

**The daily diet of news:
Variation in newspaper content**

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Abstract

How much diversity of topics is there in our national print media? What constitutes “the news?” Are all newspapers the same? If newspapers differ, what are these differences due to? In this study we try to answer these questions. We broadly defined news content as any story that appeared in the newspaper and then sorted the stories into twenty-five possible topics. Using a sample of 101 daily newspapers across the United States, we were able to produce an accurate picture of the “daily diet of news” offered by newspapers in the spring of 2000. The main findings are that the average newspaper devotes more than half of the space it has for stories to Sports, Politics/Government, Business, and Crime. Our findings also show that newspapers vary in how much space they allot to each topic, and that, on the whole, the relationship between content and market variables is negligible.

Introduction

News is now available twenty-four hours a day. Flowing through various media -- newspapers, radio, television, cable, Internet -- information about a wide range of events reaches the public. Scholarly research has often focused on exposure to this news flow in order to gain understanding of how people get the news. In 1978, for example, the Newspaper Advertising Bureau, led by Leo Bogart, embarked on a project titled, “How the Public Gets Its News.”¹ The study was a national survey designed to obtain information on patterns of exposure to the news in the mass media. In a chapter titled, “The Daily Diet of News,” Bogart and colleague Albert Gollin answered such questions as, “How much of this rich diet of news does the public consume, and how avidly? Which media are used, when, and how often? In what ways do different groups vary in their reliance on individual media as news sources?”² Many other studies, some of which we mention below in more detail, took a similar approach.

Yet lacking in this approach is a detailed analysis of the content of all this news. An equally important set of questions, it seems to us, is: What is the news? What topics does it cover? What is the mix of topics? This is the central question of this paper. To take the metaphor of the “daily diet of news” a bit further, we are focused not on what people actually consume, but on what is available for consumption. We think that what is available in the media for public consumption is important because it tells us something about our society; something about what events, issues, people, and topics are deemed important; something about what our society, culture, or polity focus on. We see the “daily diet of news,” then, as an indicator of the priorities of the society we live in³.

Our purpose in this paper is to provide an accurate and comprehensive description of newspaper content in the year 2000, to see whether there is variation in content across newspapers, and to see whether there are correlations between market characteristics and content. We aim to explain the daily diet of available news by systematically recording and cataloguing newspapers’ entire content and then considering whether different newspapers offer different “news diets.”

We focus on newspapers for several reasons. Despite declining circulation figures, many people report using newspapers. According to the Readership Institute at Northwestern University's Media Management Center, 85% of the adult population in the U.S. reads the newspaper at least once in the course of a week.⁴ The Newspaper Association of America's data show that 52% of U.S. adults read the newspaper on an average day, and that newspapers have a total circulation (i.e., weekday and Sunday) of about 55,733,000.⁵ Clearly, newspapers still hold an important place in the U.S. as purveyors of news. Some would argue that newspapers' role today is even more important than in the past. An increasing number of news companies own several different media platforms (e.g., newspaper, radio station, cable station). These companies rely on repackaging the same news for each platform and several have launched multimedia newsrooms for that purpose. As the newspaper industry is constantly changing, as well as coping with mergers, acquisitions, and challenges from other media, it is timely to examine what type of content newspapers provide.

Previous research

Historically, mass media research has been invested in the study of media content.⁶ Early on, researchers mainly studied the effects of content on the audience. Theorizing in this area has brought us such concepts as the Hypodermic Needle,⁷ Cultural Indicators,⁸ and Agenda Setting.⁹ Later, scholars began exploring how content is produced. Important work by Gans¹⁰ and Tuchman¹¹ among others brings to the fore the sociological, psychological, economic, and other factors that determine the final product: the newspaper article or television story. Others have studied media content as a cultural artifact, theorizing about societal norms, depictions of "reality," or fair representation of groups or issues.

Yet despite the centrality of content in media studies, its study is often inadequate. The problem is often in the definition of content: it is defined by proxy or too narrowly. The first charge leveled at communication scholars is that they do not measure content in a meaningful way. Shoemaker & Reese observe that many studies discuss content but do not directly study it: "rather, they look at the time spent with television as opposed to other activities, the number of newspapers read, and so on."¹² Such studies, as those linking media and behavior, focus more on use than content and arguably tell us more about the effects of the medium than the effects of the message. A second problem with the study of content is that many of the studies that do analyze content, are designed to examine specific content. Using either quantitative or qualitative methods, they often focus on how a particular group, subject matter, election campaign, or presidential debate is depicted. While this line of inquiry can be useful in a variety of theoretical contexts, it does not shed light on the general question of content.

There have been a small number of studies that attempted to describe or explain content in a comprehensive way. Here, we will mention two landmark studies. In 1959, Deutschmann published a report titled "News-page Content of twelve Metropolitan Dailies." The purpose of the study was "to demonstrate in a number of quantitative ways

the nature of the qualitative differences we observe as we read these several papers.”¹³ Innovative in its approach and methods, the study examined about 25,000 stories sampled from March 1959 and categorized them on a number of variables, including “what was the story about?” Using about 50 categories, the study gave each newspaper an “emphasis score” which indicated the percent of items, out of the total number of items, devoted to each content category. The same was calculated for inches. Using rank order correlations, the study was able to conclude which papers are similar. While the sample was small, the study’s contribution is in its comprehensive approach to content and its pioneering effort to compare newspapers based on content.

In the 1960s and 1970s, the Newspaper Advertising Bureau, under the leadership of Leo Bogart, engaged in a series of studies about the press and its audience. These studies are summarized in, “Press and Public: Who Reads What, When, Where, and Why in American Newspapers.”¹⁴ The book is a wealth of information about many subjects, from circulation to reading habits, to the business of newspapers, to competition with other media, to what is in a newspaper, to what readers read. One study from 1977 analyzed the content of three hundred different newspapers during one week in March. Researchers used 80 categories to classify the content of stories over 5.5 inches on the front page and nine other selected pages, and found that, “the average daily newspaper covers a tremendous range of subject matter.”¹⁵ Comparing data from the 1977 study to one conducted in 1971, and to the typical content of newspapers in four different circulation groups, the study concluded that the “balance of content in the American press is remarkably consistent.”¹⁶

More recently, a study by the Project on the State of the American Newspaper, funded by the PEW Charitable Trusts, set out to answer this question: “Amid all the turbulence in society and in newsrooms, with all the talk of the need to innovate, has the newspaper itself, the bundle that ends up in the reader’s hand every day, really changed all that much?”¹⁷ In the study, they looked at the issues of 10 sampled newspapers for three different weeks from each of these years. They applied 10 broad categories to the entire newshole of the paper and 18 categories of topics specifically to the front page. The researchers concluded that the content of newspapers in 1999 “is strikingly different” than in 1964: Not only has the newshole doubled on average, but “as a percentage of total newshole, business coverage has doubled, and sports and features have risen notably.”¹⁸

Table 2 shows how these studies compare to the present study in terms of the breadth of their definition of content. This study is not meant to be a direct comparison or updating of these previous studies; this comparison cannot be made accurately because the different studies used different measurements, different standards to decide what to code, and different categorization schemes. Still, Table 2 allows us to see how other studies have defined what “newspaper content” is and it offers perspective on how content is analyzed in this study.

