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A Policy Research Partnership
to Reduce Youth Substance Use

Coding the News: The Development of a Methodological Framework for Coding and Analyzing Newspaper Coverage of Tobacco Issues

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Abstract

Previous research has demonstrated that analyses of press coverage of public health issues have important contributions to make to the improvement of media advocacy efforts as these relate to public health. Various methodological approaches have been used, ranging from studies that map levels of coverage across regions and time in a very quantitative way to more deeply focused qualitative discourse analyses of the editorial positions taken on particular issues. These alternative approaches provide different kinds of data, and expand knowledge in different ways. In this paper, we describe the evolution of a research project that incorporates both quantitative and qualitative approaches to the analysis of newspaper coverage of tobacco issues throughout the US. Our methodology is intended to capture some of the depth of understanding and sensitivity of the qualitative approaches while maintaining the generalizability and power offered by more quantitative methods.

Introduction

Over the last 40 years, overwhelming evidence regarding the harmful health effects of tobacco has prioritized the reduction of tobacco use in the public health arena. In service of this broad objective, there has been a growing push to promote policies restricting smoking in public places, to increase the price of cigarettes, and to restrict tobacco industry advertising and marketing. Significant efforts have also been expended to restrict youth access to tobacco products as well as to reduce levels of tobacco use among youth. Furthermore, various lawsuits have been filed against the tobacco industry seeking recompense for smoking-related damages on behalf of smokers, as well as both state and federal government.

As organized efforts to reduce tobacco use have grown, this has become a more newsworthy topic, and thus policies and events such as those described above have received increased press coverage across the US. The battle over attempts to increase cigarette taxes, to introduce and uphold smoking bans and a minimum purchase age and to recuperate smoking related health care costs from the tobacco industry have all attracted significant media attention. The volume and focus of such attention has, however, varied both across time and geographic locale.

Analysis of the nature of media coverage (and for the purposes of this study, press coverage) is essential for understanding the progress of public health campaigns, such as that to reduce tobacco use. There is significant evidence showing that newspapers both reflect pre-existing events and attitudes, but serve to shape popular attitudes and beliefs, act as agents of public education, and can play an important role in determining the

policy agenda (Baillie, 1996). The communications, media and policy literatures all assert that the presentation of issues as news shapes both public understanding of public health topics and future related policy.   Understanding the nature of such coverage (and the role that it may be playing in the success or limitations of various public health campaigns) could contribute to strengthening public health efforts.

Research Background and Aims

Our research has two primary aims. The first aim is to develop a coding and analysis system that will allow us to track variation in press coverage of tobacco issues in various US communities, and to incorporate such data into multivariate analyses.   The purpose of the Youth Smoking and the Media grant (funded through the State and Community Initiative of the Tobacco Control Research Branch, National Cancer Institute) is to relate indices of newspaper coverage of tobacco issues to teenagers' smoking attitudes and behaviors, as measured through the annual Monitoring The Future survey of 50,000 US youth. The survey data are gathered from communities from across the US, and our hypothesis is that the variation in news coverage between communities will contribute to explaining variation in youth smoking attitudes and behaviors.

We have amassed the circulation rates of newspapers in the communities in which these surveys were administered, and thus can attribute a likelihood of exposure to particular tobacco related issues and perspectives for each community. Certainly, it is not our hypothesis that newspaper coverage will directly influence young people's attitudes, beliefs and behaviors regarding tobacco. Rather, we propose that press coverage both

shapes and reflects local circumstances that will, in turn, have some bearing on youth smoking. In this case, the analysis of the newspaper data will be one variable feeding into a complex model of youth decision making with regards to tobacco.

