design strict regulations by establishing more explicit criteria for medication reporting. Improving reporting quality and reliability may contribute to public health, since mass media affect health behavior (Li, Chapman, Agho & Eastman, 2008). The study investigates the concept "embedded marketing" by evaluating the balance between commercial and health-related content in reporter-generated articles about medications.

In October 2004, the Israeli Medical Association signed a convention with Pharma Israel, the association of research-based pharmaceutical companies, establishing ethical rules for professional relationships between physicians and commercial companies (Pharma Israel Convention, 2004). Only in 2009 the Israeli Medical Association established ethical rules to prevent conflicts of interests between physicians and commercial companies (IMA, 2009), and in a March 2010 statement, it disclosed voluntarily the number of 2009 sponsorships (IMA, 2010). It seems that all these were due to concern about restrictive actions by the legislator. Indeed, in January 2011, an Israeli law was passed (National Health Law Amendment 2010), similar to an American law, mandating the disclosure of relations between physicians and manufacturers of drugs, devices, and medical supplies (Patient Protection Affordable Care Act, 2010).

Investigating the information sources newspapers rely upon in medication coverage reporting may reveal the role of the pharmaceutical industry and physicians in advancing their interests through the print media. However, few systematic studies have examined whether drug reporting serves public health or the pharmaceutical industry's interests. The present study's purposes are to examine newspaper medications coverage, evaluate the balance between promotional and health-related content in this reporting, and assess the role of information sources used. *Promotional content* referred in this article to commercial and positive information about the drug such as brand name, drug's therapeutic purpose, drug's efficiency and its advantages in comparison to other treatments. *Health-related content* referred to information which might limit the use of the drug, such as risks, side effects, interaction with other drugs and drug's composition (the active ingredient of the drug, which is its generic name).

Mass media as a stage for competing power interests: Theoretical perspectives

Media scholars such as DeFleur and Ball-Rokeach (1989) argued that media systems are much more than vehicles for conveying information. Political, economic, and, by extension, health systems, are dependent on mass media. Hartley and Coleman (2007) demonstrated this empirically, pointing to the important role of news media in reflecting the balance of power among various countervailing powers. Their results point to the growing power of the pharmaceutical industry and advance the *countervailing powers* theory, which explains the mutual influences of key players within the healthcare system (Hartley, 2002).

The most successful organizations advance an agenda articulated via mass-mediated channels. Powerful players with a stake in an issue actively court the mass media (Gamson & Modigliani, 1989; Dearing & Rogers, 1996). Concomitantly, mass media shape information: what is covered, how controversies are defined, and the sources given the opportunity to speak, thus influencing the public debate, while emphasizing some value systems over others (Gamson & Modigliani, 1989; Entman, 1993). Such attributes of news gathering and reporting are included within the theoretical construct of 'framing' employed in this study.

Media norms require 'balanced' pluralistic coverage for a multitude of voices, particularly regarding social controversies, and this is considered 'objective' (Coleman, 1995) and professional.

Mass media coverage of medications: Incomplete and commercially biased

The importance of providing the public with accurate, balanced and objective information about drugs is reflected in their unique regulatory status. As such,

DTCA of prescription drugs is banned in most countries because of health risks and side effects audiences lack the expertise to evaluate (Ta & Frosch, 2008). Also in the USA and New Zealand, where it is permitted, DTCA of prescription drugs is tightly regulated. Even DTCA of non-prescription drugs is regulated (Pharmacists Remedies, 2004). According to the Food and Drug Administration [FDA] regulations, DTCA advertisements in the USA must indicate side-effects, contraindications, and effectiveness, so DTCA drug promotion is essentially limited to print media (Lyles, 2002).

Only scant literature on media coverage of medications exists, and it points to an overall positive frame bias in the presentation of information on new drugs, while infrequently noting potential harmful effects and risks (Cassels et al., 2003; Moynihan et al., 2000). Moreover, these studies found that most newspapers failed to disclose extant financial ties between researchers and pharmaceutical manufacturers (Moynihan et al., 2000; Hochman, Hochman, Bor & Mccormick 2008) and frequently refer to medications by their brand names. Such reporting points to potential commercial bias in medical information they present (Hochman et al., 2008).

Impact of mass media on health perceptions, decisions, and behavior

The mass media influence healthcare decision-making through their agenda-setting function (Schwarch & Woloshin, 2004) in selecting and presenting certain issues. Sensationalizing research results or emphasizing controversy in a news report may lead to risk-amplification, uncalled-for screening or treatment, and inappropriate decisions about allocating public and private funds (Bennett & Calman, 1999). Patients routinely cite the media, after physicians and pharmacists, as a key source of information on new drugs and medical treatments (Moynihan et al., 2000).