Research questions and measure definitions

This paper aims to address the following research questions:

RQ1: How much emphasis do newspapers put on different topics?

Using experts in the newspaper industry, we generated a list of 25 distinct themes, which we defined as “Topics.” This list of topics would be familiar to readers and newspaper editors alike, and it expands some categorizations schemes used in prior research.

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|-------------------------------|--------------------------------|--------------------------------|
| 1. Sports | 9. Parenting/Relationships | 17. Movies |
| 2. Politics/Government | 10. Ordinary People | 18. Television |
| 3. Business/Economics/Finance | 11. Natural Disaster/Accidents | 19. Travel |
| 4. Crime/Police/Legal | 12. Food | 20. Popular music |
| 5. Education | 13. Community Announcements | 21. War/International Conflict |
| 6. The Arts | 14. Environment | 22. Automotive |
| 7. Health/Fitness/Medicine | 15. Religion/Spirituality | 23. Fashion/Beauty |
| 8. Home/Garden/Real Estate | 16. Science/Technology | 24. Jobs/Careers |
| | | 25. Obituaries |

Coders were instructed to select the most appropriate topic for each newspaper story, so that the categories are mutually exclusive. As mentioned above, we gave each story a unique ID, counted it, and measured its area in inches (length * width). In this paper, we report the emphasis given to different topics as a percentage of the total area of all the stories in a given newspaper during the 7-day composite week in March 2000. We operationalized our content variables as “relative space devoted to Topic x.” We believe this is a useful and accurate measure of “daily diet of news.”

RQ2: Is there variation among newspapers in the emphasis they put on different topics?

While the typical emphasis newspapers give to, say, education is interesting, we also wanted to know whether individual newspapers are close to this average or not. In addition, since people read specific newspapers, not an “average” newspaper, it makes sense to understand the differences among newspapers. Deutschmann concluded in 1959 that the papers he studies were similar in content.¹⁹ That view seems to be promoted in the present as well.²⁰ To answer this question, we report the distribution of the “relative space” of each topic across newspapers. We examined the mean, standard deviation, median, minimum, maximum, and quartile information.

RQ3: Do market characteristics correlate with variations in the emphasis newspapers put on different topics?

We explored several market variables and their relationships to the content. Specifically, we looked at circulation, competition, ownership, median income, median age, percent minority population, literacy, urbanicity, and region (see further detail in the section on measures below). Circulation, competition, and ownership have been traditionally included in studies on the relationship between economic factors and content.²¹ Other variables we included to allow a broad range of characteristics into the analysis.

To address RQ3, we first conducted a bivariate analysis for each of the content variables to test which market characteristics correlate with the relative space of each topic. We

followed up with a regression analysis to see whether these correlations change when multicollinearity is taken into account.

Method

This section describes the sampling and coding procedures.

The Impact Study. In 2000-2001, the Readership Institute at the Media Management Center at Northwestern University embarked on a multipart study of a stratified random sample of 101 daily U.S. newspapers, scientifically chosen to represent the newspaper industry as a whole. The study, called Impact, is part of the five-year industry-wide Readership Initiative launched by the American Society of Newspaper Editors and the Newspaper Association of America, in partnership with the Readership Institute. The goal is to find ways for the newspapers industry to increase readership. The study gathered information from each of the 101 newspapers pertaining to their content, their service, their organizational structure and culture, their markets, and their readers. This unprecedented wealth of information provides a baseline for measuring subsequent service and content innovations aimed at building readership. In this paper, we focus on content and market variables.

The newspaper sample. We selected a representative sample of daily newspapers in the United States using lists of newspapers from the Newspaper Association of America (NAA), the Audit Bureau of Circulation (ABC), and *Editor and Publisher*. We included only newspapers published in English at least five days a week, with an average daily circulation over 10,000, with no significant national distribution. In total, the sampling frame consisted of 846 newspapers.

We stratified the sampling frame into six strata by applying k-means clustering to circulation data from ABC, household counts from the US Postal Service, and demographic data from Claritas and the US Census:

1. Average daily circulation (CIRC),
2. Number of households in the home counties (HHS),
3. Number of zip codes in the home counties (ZIPS),
4. Number of home counties, that is, those counties that make up 80% of total circulation (CNTYS),
5. Claritas' measure of urbanicity averaged over the home counties (URBAN). For urbanicity, 1=Rural, 2=Town, 3=City, 4=Suburb, and 5=Urban,
6. Number of competitive daily newspapers in the DMA (COMP),
7. A measure of market penetration in the home counties (PENE). For penetration, larger values indicate higher penetration; an average of 1.3 should be regarded as high penetration and an average of 0.9 moderate penetration.

We drew simple random samples without replacement from each stratum to have approximately the same number of newspapers from each stratum. In total, 101 out of 104 newspapers agreed to participate in the study, giving a response rate of 97%. The final list of participating newspapers included 18 from small town, 20 from small

town/city+, 14 from small city local, 17 from city local, 15 from city regional, and 17 from big city.

The story sample. Seven publishing days from March were selected to form a reconstructed week of non-consecutive days. Each newspaper provided a complete final home edition for the dates March 6, 9, 12, 15, 18, 21 and 24, 2000. In total, we analyzed 710 issues from 104 different newspapers.²² We excluded all pre-printed advertisements and syndicated supplements such as USA Weekend, Parade magazine and stand-alone television guides. We identified a total of 74,191 stories in the 101 newspapers.

We classified each story as being one of the 25 topics detailed above, with an additional “other” category. We selected a disproportionate stratified random sample of 50,736 from the universe of 74,191 stories, stratifying on newspaper and story topic. To make sure the less common topics were adequately represented in our final sample, we drew a simple random sample of at most 37 stories from each of the 101 newspapers * 26=2626 strata; if there were fewer than 37 stories of a particular topic in a particular newspaper, we included all the stories we had. This produced a sample of 43,670. We allocated the remaining 7,066 stories by drawing an additional $7066/101 = 70$ stories from each newspaper. The final sample was 47,594.

Newspaper content measures. Across the 101 newspapers in our sample, we found that, on average, stories take up about 16% of available space.²³ We measured each story in terms of number and space, and then coded it for specific measures.²⁴ We computed the relative item count by dividing the number of stories devoted to a topic by the total number of stories. Similarly, we computed the relative space devoted to a topic by dividing the total area of all the stories about a topic by the total area of all stories. In this paper we report relative space devoted to topics in order to diminish the effect of newspaper size (i.e., total space available in the newspaper). In other words, newspaper A might have more story space than newspaper B devoted to politics in absolute terms (because it is a larger paper), but less politics as a percent of the total space available.