The second research objective is to monitor patterns of press coverage of tobacco issues within states over time, and between various states. In this instance, the newspaper data will be used as an outcome measure of tobacco-control coalition effectiveness. This is pertinent to the evaluation of the SmokeLess States program (funded by the Robert Wood Johnson Foundation) which seeks to construct variables related to press coverage of tobacco issues that will contribute to an evaluation of a current large-scale state based prevention and control program. The program evaluation is based on the assertion that all other conditions being equal, as state-wide tobacco control efforts increase, so press coverage of such efforts and related tobacco issues should both increase and become more sympathetic to control perspectives (similar to that of Stillman et al, 2001).

In line with agenda-setting theory, newspaper data are being gathered as a means of evaluating the effectiveness of particular state based tobacco control activities. Articles on topics of interest for the evaluation will be captured through the coding framework that we have devised, and large-scale analyses will be conducted in which the coverage of particular issues, and the slant of such coverage, will be tracked across and between states. These analyses will serve as one outcome measure of the effectiveness of the SmokeLess States program. They will feed into multivariate evaluative analyses of such programs. Simple trend analyses of news coverage on tobacco issues may prove valuable

to tobacco control efforts. The analyses will also be fed back to state tobacco control coalitions in order to inform coalition members about press coverage of current efforts. Our intention is that such feedback should enable coalitions to improve the effectiveness of future advocacy efforts.

Theoretical Foundations and Previous Research

There is a well established literature pertaining to the importance of media portrayals of particular social issues or problems. There are few conditions or behaviors that have received societal concern or condemnation across times and cultures. Rather, our attention is drawn to certain issues at particular times. Not all issues can be afforded attention at any one time, and thus various actors work to define the nature of the problem both in such a way that it will gain public consideration, and that that the consideration will lead to particular preferred outcomes.

The social problems literature (Spector and Kitsuse; 1977, Best; 1994, Linders; 1998) stresses that the identification of particular issues as problems worthy of public consideration is key to the construction of their solutions. Analysis of which particular issues receive press attention is a valuable contributory factor in attempts to understand the progression of public attitudes and behavior, as well as policy.

In this study, we utilize newspapers as a proxy for the wider media. Looking beyond the specific issues being presented in the news, it would seem that journalists have considerable power to select what they present as news to their readers, and the

perspective from which any such issues are considered. Once one advances beyond the notion that there is a single 'objective' perspective from which a news story can be presented, then it becomes clear that newsmakers have the power to shape a story, both in topic and scope.

In other words, newspapers do not simply report on 'the real world'. Rather, they contribute to the creation and re-creation of this world. Articles are written in such a way as to guide how the reader should interpret events, as well as how they should incorporate this knowledge into their general understanding of the social world (Fishman, 1980). Additionally, newsmakers employ rhetorical devices in order to create interesting news. Stories are written to emphasize dramatic elements, heartstring issues or controversy. Furthermore, journalists frequently draw upon commonly held values to underline the importance of a particular story, and heuristic 'frames' are employed to highlight specific aspects of an issue and to provide privileged interpretations. In turn, the employment of such devices is likely to shape audience reactions and future attitudes and behaviors.

Thus, analyses regarding the framing of tobacco issues in the mass media may improve understanding of both the successes and limitations of public health efforts and campaigns in relation to tobacco (Menashe and Siegel 1998). Furthermore, analyses of the news can also serve to improve our understanding of societal values and concerns at a given time, because the definition of what is newsworthy entails both contemporary understanding of the significance of specific events, as well as commonly held perspectives on institutional behavior and motives (Tuchman, 1978).

Although there is clearly value in analyzing the issues, frames and arguments being presented in the news, a strong consensus has not developed as to how best to do this. Previous studies have taken quite disparate approaches to textual analysis, tending to focus either on a qualitative or quantitative approach. Each trajectory offers different strengths and weaknesses.

Where researchers have an interest in the extent of coverage on a particular topic, there is a call for a quantitative content analytic approach. Quantitative analyses of the level of coverage afforded to the particular issues, as well as of possible variance of coverage between particular newspapers or geographical regions have served as indictors of the types of tobacco/smoking related issues generally considered to be 'newsworthy'. In such studies, observable and countable data are constructed, such as counting the appearance of tobacco related articles in particular newspapers, or the occurrence of particular words or phrases within any article that should appear. Such analyses may also suggest relationships between levels of coverage and characteristics of both the news outlets and their readership.