Despite newly-available communication channels, and although half of the public go on-line first, physicians remained the most highly trusted information source to patients (Hesse et al., 2005). The mass media are the most important health information source utilized by the general public (Chen and Siu, 2001). Patients use the media to complement advice received from their doctors (Yanovitzky and Blitz, 2000).

Even minimal news coverage can influence consumer health-related behavior (Li et al., 2008). Although Chen and Siu (2001) found Internet health information affected neither the patient-physician relationship nor the choice of therapeutic options, Lyles (2002) asserts that mass-media reporting about drugs and DTCA of drugs may affect patient-physician relations. Patients exposed to drug brands in the media demand them from their doctors. Extensive media coverage about medical therapies and their cumulative effect can impact healthcare professionals' prescribing practices (Canales, Breslau, Nelson & Ballard-Barbash, 2008)

Information sources of drug reporting

To date, few studies have focused on the information sources used in drug reporting. Van Trigt et al. (1994; 1995) found the sources for the Netherlands' newspapers, in descending order: scientific medical literature; information provided by universities and their hospitals; and the pharmaceutical industry. The negative consequences of medicine use received proportionally more attention in professional literature than in newspapers.

Pharmaceutical companies are found to influence *what* issues the press covers, but not necessarily *how* they are covered (Anderson, 2001). Nevertheless, recent studies of news media DTCA coverage found that pharmaceutical industry representatives received more prominence than health providers, consumers, corporate purchasers, or state players, and that coverage mainly asserted its benefits. Critics of DTCA have minimal representation (Coleman, Hartley & Kennamer, 2006; Hartley & Coleman, 2007). Lenzer (2006) found that US television networks assist drug company marketing initiatives by broadcasting industry-produced "fake news" reports. Katz (2008) argued that further research should study the reliability and consistency of press reporting on health issues, since journalists' primary sources are other media.

The Research Study

This study was based upon two theoretical constructs: 1. Employing *framing* as a theoretical construct (Entman, 1993; Dearing & Rogers, 1996), we assessed the balance between two frames – the promotional and health frames – in print media accounts about drugs. 2. Applying the advanced *countervailing powers* theory (Hartley & Coleman, 2007), we posited that news media play an important role in reflecting the balance among various countervailing powers. By assessing representatives' citations, our study evaluates empirically their relative prominence in coverage of medications.

Our research questions (Q) and hypotheses (H): Q1: Is there balance (in the relative prevalence) between Promotional and Health Frames in reporter-generated articles about medications? Given the continued lobbying for DTCA of prescription-drugs by the pharmaceutical industry (Ben-Nun, Berlovitz & Shani, 2005), H1: promotional content would be more prevalent than health-related content.

Q2: What types of information sources are employed in print press medication reporting? H2: diverse types of information sources would be used, similar or identical to the powers described in the advanced *countervailing powers* theory. H3: the pharmaceutical industry would be the prominent information source (Hartley & Coleman, 2007). Given the importance of providing the public with balanced and objective information about drugs as unique products (Ta & Frosch, 2008), H4: the majority of

reporter-generated articles rely upon several types of information sources, while most of promotional articles rely upon only one type.

Q3: Are there differences between newspapers in balance level (P/H ratio) of drug coverage? H5: the ratio between promotional and health-related content in each newspaper would be greater than one, suggestive of commercial bias.

Methods

Data collection and sample selection
There were only three major daily newspapers published in Israel throughout 2005: *Yedioth Achronot*, *Ma'ariv,* and *Ha'aretz*. 2005 was selected for analyzing medication coverage, since the November 2004 reform of the Israeli drug market permitted DTCA of non-prescription drugs (Pharmacist Remedies, Article 28(a)). We examined all editions of each newspaper issued in the first week of every month, when each newspaper published a monthly health supplement, and the third week of every month, considered a standard week of news publication.

The corpus texts were selected by identifying topics that appeared in the headlines or the text related to: names of drugs, illnesses, new medical treatments, clinical studies, issues related to the government's subsidized drugs list, drug companies, and economic issues related to these companies. The corpus texts were classified by format and content, according to discourse types frequently used in mass-communication research and distinctions stated in the Israel Press Council's Code of Press Ethics (Israel Press Council, 1996), leading to two types of texts: reporter-generated articles; and promotional articles − articles appearing as news reports, but initiated and written by advertisers on behalf of a drug company or health maintenance organization (HMO).