A team of coders was trained using a detailed guideline explaining the rules for categorizing stories; their work was cross-checked.²⁵ For story topic overall, K_n averaged .68. The results show that, overall, coders agreed with each other and were consistent. The level of inter-coder reliability was satisfactory by social science standards.

Market measures. The eleven market measures used in this paper were obtained largely from the U.S. Census Bureau,²⁶ Claritas,²⁷ the Audit Bureau of Circulation.²⁸ All have been included in prior research on content and economic variables.²⁹

- *Average circulation:* measured as a seven-day average. Data obtained from the Audit Bureau of Circulation or from *Editor & Publisher* for those newspapers that are not audited. Circulation is highly correlated with size as measured by number of pages ($r=.884$) or space available ($r=.869$). It is reasonable to expect that larger newspapers, with more space than smaller newspapers, may put more emphasis on certain types of content, or have a greater variety of content.

- *Competitive Newspapers*: measured as the total number of daily newspapers in the market. This is a direct measure of whether the newspaper is a monopoly in its market, or whether it has to compete for readers with other daily newspapers. Data obtained from ABC. This is the first of two measures of competition. As newspapers have to differentiate themselves from their competition and appeal to readers, we can reasonably expect that the degree of competition will be linked to emphasis on types of content.
- *Readership Overlap*: measured as the percentage of people in the market who say they read more than one newspaper. This is Data obtained from the Readership Institutes' Consumer Survey.³⁰ This is the second measure of competition, to which we apply the same logic: newspapers competing for readers may offer different emphasis on types of content.
- *Publicly Traded*: measured as a categorical variable. Each newspaper was coded as one of two categories: Private (a privately held company) or Public (a publicly traded company). Data obtained from 101 daily newspapers participating in the study. This is the first of two measures of ownership. While references to this variable are scarce in the literature, it is reasonable to expect that newspapers accountable to share holders may emphasize certain types of content, while newspapers that are not may emphasize other types of content.³¹
- *Independence*: measured as a categorical variable. Each newspaper was coded as one of three categories: Independent, Owned by a Small Chain, Owned by a Large Chain. Data obtained from 101 daily newspapers participating in the study. This is the second measure of ownership. Group ownership is of great interest to media scholars and is often found in the literature in connection with content variables, usually in the context of reduced quality or diversity of opinion.³²
- *Region*: measured as a categorical variable. Each newspaper was coded as one of four categories: Northeast, South, Midwest, and West. Data obtained from 1990 U.S. Census Bureau, matched for State. Here we are testing whether differences in the character of the four regions in the U.S. translate into different emphases newspapers in these regions put on different topics.
- *Urbanicity*: measured on a scale of five points: Rural, Town, City, Suburb, and Urban. Data obtained from Claritas' measure of urbanicity averaged over the home-counties (those counties that make up 80% of total circulation). Like region, urbanicity is a cultural factor. Rarely discussed in the literature, it is reasonable to expect that the degree of urbanicity of a market may be related to the emphasis a newspaper puts on different topics.
- *Median income*: a direct measure of the median income in a given market. Data obtained from Claritas, matched for zipcodes in the home-counties. If newspaper organizations take their audience (and advertisers' demands) into account, we can expect emphasis on different topics to correlate with median income.
- *Median age*: a direct measure of the median age in a given market. Data obtained from Claritas, matched for zip-codes in the home-counties. Here, too, assuming newspaper organizations target their audience and attempt to appeal to advertisers, we can expect emphasis on different topics to correlate with median age.

- *Literacy*: measured as percent of the population above level 1 literacy (there are five levels, level 1 being the lowest and level 5 the highest). Data obtained from the National Institute for Literacy and matched for State.³³ It is reasonable to expect that newspapers will tailor their product to suit the literacy level of their readers, including putting more or less emphasis on certain types of content.
- *Minority population*: measured as households self-reporting as non-white. Data obtained from Claritas, matched for zip-codes in the home-counties. Here too it is reasonable to expect that newspapers will emphasize news according to their readers' affinities.

The following section addresses our research questions. We present descriptive data as well as the results of correlation and regression analyses.

Results

The daily diet of news. Table 1 provides a simple description of the emphasis newspapers as a whole put on different topics. About a quarter (24%) of all story space in newspapers during the sample week was devoted to Sports. Politics and Government followed with about 18% of the story space. Business and Crime take up about 8% of the story space each. The remaining 42% of the story space is dispersed among 21 other topics, with Education taking up the most story space (about 4%) and Obituaries the least space (<1%).

-- Table 1 about here --

By looking at the mean of the relative space, we are able to address RQ1. It becomes clear that, in general, newspapers put a lot of emphasis on Sports and Politics (i.e., devote a large portion of the available story space to it). Other topics receive far less emphasis.

Variations in content across newspapers. To begin exploring the distribution of these means across newspapers, we turn to Graph 1. Here we charted multiple box-plots to compare the 25 topics. Topics are presented along the Y axis in descending order in terms of their relative space. Take Sports as an example: The dark circle indicates the median of the relative space of Sports for the 101 newspapers in our sample (23%). The "box" represents the middle 50% of the newspapers (between the 25th and 75th percentiles) with a range of values between 21% and 27% for the relative space of Sports. Most of the newspapers fall within the "whiskers," and the light circles represent those newspapers that have extremely high values (i.e., outliers) for the relative space of Sports (the highest relative space for Sports is 44%). Table 1 provides the numeric values of the minimum, maximum, and quartiles.

-- Graph 1 about here --

To answer RQ2, then, there is variation across newspapers in the space allotted to each topic. Interestingly, while all newspapers put most emphasis on sports, politics, business,

and crime, some do more than others. Some newspapers use as little as 13% of their story space for Sports stories, and others as much as 12% for stories about Ordinary People.

Additionally, the mix of topics in some newspapers is more balanced than in others. Since relationship between the topics is compensatory (i.e., adding the relative space of all the topics equals 100%), newspapers that devote more space to one topic devote less to another by definition. We found, for example, that the outlier newspaper with 44% story pace devoted to Sports also ranks extremely low in the coverage of Science/Technology, Movies, and Music, and is in the lowest quartile in Arts, Religion, and Education among other topics.

We further explored the relationship between the topics by performing a Principal Component Analysis. The eigenvalues ranged from 3.498 to .004156 and ten were greater than one. This indicates that content varies across newspapers on a large number of underlying dimensions. We therefore analyze the original variables to make the presentation of results more clear.