There is a well-established literature of such content analytic projects that relate to the occurrence of smoking and tobacco issues in the mass media. Whelan et al (1981), for example, surveyed coverage of smoking in women's magazines and identified the magazines that published smoking related articles during a specified period, and the percentage of these that adopted either an anti-smoking or pro-quitting position. The

authors also identified the proportion of health related articles within these magazines dealing with smoking issues, and concluded that the paucity of anti-smoking articles was related to the importance of tobacco advertising as a source of revenue for the magazine.

Quantitative approaches have also been applied to analyzing press coverage of specific tobacco related issues have also been conducted using a quantitative approach. Kennedy and Bero (1998), for instance, conducted a content analysis in which they tracked the escalation of coverage of the issue of passive smoking in newspapers and magazines in the 1980s and 1990s, and illustrated a journalistic tendency to call upon tobacco industry representatives as experts. Furthermore, they found that scientific research relating to the effects of secondhand smoke tended to be presented as controversial.

From a slightly different perspective, Magzamen et al (1997) conducted a quantitative content analysis of press coverage relating to California's proposed smoke-free policy for bars which revealed that nearly half of the news articles about this issue were opinion pieces (editorials, columns and letters to the editor), rather than the standard, straightforward 'hard news' pieces. Hard news articles are the mainstay of newspaper reporting. The finding that nearly half the articles on this topic were opinion pieces was therefore unexpected, and suggests that the issue of smoke-free bars provoked emotive responses among newsmakers, and thus presumably their readership. Magzamen et al were also able to determine both that the tobacco industry representatives and public health advocates focused on different aspects of the proposed policy, and that the tobacco

industry representatives were more successful in gaining consistent coverage of their perspective.

Similar quantitative approaches to analyzing the news have been adopted to assess ongoing policy efforts. Stillman et al (2001), for example, incorporated an analysis of press coverage of tobacco policy as one measure of the effectiveness of the ASSIST (American Stop Smoking Intervention Study) program. They hypothesized that assuming the program was effective, the rate of press coverage of tobacco related issues would be greater in those states in which the intervention was being implemented. Their study found no significant change in the level of press coverage between non-intervention and intervention states. This analysis may, however, have been more sensitive to change if the methodology had allowed for an even greater consideration of the nature of the coverage, particularly whether or not coverage tended to become more favorable in the intervention states even though the level of coverage did not increase. Stillman et al's slant variable (measuring whether an article was favorable or oppositional to tobacco control) was restricted to overtly opinionated coverage, such as editorials, columns and letters to the editor. Thus, for the majority of articles (hard news pieces) there was no measure of tone or slant.

This type of more detailed analysis of the presentation of particular issues is, however, more suited to a qualitative approach to the analysis of text. Qualitative researchers seek to identify thematic or theoretical trends, without employing counts of particular words or items across articles. Qualitative analyses of the news can further understanding of

society by revealing which ideologies, assumptions and connections are being called upon to frame important news stories. For example, one might adopt a frame analysis in order to assess how particular issues are selected and made salient to the audience. Such a method would be appropriate in situations where the researcher is less concerned with how social norms determine what is newsworthy, than with how newsmakers simultaneously invoke and define social norms to persuade their audience of a particular point of view. Qualitative textual analysis often involves a consideration of the use of particular words or phrases. Researchers work to extract themes and meanings from the text that both underlie and consume the particular words employed.

One limitation of such studies is that they are rarely appropriate for large volumes of data because of the level of analytic depth required. Furthermore, the specificity of the data and the analytic approach may make generalizability a more challenging objective (although theoretical generalization is both possible and important).