Operationalization
We operationalized the promotional and health frames as follows:
Coding: A simple coding system was devised to measure the two frames based on patient package inserts as required (Pharmacists' regulations, 1986): promotional versus health-related contents, each using three criteria. Promotional content: citations of (1) brand name (commercial name), (2) drug's therapeutic purpose, (3) drug's advantages and efficiency. Health-related content: citations of (1) drug's side effects and risks, (2) drug's biochemical composition (the active ingredient of the drug, which is its generic name), (3) drug's activity or functioning. Each criterion had two coding options: 1 = Yes, for criterion citation; and 0 = No, for non-citation. Two graduate students trained by the researchers conducted the content analysis independently, rating the same articles.
Intercoding reliability: Inter-coder reliability was determined using Kappa analysis. Cohen's Kappa Coefficient measures inter-rater agreement

and was tested by the two trained coders working independently and analyzing 90 news articles; it was found to be substantial with average of 0.71. For the category of "Risk and side effects" the Kappa test was 0.60, "Drug composition" – 0.64, "Drug Activity" – 0.71, "Brand name" – 0.94, 'Therapeutic purpose" – 0.62, and "Drug efficiency and advantages" – 0.88.

Content analysis: Reporter-generated articles, promotional articles, citations of medications and information sources served as analysis units. Data from the code sheets were analyzed utilizing SPSS16.

The research questions were answered using a Chi-Square and a Paired sample t-test. The coverage balance was evaluated by the ratio between promotional and health-related content (P/H). P/H measure is constructed by the weighted mean of the frequency of the six criteria determining the two frames.

Findings

The research corpus consisted of 391 articles in three newspapers. Seventy-seven percent were written by journalists (reporter-generated articles); 23% state explicitly that they present "promotional content".

1116 drug citations were identified. Approximately three-quarters (826) relating to prescription drugs, ten percent (111) to non-prescription medications and the rest to medications not yet approved in Israel, uniformly among the three newspapers. The analyses of drug citations in the corpus were undertaken only for approved prescription and non-prescription drugs. Prescription drugs citations comprise 88% in reporter-generated articles and 90% in commercial articles.

Table 1. *Promotional versus health-related contents in reporter-generated articles*

Drug type		Content type					
		Health content			Promotional content		
		Risks and Side effects	Drug Composition	Drug Activity	Brand Name	Therapeutic purpose	Drug efficiency & Advantages
Prescription	N	135	60	83	398	560	113
	P	%21.4	%9.5	%13.2	%63.1	88.6%	17.9%
Non-prescription	N	15	5	2	82	63	4
	P	%16.9	%5.6	%2.2	%92.1	70.8%	4.5%
Chi-square		N.S	N.S	10.28[*]	29.64[***]	21.1[***]	10.28[***]
Paired T		M=0.14, SD=0.20			M=0.56, SD=0.23		

Note: n= 796 [*]p<.05, [**]p<.01, [***]p<.0001   n= number of drug citations, p= percent of drug citations

As shown in Table 1, in reporter-generated articles the absolute majority (92.1%) of non-prescription drugs and two thirds (63.1%) are mentioned by brand name, Compared to only %16.9 of non-prescription drugs and 21.4% of prescription drugs that mentioned side effects and risks. A paired T test $[T_{(720,0.95)} = 37.48, P < 0.01;$ Cohen's D $= 1.74]$ found that the rate of promotional contents is four times greater (M=0.56, SD=0.23) than health-related contents (M=0.14, SD=0.20), regarding both prescription and non-prescription medications.

Figure 1. *Types of information sources according to article type*
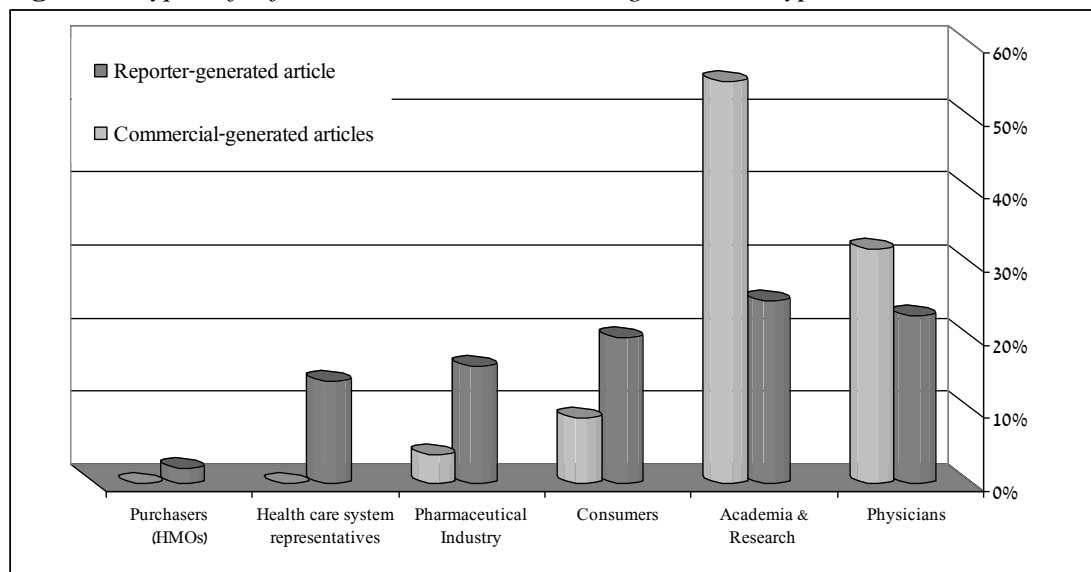