Co-variations in content across newspapers. Our results so far show that newspapers vary in the amount of emphasis they put on different topics. Next, we explore whether key market characteristics correlate with these variations in relative space devoted to different topics. We correlated the relative space devoted to each topic with each of the market variables. Table 3 presents a correlation matrix between these market and content variables (i.e., the topics).

-- Table 3 about here --

We found that market characteristics do correlate significantly with the relative space of some of the topics:

- *Circulation* correlates significantly with the relative space devoted to seven topics. The larger the circulation, the more relative space a newspaper gives to the Arts, Home/Garden/Real Estate, Travel, Popular Music, and Obituaries. The smaller the circulation, the more relative space a newspaper gives to Education and Community Announcements. Recall that by looking at the relative, not the total, space, we attempted to neutralize the effects of newspaper size. Here we see, however, that circulation – which is highly correlated with newspaper size – does correlate with how much emphasis newspapers put on certain topics.
- *Competitive Newspapers* (number of newspapers in the market) correlates significantly with the relative space devoted to six topics. The higher the competition (i.e., the larger the number of newspapers in the market), the more relative space a newspaper gave to Movies, Television, Fashion/Beauty, and Obituaries. The lower the competition (i.e., the smaller the number of newspapers in the market), the more relative space a newspaper gives to Community Announcements and the Environment.
- *Readership Overlap* (the percent of the people in the market who read more than one newspaper) correlates significantly with the relative space devoted to five

- topics. The higher the competition (i.e., the larger the percentage of people in the market who read more than one newspaper), the more relative space a newspaper gives to Parenting/Relationships, Ordinary People, and Movies. The lower the competition (i.e., the smaller the percentage of people in the market who read more than one newspaper), the more relative space a newspaper gives to the Environment and Travel.
- *Public Trading* (whether the newspaper is publicly or privately owned) correlates significantly with the relative space devoted to three topics. As Public Trading is a categorical variable, we conducted a One-Way Analysis of Variance. We found that, on the whole, mean differences of the relative space a newspaper gives to Sports, The Arts, and Jobs/Careers correlates with different categories of Public Trading. Specifically, we found that privately-owned newspapers devoted significantly more relative space to Sports and The Arts (24.69% and 3.29%, respectively) compared to publicly-owned newspapers (22.80% and 2.73%, respectively) and significantly less relative space to Jobs/Career (.60%) compared to publicly-owned newspapers (.87%).
 - *Dependence* (i.e., whether a newspaper is independently owned, is part of a small chain, or is part of a large chain) correlates significantly with the relative space devoted to two topics. This variable is also categorical, and the results of the ANOVA show that mean differences of the relative space a newspaper gives to Home/Garden/Real Estate and Community Announcements significantly correlate with different categories of Independence. Specifically, we found that newspapers owned by large chains devote more relative space to Home/Garden/Real Estate (3.38%) than newspapers owned by small chains (1.94%), and that newspapers owned by small chains devote more relative space to Community Announcements (3.52%) than newspapers owned by large chains (2.16%) or those that are independent (2.11%). Tukey's post-hoc test showed these differences to be significant.
 - *Region* correlates significantly with the relative space devoted to five topics. As Region is also a categorical variable, and the results of the ANOVA show that mean differences of the relative space a newspaper gives to Politics/Government, the Arts, Health/Fitness/Medicine, the Environment, and Movies correlate with different categories of region. Specifically, we found that newspapers in the South region devote the most relative space to Politics/Government (19.36%) while newspapers in the Midwest region devote the least (16.29%); newspapers in the Northwest region devote the most relative space to the Arts (3.94%) while newspapers in the South region devote the least (2.80%); newspapers in the Midwest and Northeast regions devote the most relative space to Health/Fitness/Medicine (4.16% and 3.98%, respectively) while newspapers in the West and South regions devote the least (2.88% and 2.82%, respectively); newspapers in the West region devote the most relative space to the Environment (3.42%) while newspapers in the Midwest, South, and Northeast regions devote less (2.11%, 1.95%, and 1.83, respectively); and newspaper in the West and Northeast regions devote the most relative space to Movies (2.32% and 2.01%, respectively) while newspapers in the South and Midwest regions devote less

- (1.58% and 1.52%, respectively). Tukey's post-hoc test showed these differences to be significant.
- *Urbanicity* correlates significantly with the relative space devoted to six topics. The more urban the market, the more relative space a newspaper devotes to Home/Garden/Real Estate, Travel, Popular Music, and Obituaries. The less urban the market, the less relative space a newspaper devotes to Education and Community Announcements.
 - *Median Income* correlates significantly with the relative space devoted to six topics. The higher the median income of the market, the more relative space a newspaper gave to Home/Garden/Real Estate, Movies, Travel, Popular Music, and Obituaries. The lower the median income of the market, the more relative space a newspaper gave to Community Announcements.
 - *Median Age* correlates significantly with the relative space devoted to four topics. The higher the median age of the market the more relative space a newspaper gives to Business/Economics/Personal Finance and Travel. The lower the median age of the market, the more relative space a newspaper devotes to Education and Parenting/Relationships.
 - *Literacy* correlates significantly with the relative space devoted to five topics. The more literate the population in the market, the more relative space a newspaper devotes to Education, Health/Fitness/Medicine, and the Environment. The less literate the population in the market, the more relative space a newspaper devotes to Religion/Spirituality and Popular Music.
 - *Minority population* correlates significantly with the relative space devoted to four topics. The higher the percentage non-white households, the more relative space a newspaper devotes to Religion/Spirituality, Popular Music, and War/International Conflict. The lower the percentage non-white households, the more relative space a newspaper devotes to Health/Fitness/Medicine.

The data in Table 3 indicate that twenty topics show significant correlations with one or more market variables ranging in absolute values from .199 to .457. Some topics correlate with only one of the market variables (e.g., Sports, Ordinary People), and some with as many as five of the eleven market variables included in our analysis (e.g., Popular Music, Community Announcements). Five of the topics do not correlate with any of the market variables. These are: Crime/Police/Legal, Natural Disaster/Accidents, Food, Science/Technology, and Automotive. Focusing on the market variables, we see that they correlate with between two and seven of the identified twenty-five topics.

To assist in our interpretation of these results, we looked at the correlation among the market variables (see Table 4). We found that Circulation, Urbanicity, and Median Income are moderately correlated with each other (.544 to .693), that Competitive Newspapers and Readership Overlap are moderately correlated with each other and with Median Income (.344 to .430), and that Literacy and Minority Population are also moderately correlated with each other (.572).

-- Table 4 about here --

We also performed a One-Way Analysis of Variance to see whether the categorical variables correlate with the other independent variables. Results show that Public Trading and Independence categories do not correlate with any of the other independent variables. Region categories, on the other hand, correlate with Competitive Newspapers, Readership Overlap, Urbanicity, Minority Population, and Literacy.