There have been several qualitative studies of news coverage of tobacco issues – although this field is not as developed as the quantitative content analytic approach. Menashe and Siegel (1998), for example, conducted an analysis of the frames employed in front-page coverage of tobacco issues in the *New York Times* and the *Washington Post* from 1985 to 1996. This study identified eleven 'tobacco interest' frames and ten 'tobacco control' frames that were being fairly regularly employed in press coverage and demonstrated the means through which powerful associations and claims relating to

tobacco issues are made. They suggest that the tobacco industry has been more successful than public health advocates in promoting a consistent, powerful and clear message.

Lima and Siegel (1999) examined the framing of tobacco policy issues by the press during the Master Settlement Agreement (MSA) debate of 1997-1998. Their qualitative analysis of over one hundred hard news articles from the *Washington Post* revealed that the possibility that the settlement would generate new revenue for the states was deemed to be the most newsworthy tobacco-related topic at this time. Their analysis also identified a tendency for newsmakers to frame the problem of tobacco solely in relation to youth (as a child protection rather than a general public health issue). It would, however, be quite difficult to generalize findings based on the analysis of one hundred articles from one particular newspaper to provide an accurate reflection of US newspaper coverage. Clearly, a representative sample of articles from a wide variety of newspapers would offer more scope for generalizability. Unfortunately, the effort entailed in conducting qualitative research does not usually support such a breadth of analysis as well as depth.

Both qualitative and quantitative studies of newspaper coverage of tobacco issues have provided important insights for tobacco control. The existing research has illustrated the types of issues that tend to get coverage, the actors that are accredited with expert status, the particular perspectives presented by journalists, as well as the consistency of particular messages.   Previous studies have, however, tended to focus *either* on a

widespread quantitative analysis of the type and level of coverage, *or* a qualitative scrutiny of the way that particular issues or perspectives are reported.

In this study, we seek to incorporate both quantitative and qualitative analytic elements in our examination of the value of news as data. The basic elements of our design are closely built on the experience of previous researchers in this field. It was never our intention to reinvent the wheel, but rather to adapt effective designs to address our particular research objectives (to incorporate a newspaper variable into a multivariate analysis of youth smoking attitudes and behaviors, and to use newspaper data as an outcome measure of state level tobacco-control coalition efforts). Firstly, we sought to develop a methodological framework whereby newspaper data could be used as one variable in analyses that seek to explain variation in young people's attitudes and behaviors related to smoking. What messages are newspapers relaying to the young people themselves as well as to community opinion leaders, policy makers, parents and teachers? Secondly, we aimed to use newspaper coverage of tobacco issues as an outcome measure of statewide coalition efforts – particularly in relation to agenda setting.

As we will discuss in the following sections, the volume of our data and our primary outcome measures at first seem most suited to a quantitative approach. Quantitative measures are particularly pertinent given the applied nature of this research and the underlying intent that the research should usefully inform future policy trajectories as well as research efforts. Quantitative studies are often seen as having more influence and reliability than smaller scale, qualitative work. Furthermore, there is a tendency for

decision makers to measure truth by the amount of media coverage afforded to a particular position (Ryan, 1991) – thus favoring a quantitative approach. Finch (1986) also argues that policy research is often funded by bodies seeking statistical 'facts' that are essentially neutral and open to straightforward application (this is in the British political context, but seems to make sense within the U.S. as well), and our data are well situated to provide such analyses.

As outlined in the media advocacy and health communications literatures, however, quantitative content analysis is often limited by the extent to which it is capable of fully capturing the complex processes by which the mass media both influences and reflects social problems and the public agenda. A rudimentary consideration of existing literature reveals an intricacy better suited to qualitative approaches; qualitative methods facilitate more in-depth, exploratory analyses that focus on the reflection of perspectives, rather than the production of objective facts.

We therefore set out to incorporate both qualitative and quantitative elements into this research. The research team's analytic plans are essentially balanced between the quantitative and qualitative paradigms. The core analyses are largely quantitative, but one of the strengths of the coding framework is that the initial coding supports further exploratory case studies and descriptive analyses.