Figure 1 shows that academic scholars were used as information sources by 25% of the reporter-generated and by 55% of the promotional articles. Medical personnel were cited in 24% of the reporter-generated and 32% of the promotional articles. The pharmaceutical industry was cited in only 16% of the reporter-generated and 4% of the promotional articles. The information source cited changed according to the article type $[\chi^2_{(5)} = 27.77, p<.001]$.

Table 2. *Number of information sources cited according to article type*

| | Article Type | | | | | |
| | Commercial-generated articles | | Reporter- generated articles | | Total | |
No. of Sources	Number	Percent	Number	Percent	Number	Percent
No sources	49	55.7%	83	27.7%	132	34.0%
One source	31	35.2%	204	68.0%	235	60.5%
Two sources	8	9.1%	12	4.0%	20	5.2%
Three sources	0	0.0%	1	0.3%	1	0.3%

Note: n=388   n= number of citations of information sources

As shown in Table 2, 35.2% of the promotional articles and 68% of the reporter-generated articles cite only one information source. A Chi-square test revealed that the number of information sources cited changed according to the article type [$\chi^2_{(3)}$ = 31.48, p<.001].

Table 3. *Differences between newspapers in balance level of drug coverage*

	Newspaper			
	Ma'ariv	Ha'aretz	Yedioth Achronoth	Total
Promotional content	0.56	0.57	0.52	0.56
Health content	0.12	0.13	0.16	0.14
P/H measure	4.67	4.38	3.25	4.00

Note: n= 876. n= number of drug citations in reporter-generated articles

Table 3 shows that the P/H measure (represents the weighted mean of 3 criteria for promotional content and 3 criteria for health content, measured by drugs' citations in reporter-generated articles) was 3.25 in *Yedioth Achronoth*, 4.67 in *Ma'ariv*, and 4.38 in *Ha'aretz*.

Discussion

Primarily, prescription drugs in reporter-generated articles
The study found that commercial information about prescription drugs for the public appears primarily in reporter-generated articles, in contrast to journalistic ethics (Israel Press Council Rules, 1996), requiring newspapers to distinguish between reporter-generated and promotional articles. This situation reflects the trend among drug companies and other interest groups to employ embedded marketing to promote new prescription drugs and have them included in the Israeli government health policy known as the "medication basket" (medicines whose purchase through HMOs involves a state reimbursement to patients), as patients pressure their physicians to issue them prescriptions for drugs discussed in the media (Huh & Langteau, 2005).

Arguably, this situation exists because DTCA of prescription drugs is prohibited, and Israeli Ministry of Health regulations do not distinguish between reporter-generated and promotional articles (Yahalom & Shani, 2003). Extending embedded marketing, like extending DTCA, may result in an increase in prescribing medications (Rapposelli, 2006). This may encourage patients to consume new prescription medicines, even if they are more expensive or equivalent in their effectiveness to older drugs (Haas, Phillips, Gerstenberger & Seger, 2005).

Newspapers' underlying promotional content
This study found a distinct imbalance between promotional and health-related framing. The rate of promotional contents in journalistic reporting is four times greater than health-related contents (Tables 1 and 3), according to the *first hypothesis*.

There is limited citation of drugs' risks, side-effects, biochemical composition (generic name), or activity, but their brand name and therapeutic purpose are cited frequently. Like Hochman et al. (2008), our findings show that about two thirds of drug citations in reporter-generated articles mentioned drugs' brand name (Table 1), thus serving as drug promoters. Overall, the coverage focuses on aspects that advance marketing of drugs rather than information essential for responsible and appropriate patient use of the drugs.