These results suggest the presence of correlations among some of the market variables. To control for that, we regressed each of the content variables on the market variables. While the benefit of regression analysis is its ability to predict relationships among variables, we use it here primarily to control against spurious inferences about any one market variable. That is, we use regression analysis to test whether co-variations between market and content variables persist when more than one market variable is present, as is the case in actuality.

For each content variable we included in the regression equations only those variables that significantly correlated with it, as shown in Table 3. When content variables significantly correlated with any of our three categorical market variables, we created dummy variables and used a General Linear Model. Since computing standardized betas of dummy variables is questionable, Table 5 reports only the significance status of each of the categorical independent variables. Further interpretation of these results is in the text below. For content variables correlated with non-categorical market variables (e.g., Circulation or Median Age), we conducted a multiple regression. Table 5 provides the Adjusted R^2 for the regression equations, and the standardized betas for the market variables when available. The results show Adjusted R^2 ranging from .024 to .283.

-- Table 5 about here --

Regarding the categorical variables, the results show that,

- For Sports, the barely significant correlation between whether the newspaper is publicly or privately owned and the relative space devoted to Sports becomes not significant in a General Linear Model.
- For Politics, the relationship with Region remains: Newspapers in the south are likely to have more relative space devoted to Politics, followed by newspapers in the west, then the north, then the Midwest.
- For the Arts, the effect of Circulation and Public Trading remains, while Region drops. The effect of Public Trading is such that a newspaper publicly owned is likely to have more relative space devoted to the Arts than a privately owned newspaper.
- For Health/Fitness/Medicine, the effect of Literacy and Minority Population drops, but Region remains, with the northeast and Midwest regions likely to have more relative space devoted to Health/Fitness/Medicine, followed by the west, then the south.
- For Home/Garden/Real Estate, Circulation and Urbanicity are no longer significant, but Dependence and Median Income are. Median Income remains positively correlated with the relative space devoted to Home/Garden/Real Estate, and a newspaper owned by a large chain is likely to have more relative space

- devoted to Home/Garden/Real Estate than an independent newspaper or one owned by a small chain.
- For Community Announcements, the only remaining significant variable is Dependence: Newspapers owned by a small chain are likely to have more relative space devoted to Community Announcements, followed by newspapers owned by a large chain and then independent newspapers.
 - For Environment, Readership Overlap drops, but others remain. Competitive Newspapers remains negatively correlated and Literacy positively correlated with the relative space devoted to the Environment. Region is also a factor: Newspapers in the west are likely to have more relative space devoted to the Environment, followed by the south and the north, and then the Midwest.
 - For Movies, Readership Overlap and Median Income drop, while Competitive Newspapers remains positively correlated with the relative space devoted to Movies, and the west region likely to have more relative space devoted to Movies than other regions.
 - For Jobs/Career, a publicly owned newspaper is likely to have more relative space devoted to Jobs/Career than a privately owned newspaper.

What Table 5 makes clear is that many of the univariate relationships between content variables and market variables shown in Table 3 lose their significance when put to the test of a regression analysis. Most of the market variables exhibit weaker relationships with the content variables when the latter are included in a multiple regression. For example, while Region, Literacy, and Minority Population each have a significant relationship with Health/Fitness/Medicine in a bivariate analysis, only Region maintains its significance in the regression analysis. Put another way, of the variables we analyzed, only Region has a significant effect on the relative space devoted to Health/Fitness/Medicine in a given newspaper. Similarly, Independence is the only market variable that appears significantly correlated with Community Announcements in the regression analysis, indicating that Circulation, Competitive Newspapers, Urbanicity, and Median Income have no significant effect on the variation in Community Announcements. On the other hand, with some content variables, market variables maintain significant relationships. For example, Urbanicity, Median Age, and Literacy all have a significant effect on Education in the regression analysis (though Circulation does not). Similarly, Circulation, Readership Overlap, Median Income, and Median Age maintain their significant correlation with Travel (though Urbanicity does not).

In summary, we can conclude from Table 5 that:

- *Circulation* has an effect on The Arts, Travel, and Obituaries.
- *Competitive Newspapers* has an effect on The Environment, Movies, Television, and Fashion/Beauty.
- *Readership Overlap* has an effect on Parenting/Relationship, Ordinary People, and Travel.
- *Public Trading* has an effect on The Arts and Jobs/Career.
- *Independence* has an effect on Home/Garden/Real Estate and Community Announcements.

- *Region* has an effect on Politics/Government, Health/Fitness/Medicine, The Environment, and Movies.
- *Urbanicity* has an effect on Education.
- *Median Income* has an effect on Home/Garden/Real Estate and Travel.
- *Median Age* has an effect on Business/Economics/Finance, Education, Parenting/Relationships, and Travel.
- *Literacy* has an effect on Education and The Environment.
- *Minority Population* has an effect on War/International Conflict.

Discussion

To recount our main findings, we found that in a typical week, the average newspaper devotes approximately a quarter of the space it has for stories to Sports. Politics/Government, Business, and Crime follow, with the remaining 42% of the story space dispersed among 21 other topics. There is, however, deviation from this average distribution: Our findings suggest that newspapers vary in terms of how much space they allot to each topic. While all newspapers put most emphasis on sports, politics, business, and crime, some do more and some less than others. Our initial analysis showed significant covariation between the topics and several market variables, but further analysis showed that, on the whole, the relationship between content and market variables is negligible. What can we conclude from these results?

The first conclusion is that, with respect to the daily diet of news, newspapers are not particularly balanced. We did see that each newspaper studied devoted some space to each of the 25 topics we analyzed, and in that sense we support Bogart's finding that, "the average daily newspaper covers a tremendous range of subject matter."³⁴ But, we also found that four categories dominate over half of the story space in newspapers: Sports, Politics/Government, Business, and Crime. This means that news consumers may be able to find stories about their particular interests, say Religion or the Arts, in the paper but they would have to weed through a lot of stories about other topics. In fact, in a typical paper, every other page is about either Sports, Politics/Government, Business, or Crime. Only one-third of a page would be about the Arts and only about one-fifth of a page would be about Religion. This raises several questions: Why is newspaper content distributed this way? Does it serve news consumers? These are crucial questions that deserve further investigation.

As we mentioned, there is variation among newspapers with respect to the distribution of content topics – some newspapers are more balanced than others. This raises two issues. First, looking at the top 4 topics (Sports, Politics/Government, Business, and Crime), we see that they take up anywhere from 48% to 71% of the story space in a newspaper. Some might say that these are the topics news consumer need or want to know. But if that is true we would expect more uniformity across newspapers in terms of the topic mix. Unlike other elements of the newspaper – design, staff size, number of pages – it seems that the emphasis on different topics has less to do with the economics of the paper and more with, perhaps, editorial judgment.