The notion of combining the principles of qualitative and quantitative analysis has been a longstanding challenge for social researchers. The basic tenets of quantitative research

emphasize objectivity, generalizability, and reliability. Such notions favor large sample sizes, standardized reporting measures and analytic variables. Qualitative studies, on the other hand, do not rely so much on pre-formulated research questions, but instead tend to emphasize the importance of analytic understanding, theoretical application and the creation of further hypotheses for investigation.

Research Design

Raw Data

Since late 2000, we have been collecting articles from a sample of approximately 350 US daily newspapers, and in December 2001 this sample was extended to incorporate a census of all US daily newspapers (just over 1400 newspapers). This census is estimated to yield approximately 4000 relevant articles per month (over 150,000 articles during the life of the two studies).

Our raw data (the news articles) are gathered on our behalf by one of the leading national press-clipping companies. The research team designed inclusive reading instructions for the service in which tobacco terms (such as smoking, tobacco, cigarettes, Philip Morris etc) are identified when they occur in conjunction with key tobacco control terms (such as laws, policies, bans, community events etc). These reading instructions will remain constant throughout the life of the grant in order to provide comparable data. The reading service excludes any 'one-line' mentions of smoking or tobacco that are not in conjunction with tobacco control terms. This relatively inclusive approach to gathering raw data was adopted in order that the research team (rather than the staff of the reading

service) make the important decisions as to the level of coverage included in the database. The press clipping service sends the research team hard copies of articles on a weekly basis.

After the raw data arrive at the research center, the articles are read and organized by a research assistant (or other member of the research team).   Any articles that do not have at least one paragraph dealing exclusively with tobacco related issues are excluded from the database. The excluded articles are archived by month, to facilitate checking the consistency of exclusion of articles over the life of the projects. Remaining (included) articles are filed by day and given a unique identifier. The articles themselves are also archived in a searchable format to facilitate possible future retroactive data collection and analysis.

Sampling

As described, all of the articles that meet our 'one paragraph' inclusion criteria are given a unique numeric identifier and added to our newspaper archive. The volume of data and the nature of our coding protocol (described in the following section) are such, however, that it is beyond our resources to code every article. It was therefore necessary to devise an appropriate sampling strategy. We did this by conducting exploratory sampling techniques based upon the ASSIST data and coding system. The accuracy of various sampling strategies was explored. We considered sampling either one half or one third of the articles. We considered using the article as the unit of analysis for sampling or a day's clips.   Further issues as to whether to sample every week, month or year were also

deliberated. Previous studies have sampled using a 'reconstructed week' approach, and thus this option was also considered. All of the various sampling strategies provided fairly accurate approximations of the ASSIST universe at both the half and one third levels. Given both practical and theoretical considerations, we chose to sample articles from a random one-third of days within each month. Thus, we are coding all of the articles that are published on a particular day from approximately 10 days per month. The sample days themselves were determined using a random number generator. This sampling system dramatically reduced the volume of articles to be coded, while preserving their representativeness .

The Coding Protocol

The research team spent 18 months developing a theoretically derived and rigorous coding framework and protocol. Our aim was to balance a quantitative content analysis of the prominence of tobacco coverage and the topics being covered, with a more qualitative assessment of the slant of coverage and further, more in-depth frame analyses of selected case studies. We sought to develop a system that both incorporated some of the detail of qualitative studies, but was also replicable, teachable and appropriate for our vast dataset. Our methodological design involves a careful adaptation of qualitative techniques into a sustainable and reliable coding system that can be used by a research team of five coders with a heavy volume of data.

The sheer volume of data requires a team of several coders, which has pushed us to create a more robust and transferable coding system than we might otherwise have developed

with our relatively qualitative measures. Originally, using the ASSIST coding system as a springboard, two members of the team devised a coding system which was then taught to and implemented by the larger group. This initial coding framework was developed based upon the existing literature and reading several hundred recent tobacco related news articles over the period of a year. The core research team met weekly to learn, apply and adapt the coding system to example articles.