Also, this medication coverage contravenes the Israeli Medical Association's position (IMA, 2006), which requires the use of generic names in drug advertising, in addition to brand name. Drug reporting using brand names instead of generic ones can cause confusion and even potentially dangerous medication errors, because many medications come in multiple brands (Schwab et al., 2002). Brand-name medications could frequently be substituted by less expensive related generic versions, saving individuals' and state expenditures (Haas, Phillips, Gerstenberger & Seger, 2005).

Each of the newspapers scored a P/H measure greater than one (Table 3), according to the *fifth hypothesis*. Promotional content was more frequent than health-related content, thus the information provided appears to be influenced by the economic interests of certain groups and hence potentially less reliable. This conclusion is supported by Magrini and Font (2007), who claimed that a majority of the essential information about drugs held by pharmaceutical companies is not accessible to the enforcement authorities, and is released selectively.

The Single Source Phenomenon
The study found diverse types of information sources upon which drug coverage was based (Figure 1). These are representatives of power groups, identical to those described by the advanced countervailing powers theory (Hartley & Coleman, 2007). Thus, *the second hypothesis* was proved. However, over two thirds of reporter-generated articles employed only one information source, only 4% employed two sources, while more than quarter cited no sources at all (Table 2). These findings contradict the *fourth hypothesis*. This suggests an unbalanced coverage of medications, potentially unreliable and harmful for public health. Balance is one of the ethical norms that traditionally governs media coverage of controversial issues (Boykoff & Boykoff, 2004; Ryan, 2001). Balance demands that journalists objectively present all sides of an issue, including all relevant information and stakeholder perspectives (Antilla, 2005; Ryan, 2001). At least, balance demands coverage identifying the two most influential perspectives, presenting them in a point-counterpoint format, and affording both relatively equal attention (Entman, 1989).

Also, only about a third of the promotional articles cite one information source, while over half do not cite any information source at all. These findings contradict the *fourth hypothesis*. The fact that over a quarter of reporter-generated articles do not cite any information sources (Table 2) also supports

our argument that the reliability of drug coverage in the Israeli press is doubtful.

Arguably, the finding that all the newspapers based their coverage on a sole source and favored promotional over health-related framing (Table 1) points to a problem in the professionalism level of journalists' drug reporting. This may suggest that reporters serve, in practice, as sales agents for pharmaceutical companies. The problem in professionalism may be mainly due to the impact of the Internet and the digital environment on the economics of the newspaper business (e.g. consolidation and layoffs), which may also have impacted the quality of health news reporting (Currah, 2009; Picard, 2008).

Use of potentially biased information sources
Contrary to the *third research hypothesis*, our research shows that the pharmaceutical industry serves as an information source only in 16% of reporter-generated articles (Figure 1). This finding is in contrast to studies in the USA, where information provided by formal pharmaceutical industry representatives was the most frequently cited (Coleman, Hartley & Kennamer, 2006; Hartley & Coleman, 2007). Given that DTCA of prescription drugs is banned in Israel, pharmaceutical companies' formal representatives do not appear openly in Israeli newspapers, rather they are "aided" by academic and medical professionals disguising their interests by appearing in reporter-generated articles. Arguably, these articles are thus highly biased and function as embedded marketing.

Similarly to studies conducted in Holland (Van Trigt, et al., 1994; 1995), we found that half of the reporter-generated articles and the vast majority of promotional articles were based on information sources perceived by the public as objective – physicians, university researchers, and scholars (Figure 1). However, the objectivity of reporter-generated coverage can be doubted, since these sources depend on the pharmaceutical industry for funding research and symposia (Coghill, 2005). Press releases designated for journalists by scientific journals frequently present data in exaggerated formats and fail to highlight a study's limitations or to disclose conflicts of interest (Schwartz, Woloshin and Baczek, 2002; Hochman et al., 2008). Objectivity of pharmaceutical industry-sponsored researchers is doubted, given that therapeutic trials funded by for-profit organizations are more likely to report positive findings than trials funded by not-for-profit organizations (Conen, Torres and Ridker, 2008).

Medical professionals are highlighted also in promotional articles as information sources (Figure 1). Perhaps this implies that medical personnel are being compensated by the pharmaceutical companies in their private clinics or in hospital research. This conclusion is supported by Wazana (2000).

One of the present study's contributions is the P/H measure developed for enabling systematic analysis to determine the ratio between promotional content and health-related content in journalistic coverage. This measure also

enables us to assess each newspaper's contribution to important health-related information, and its journalism standards.

Limitations of the study
The first limitation is that the analysis was conducted with only three national newspapers in Israel and one year of data. Second, we analyzed only one medium, newspapers. Third, our analyses were limited to newspaper content analysis.

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