Second, the fact that newspapers are varied in the distribution of content topics suggests that one person's news diet is different from another person's news diet. The variation across newspapers is such that a person living in one market may be exposed to twice as much Sports news as a person living in another market. No two newspapers serve the same daily diet of news. We are in no way advocating that all newspapers be the same. Rather, our question, which we address in the next section is, why is it that some newspapers put more emphasis on certain topics?

The answer we got from this study is that it does not appear to be market or demographic characteristics. The results show that market factors do not explain much of the variation in the emphasis newspapers put on different topics (R^2 ranges from .024 to .268). Competition, circulation, and ownership (much discussed in the literature) prove to have little independent effect on content. The demographic makeup of the market seems to have even less of an effect. Of all the independent variables we tested, Competitive Newspapers (number of other newspapers in the market), Region, and Median Age have the most impact – they each affect 4 out of the 25 topics. Circulation and Readership Overlap (the percent of the people in the market who read more than one newspaper) affect 3 topics each. The two measures of ownership (Public Trading and Dependence), Median Income and Literacy each affect 2 topics, and Urbanicity and Minority Population each affect 1 topic only.

It is nonetheless interesting that content topics vary in their sensitivity to market factors. Eight topics (Sports, Crime/Police/Legal, Natural Disaster/Accidents, Food, Science/Technology, Religion/Spirituality, Music, and Automotive) do not appear correlated to the market variables we measured. Ten topics (Politics/Government, Business/Economics/Finance, Health/Fitness/Medicine, Ordinary People, Community Announcements, Television, War/International Conflict, Fashion/Beauty, Jobs/Careers, and Obituaries) correlate to only one of the market variables we measured. Four topics (Arts, Home/Garden/Real Estate, Parenting/Relationship, and Movies) correlate with two market variables, two topics (Education and Environment) correlate with three market variables, and one topic (Travel) correlates with four market variables. These findings suggest that newspapers' decision how much to report on topics that generally receive less emphasis is more likely to take into account market characteristics, whereas the decision how much to cover some of the more emphasized topics is likely to rely on other considerations.

As a final point to this, we should stress that we do not want to claim that market characteristics have no, or even little, effect on content. We claim that they have little effect on content *as we measured it*; that they have little relationship to the emphasis different topics get in the newspapers. We do not dispute previous studies finding, for example, that ownership affects the number of editorials on controversial matters (see Shoemaker, 1987, p. 15). As Pamela Shoemaker stated in her work synthesizing current approaches to news content, "differences in the dependent variables and methods used in these studies make the results difficult to compare. We infer from these studies that the type of content variables being studied will affect whether a relationship is observed."³⁵

This study analyzes content for the purpose of deciphering the daily diet of news served by American newspapers. In addition to our particular (though, in our opinion, comprehensive) definition of newspaper content, we acknowledge some limitations. While the inter-coder reliability of the newspaper content is satisfactory, we learned that classifying a newspaper story into one category can be a difficult task. Improvements in coding rules and definitions can go a long way toward ensuring higher reliability. Also, other independent variables should be analyzed in order to clarify what it is that variations in content relate to. At the same time, we should be careful in what and how many variables we choose to include in our analysis, as regression models are sensitive to the number of variables entered. We should also consider that our sample week was in March, when there is an increase in college sports activities – a fact that may account for the exceptionally high emphasis we saw on Sports. Finally, the study does not provide trend data – it does not attempt to show changes in newspaper’s emphasis over the years. However, this study can provide a base line for future studies for the purpose of monitoring media content.

In conclusion, in 1981, Leo Bogart wrote,

Keeping up with the news... establishes and reinforces the connections between the individual and his social environment, defined narrowly as his home town or community, or defined more broadly as his country or the world. Newspapers, among the mass media, uniquely express this social bond, because of the sheer volume of information they carry from which every reader can select what is relevant.³⁶

This study attempted to answer the question, what information is in the newspaper for the reader to select from?

Table 1: Relative space devoted to topics in newspapers (%)^a

Space of stories (inch ²)	Mean	Std. Deviation	Minimum	25 th	Median (50 th)	75 th	Maximum
Sports	23.89	4.68	13.04	20.97	23.24	26.94	43.94
Politics/Government	18.20	3.78	10.09	15.43	17.71	20.55	33.91
Business/Economics/Personal Finance	7.87	2.19	3.19	5.63	7.27	9.39	24.55
Crime/Police/Legal	7.78	3.53	3.71	6.11	7.54	9.14	13.32
Education	3.77	1.68	0.60	2.38	3.43	5.07	8.56
The Arts	3.31	1.52	0.54	2.29	2.89	3.71	7.18
Health/Fitness/Medicine	3.05	1.34	0.84	2.32	3.07	4.09	10.74
Home/Garden/Real Estate	2.99	1.19	0.11	1.24	2.44	3.79	12.55
Parenting/Relationships	2.76	1.97	0.75	2.12	2.93	3.70	6.51
Ordinary People	2.72	1.85	0.32	1.55	2.36	3.58	11.11
Natural Disaster/Accidents	2.67	1.88	0.18	1.50	2.24	2.80	6.31
Food	2.37	1.19	0.30	1.17	1.86	2.87	6.87
Community Announcements	2.28	1.40	0.19	1.27	2.30	3.46	9.03
Environment	2.20	0.80	0.31	1.27	1.96	3.01	8.43
Religion/Spirituality	2.19	1.31	0.22	1.60	2.14	2.69	4.62
Technology/Science	1.93	1.09	0.25	1.15	1.76	2.51	4.96
Movies	1.79	0.98	0.10	1.05	1.64	2.44	5.17
Television	1.49	1.04	0.08	0.68	1.38	2.13	5.00
Travel	1.22	0.97	0.03	0.51	0.95	1.70	4.73
Popular music	1.15	0.96	0.03	0.49	0.90	1.52	5.23
War/International Conflict	1.14	0.92	0.06	0.41	0.92	1.65	4.42
Automotive	0.99	0.94	0.06	0.26	0.75	1.33	3.78
Fashion/Beauty	0.78	0.75	0.03	0.32	0.57	0.97	3.95
Jobs/Careers	0.71	0.59	0.02	0.27	0.54	1.01	3.47
Obituaries	0.46	0.37	0.02	0.19	0.37	0.64	1.79
Total	99.71						

^a Total equals less than 100% due to exclusion of miscellaneous content.