During this period, inter-coder reliability measures were calculated and the coding manual was refined extensively in order to reduce ambiguities and improve the reliability of the variables across coders and time. Coding rules were developed in relation to each of the variables that served to reduce the interpretation required on the part of individual coders. Over several months of working with the coding protocol to code groups of newspaper articles, the system was significantly modified until the team achieved high levels of consistency and concordance among all members. Given that we have nominal data and several coders, we utilized Cohen's Kappa statistic to calculate the level of our concordance. We endeavored to achieve a kappa score of at least 0.81, as this is generally acknowledged to reflect almost perfect concordance. The team is working to refine variables until such a level is attained for each variable.

The coding framework is made up of four types of variables: article descriptors, prominence indicators, content and slant (See Appendix 1 – coding form). The descriptive variables are the unique ID (consecutive numbers), the date of publication and the newspaper of publication. These are recorded for each of the articles.

Our prominence variables were adapted from the measures used by Stillman et al (2001). The prominence variables will contribute to an index or 'weighting score' for each article, and relate to whether or not the article appeared on the front page and whether it was accompanied by an image or photograph. The articles are also measured (to the closest square inch). The weighting score will reflect differences in likelihood of exposure, and thus potential impact. It ensures that a small article on page five without any image will not be analyzed as if it has the same value as a front page story with an eye-catching photo.[1]

Our coding framework also includes a 'tobacco focus' variable. Articles that have at least one paragraph dealing with tobacco issues, but in which neither of these are the focus of the article (i.e. at least half the paragraphs deal with either tobacco issues) are included in the database in a limited fashion. Such articles are coded for the descriptive and prominence variables, but are not coded for either the content or slant variables. Non-tobacco focused articles are not measured, and thus will not be included in any analysis drawing upon the weighting score.

Some studies have used such 'prominence variables' alone to assess the exposure and likely influence of newspaper coverage of particular issues on public opinions and

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[1] Concurrent with the development of the coding framework, analytic variables were derived for quantitative analyses of the relationship between newspaper coverage and youth smoking attitudes and behaviors. The development of such an integrated framework posed several epistemological and practical challenges, but has served to create opportunities for analytic sophistication not previously encountered. The development and application of this system by which prominence, content and slant are attributed to various communities will be discussed in a future working paper.

expectations. Our analysis plans, however, call for additional variables to those related to the level and prominence of tobacco related coverage. As already argued, we hypothesized that the particular topics being afforded attention and the nature of such attention are both key to understanding the influence of news coverage. Thus, it was necessary to develop a method for recording and analyzing the content of particular articles. Our content variables were derived from both the tobacco control literature and a preliminary analysis of a sample of recent news articles. These resources were used to construct (as far as feasible) a comprehensive index of possible tobacco related issues, and this initial list of well over one hundred subjects was then refined to create the mutually exclusive categories that would comprise the content focused element of our framework through the 'theme' and 'primary topic' codes.

The primary content variable relates to the overall 'theme' of the article. The theme variable is perhaps best elucidated in reference to the question, "*What makes this issue news today*?" This variable pertains to the area of tobacco control that is presented as being particularly newsworthy in each article. The extensive list of tobacco issues was coalesced into twelve mutually exclusive overarching themes, for which each article is coded (Table 1). The small number of articles that fall outside of these themes are coded as 'other'. Every article is coded for one of the themes.

Table 1: Themes

1	Health Effects of Smoking	Positive and negative health effects of tobacco use, health benefits related to quitting, etc. Look for references to cancer, heart disease, emphysema, etc.
2	Secondhand smoke and Related Smoke-Free policies	Articles related to second hand smoke, as well as the legislative action relating to these issues (e.g., outdoor smoking restrictions, etc.)
3	Tobacco Consumption	Tobacco consumption trends (i.e., smoking has gone up or down), number of cigarettes smoked per day, types of people who smoke.
4	Tobacco Advertising, Promotion and Sponsorship	The use of advertising, promotional activity and sponsorship on the part of tobacco companies. Bans/restrictions on such advertising would also be included here.
5	Economics	Monetary costs of smoking and tobacco use, to both individuals and society as a whole. Doesn't include price of the tobacco crop.
6	Farming and Trade	Tobacco as a crop, not as a consumable product. Tobacco farming and trade in tobacco.
7	Product & Regulation (not addiction)	Physical components of tobacco products (e.g., tar, nicotine, ammonia) and the regulation of these components.
8	Addiction	Addictiveness of cigarettes/nicotine, the nature of addiction and addicted people. Includes both physical and social aspects of addiction.
9	Youth Access and PPU (purchase, possession and use)	Accessibility of tobacco to youths, the criminalization of youth access, restrictions on purchase and sale of tobacco products.
10	Education, Prevention and Cessation Programs, Products & Campaigns	All articles relating to efforts to prevent or stop smoking. National and local campaigns, individual attempts to quit. Includes products such as nicotine gum and patches.
11	Unintended Smoking Damage	Accidental effects of tobacco use such as fires, litter, accidents.
12	Tobacco Industry/Companies	Articles in which the subject is either a specific tobacco manufacturer (Philip Morris, R.J. Reynolds, etc.) or the Tobacco Industry ("Big Tobacco")
13	Other	Articles that do not match any other themes. Will include topics that the group has not addressed before. Hopefully this theme will be used infrequently.

Beyond the overall theme variable, we identified a potential analytical benefit to creating a more detailed measures relating to specific tobacco related issues. Furthermore, many of the articles incorporate a variety of tobacco related issues. The idea of a 'topic' variable was therefore developed whereby each article could be coded in relation to numerous, specific issues. The topic variable differs from overall theme in that whereas the theme variable reflects the overall article focus, the topic variable is associated with a more specific description of the focus or thrust of the article. The coder reads the article and considers which of the specific tobacco control topics is driving the coverage. Usually such an issue is given prominence in an article, and thus in any instances where two or more topics are given prominence, priority will be given to that which is the topic of the headline and lead paragraphs.

An original list of over seventy exclusive, but quite specific, tobacco related topics was compiled. Initially, the intention was for each article to be coded for up to four topics. This system, however, proved to be too problematic in terms of both achieving and measuring concordance. Ultimately, the number of topics was reduced to 34, as shown in Table 2.

Table 2: Topics

TOPIC CODES	BRIEF DESCRIPTION
1. Formal Reports of Prevalence and Consumption	*Prevalence of smoking, smoking habits. Formal reports rather than personal opinion.*
2. Addiction and Quitting	*Addiction to tobacco products. Stories about addiction and quitting.*
3. Harm Reduction	*Reducing physical harm caused by tobacco products through lower tar, etc.*
4. Cessation Programs, Services, and Products	*Formal cessation assistance – advice, patches, programs, etc.*