Graph 1: Descriptives: Space devoted to topic (inch²)

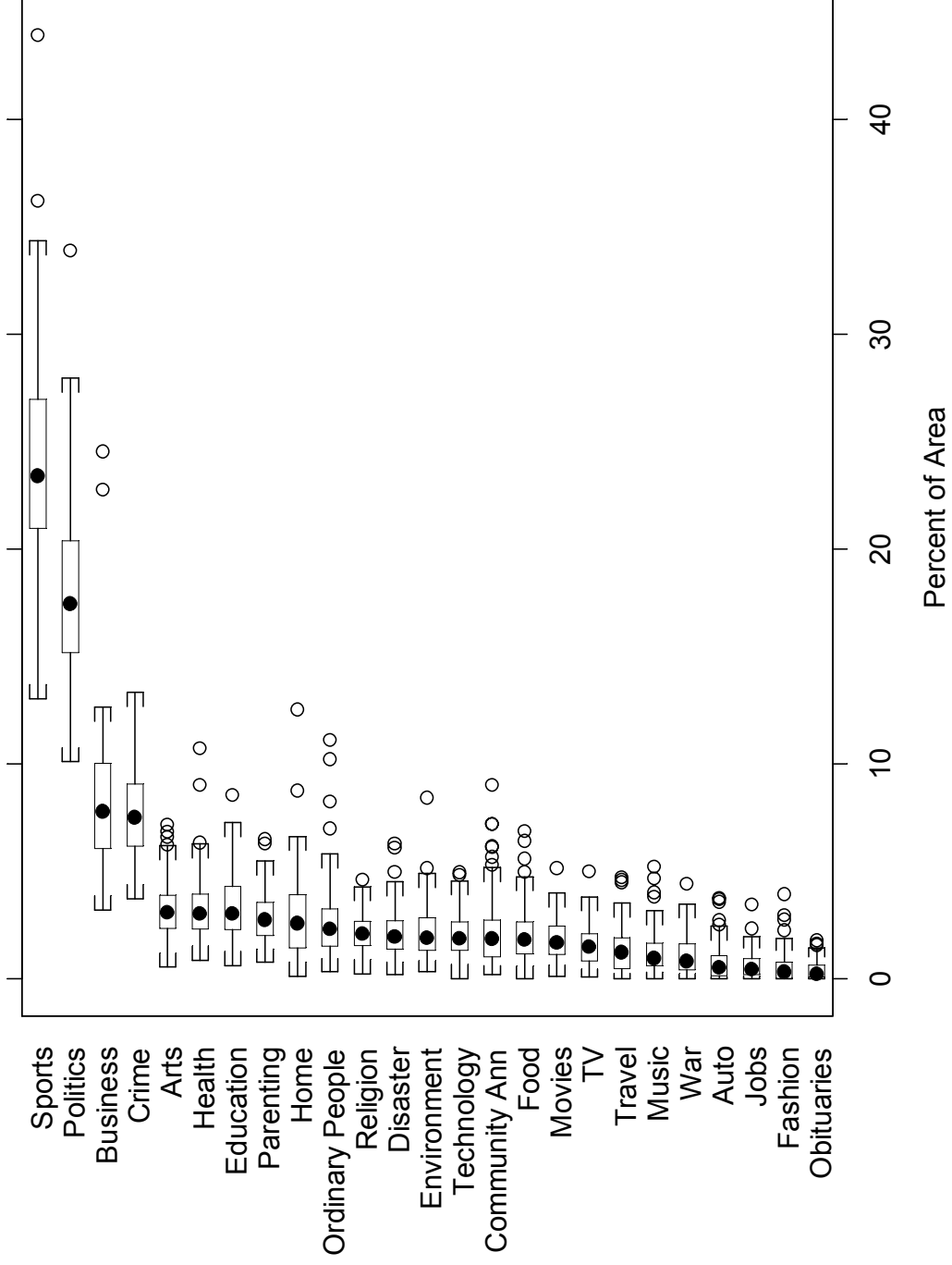


Table 2: Previous studies of newspaper content

RI 2000 inch²	Deutschmann 1959 column inches	Bogart 1977 story count	Stepp 1999 column inches
1. Sports	+	+	+
2. Politics/Government	+	+	+
3. Business/Economics/Personal Finance	+	+	+
4. Crime/Police/Legal	+	+	+
5. Education	+	+	+
6. The Arts	+	+	+
7. Health/Fitness/Medicine	+	+	+
8. Home/Garden/Real Estate	+	+	+
9. Parenting/Relationships	+	+	+
10. Ordinary People	+	+	+
11. Natural Disaster/Accidents	+	+	+
12. Food		+	
13. Community Announcements		+	
14. Environment		+	
15. Religion/Spirituality	+	+	+
16. Technology/Science	+	+	+
17. Movies		+	
18. Television		+	
19. Travel		+	
20. Popular music	+	+	
21. War/International Conflict	+	+	+
22. Automotive			
23. Fashion/Beauty	+	+	
24. Jobs/Careers			
25. Obituaries	+	+	+

Table 3: Correlation Matrix - Content and Market Variables^a

	Circulation	Competitive Newspapers	Readership Overlap	Public Trading ^b	Dependence ^b	Region ^b	Urbanicity	Median Income	Median Age	Literacy	Minority Population
% area of newspaper (inch) ²											
Sports	-.113	-.172	-.044	.201*	.193	.247	.004	-.192	-.154	.024	.029
Politics/Government	-.117	-.107	-.173	.195	.041	.317*	-.033	-.126	-.135	-.143	.067
Business/Economics/Finance	.169	-.073	-.013	.159	.106	.245	.050	.104	.298**	.029	-.116
Crime/Police/Legal	-.060	.144	.167	.034	.097	.234	-.048	.036	.017	-.029	-.080
Education	-.377**	.108	.084	.010	.212	.150	-.362**	-.205	-.264*	.224*	-.195
The Arts	.312**	.128	-.001	.210*	.202	.298*	.005	.081	-.034	.051	.024
Health/Fitness/Medicine	-.112	.053	.106	.039	.084	.402**	-.096	-.059	.142	.215*	-.226*
Home/Garden/Real Estate	.237*	.069	.026	.054	.339**	.113	.219*	.287**	.203	-.055	.019
Parenting/Relationships	-.106	.146	.251*	.145	.149	.260	-.118	.040	-.230*	-.088	.095
Ordinary People	-.129	.030	.199*	.023	.070	.169	-.164	-.051	.115	.074	-.058
Natural Disaster/Accidents	-.100	.204	-.002	.050	.112	.242	-.139	-.178	-.049	-.176	.082
Food	.048	-.044	.116	.080	.202	.090	.157	-.001	.069	.020	.058
Community Announcements	-.318**	-.223*	.042	.089	.355**	.114	-.373**	-.385**	.005	.013	-.105
Environment	-.101	-.328**	-.252*	.054	.084	.430**	-.085	-.152	-.030	.211*	.023
Religion/Spirituality	-.109	-.091	-.044	.134	.070	.240	-.161	-.105	-.172	-.301**	.258**
Science/Technology	.177	.006	-.054	.012	.071	.166	.147	.173	.043	.012	.034
Movies	.111	.327**	.207*	.054	.091	.328*	.194	.272**	-.200	-.007	.058
Television	.068	.247*	.094	.013	.147	.211	-.085	.079	.136	-.005	-.094
Travel	.457**	.158	-.229*	.006	.128	.140	.224*	.353**	.242*	.086	-.001
Popular music	.320**	-.004	-.101	.026	.083	.212	.407**	.320**	.111	-.278**	.287**
War/International Conflict	.051	-.060	-.041	.182	.134	.247	.051	.168	-.184	.003	.249*
Automotive	-.015	-.091	.045	.205	.095	.320	.148	.186	-.218	.103	-.032
Fashion/Beauty	.083	.287*	.211	.117	.086	.210	-.127	.095	.060	-.211	.266
Jobs/Careers	-.011	-.058	-.151	.227*	.185	.150	.037	-.048	.016	.193	-.085
Obituaries	.340**	.322**	.094	.032	.155	.088	.317**	.364**	.128	.024	-.005

^a Pearson r correlation coefficient is reported.

^b Pearson r was calculated by taking the square root of R² (=Between groups sums of squares/Total).

* correlation is significant at the 0.05 level.

** correlation is significant at the 0.01 level.

Table 3: Correlations among market and consumer variables

	Circulation	Competitive Newspapers	Readership Overlap	Urbanicity	Median Income	Median Age	Literacy	Minority Population
Circulation								
Competition-1	.188							
Competition-2	-.176	.387**						
Urbanicity	-.544**	.207*	.113					
Median Income	.554**	.430**	.344**	-.693**				
Median Age	.068	.053	-.021	-.012	-.029			
Literacy	-.070	.125	-.016	.089	.008	-.136		
Minority Population	.213*	-.169	-.120	-.278**	.242*	-.231*	-.572**	

* correlation is significant at the 0.05 level.

** correlation is significant at the 0.01 level.

Endnotes:

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- ¹ Leo Bogart, *Press and Public: Who Reads What, When, Where, and Why in American Newspapers* (Hillside, NJ: Lawrence Earlbaum Associates, 1981).
- ² “The Daily Diet of News: Patterns of Exposure to news in the Mass Media,” in: *How the Public gets Its News*, ed. Leo Bogart, (Newspaper Advertising Bureau: 1978),1.
- ³ In all fairness to Bogart, his team did in fact examine newspaper content in his 1977 study, which we will return to later.
- ⁴ <http://www.readership.org> (Readership Institute, Media Management center at Northwestern University)
- ⁵ <http://www.naa.org> (Newspaper Association of America)
- ⁶ J. G. Delia, “History of Communication Research,” in: *Handbook of Communication Science*, ed. C. Berger, and S. Chaffee (Beverly Hills, California: Sage, 1987).
- ⁷ Carl I. Hovland, Irving L. Janis, and Harold H. Kelley, *Communication and Persuasion: Psychological Studies of Opinion Change* (New Haven: Yale University press, 1953).
- ⁸ George Gerbner and Larry Gross, “Living with television: The violence profile,” *Journal of Communication*, 26 (1976):173-199.
- ⁹ Maxwell E. McCombs and Donald L. Shaw, “The agenda-setting function of the mass media,” *Public Opinion Quarterly*, 36(1972):176-187.
- ¹⁰ Herbert Gans, *Deciding What’s News* (New York: Pantheon Books, 1979).
- ¹¹ Gaye Tuchman, *Making News: A Study in the Construction of Reality*, (New York: The Free Press, 1978).
- ¹² Pamela J. Shoemaker and Stephen D. Reese, *Mediating the Message: Theories of Influence on Mass Media Content*, 2nd Edition, (New York: Longman, 1996), 28.
- ¹³ Paul J. Deutschman, *News-page Content of Twelve Metropolitan Dailies* (Cincinnati: Scripps-Howard Research, 1959), 1.
- ¹⁴ Bogart, *Press and Public*.
- ¹⁵ Bogart, *Press and Public*, 154.
- ¹⁶ Bogart, *Press and Public*, 160.
- ¹⁷ Carl S. Stepp, “Then and Now,” *American Journalism Review* 21(1999), 62.
- ¹⁸ Stepp, “Then and Now,” 64.
- ¹⁹ Paul J. Deutschman, *News-page Content of Twelve Metropolitan Dailies* (Cincinnati: Scripps-Howard Research, 1959).
- ²⁰ See, for example, Ben H. Bagdikian, *The Media Monopoly*, 5th Edition, (Boston: Beacon Press, 1997); Robert W. McChesney, *Corporate Media and the Threat to Democracy* (Seven Stories Press, 1997).
- ²¹ See, for example, Stephen Lacy, Frederick Fico and Todd Simon, ”Relationships among economics, newsroom, and content variables: A path model,” *Journal of Media Economics*, 2(1989):51-66; Stephen, Lacy, “The effects of intracity competition on daily newspaper content,” *Journalism Quarterly*, 64(1987):281-290; Stephen, Lacy, “The impact of intercity competition on daily newspaper content,” *Journalism Quarterly*, 65(1988):399-406, Robert M. Entman, “Newspaper competition and first amendment ideals: Does monopoly matter?” *Journal of Communication* 35(1985):147-165; Pamela Shoemaker, “Building a theory of news content: A synthesis of current approaches,” *Journalism Monographs*, (1987):103.
- ²² Note that some of the sampled newspapers do not publish on one or more days of the week, which is reflected in the total number of issues analyzed.
- ²³ Other types of content make up the rest of the space as follows: Advertising 58%, classified ads 12%, listings 9%, comics 2%, content promotion 2%, indexes <1%.
- ²⁴ Code book, instructions, and coding sheet are available from author upon request.

²⁵ We measured inter-coder reliability in several ways. First, all coders coded the same 10 randomly selected stories (reliability coefficient K_n averaged .75). Then, variable pairs of coders coded same subset of stories, about 1% of the stories (reliability coefficient K_n averaged .73). Finally, variable pairs of coders coded all 3,569 front-page stories (reliability coefficient K_n averaged .55).

²⁶ www.census.gov (United States Census Bureau)

²⁷ www.claritas.com (Claritas)

²⁸ www.accessabc.com (The Audit Bureau of Circulation)

²⁹ See, for example, Shoemaker, "Building a theory of news content"; Lacy, Fico and Simon, "Relationships among economics, newsroom, and content variables."

³⁰ <http://www.readership.org> (Readership Institute, Media Management center at Northwestern University).

³¹ See also Shoemaker, "Building a theory of news content."

³² Lacy, Fico and Simon, "Relationships among economics, newsroom, and content variables."

³³ <http://www.nifl.gov> (National Institute for Literacy)

³⁴ Bogart, Press and Public, 154.

³⁵ Shoemaker, "Building a theory of news content," 18-19.

³⁶ Bogart, Press and Public, 111.