5. Youth Smoking Behavior	*Youth smoking as distinct from smoking by general population – specific issues, etc.*
6. Youth Purchase, Possession and Use	*Smoking bans, focus on youth tobacco activity, school suspensions, etc.*
7. Youth Access	*Criminalizing the selling of tobacco to youth, restricting self-service, etc.*
8. Youth Focused Education/Prevention	*Cessation and prevention programs for, with, or about youth.*
9. Negative Health Effects	*Smoking as damaging to health, as cause of death. Includes cancer, emphysema.*
10. Non-Negative Effects of Smoking	*Scientific findings that tobacco use has positive effects.*
11. ETS Health and Comfort Issues	*The effect of others' smoke on one's health.*
12. Indoor Smoking and Bans	*Introduction, effects and enforcement of indoor smoking bans .*
13. Outdoor Smoking and Bans	*Discussions of bans in outdoor locales (includes anything that isn't entirely enclosed).*
14. Domestic Smoking and Bans	*Bans on tobacco use within private spaces (e.g., homes).*
15. General Smoking Bans	*General smoking bans, no mention of specific places.*
16. Cigarette Content and Regulation	*Ingredients in cigarettes, controlling that they contain, packaging regulation.*
17. Other Tobacco Products	*Non-cigarette tobacco products.*
18. Other Nicotine Delivery Devices	*Alternative ways of delivering nicotine.*
19. Societal Costs of Smoking	*Monetary costs to society as a result of tobacco-related issues.*
20. Personal Costs of Smoking	*Financial cost to smokers (e.g., lifetime spending)*
21. Effects of Regulation/Litigation	*Economic and social effects of tobacco regulation and legislation.*
22. Cigarette Taxes and Prices	*Raising the taxes on cigarettes, effect of cigarette prices hikes.*
23. Unintended Damaging Effects	*Unforeseen damage such as litter, fire, accidents, etc.*
24. Non Point of Purchase Marketing and Promotion	*Marketing and promotion that does not take place in retail outlets.*
25. Point of Purchase Marketing and Promotion	*Discussion of retail outlets where cigarettes can be sold.*
26. Tobacco Industry Lobbying	*Tobacco Companies' relations with political figures, groups or parties.*

27. Tobacco Company Performance	*Financial performance of tobacco companies, either individually or as a whole.*
28. Industry Non-Tobacco Activities	*Tobacco companies' interests outside of cigarette production.*
29. Tobacco Farming and Processing	*The tobacco farm industry, including such things as leaf price and crop yield.*
30. Tobacco Trade	*Sales of tobacco to markets outside of the United States.*
31. Funding Anti-Tobacco Activities	*Where money for anti-tobacco efforts comes from.*
32. Anti-Tobacco Programs and Events	*Activities, advertising, programs on state and national level.*
33. General Policy and Regulation	*Discussion of tobacco regulation as a general topic.*
34. Other	

The topic and theme variables were designed to support distinct areas of the analyses. These variables provide the researchers with the opportunity to consider the data from several perspectives. The theme variable was designed to allow analyses of broad issues for the entire dataset, whereas the topics permit more detailed analyses of subsets of the data.

Beyond the particular issues being covered by the media, however it is also well established that the way that the press covers particular events/issues is particularly influential (Chapman; 1989, Menashe and Siegel; 1998). Previous researchers have therefore struggled to capture the 'tone' or 'slant' of coverage. We therefore worked to design a variable that incorporated important elements of frame analyses, but that would be applicable to a wide volume of data.

The methodological approach taken towards a 'slant' or 'valence' variable in previous research has tended to rest upon the assumption that all newspaper coverage can be categorized as inherently "good" or "bad" for either side of the tobacco debate. Previous research has tended to assume that the press plays a relatively straightforward role in relation to introducing topics or issues. Our analysis is intended to challenge such an assumption by carefully considering the work that is being done through the press to persuade the readers of a distinctive stance or image on particular issues.

There has also been a tendency to limit this type of coding to overtly opinionated pieces (such as editorials and columns) because of the journalistic convention of ostensible objectivity make tone more difficult to determine in hard news articles. This, however, leaves the majority of articles without any assignment of slant or tone, which has proved limiting for such research. We have sought to advance previous research by developing a more sensitive slant variable that is applicable to both hard news and more opinionated pieces.

In the first instance, two members of the research team developed fourteen tobacco control 'frames' (Table 3). The definition of 'frame' that was adopted within this research related to the idea of underlying assumptions, beliefs and ideologies that serve as heuristics for how a particular story should be understood. Several of these frames support a pro-tobacco position, several support an anti-tobacco position and several could be called upon by either side of the debate.

Table 3: Frames

FRAME CODES	BRIEF DESCRIPTION
1.Government Keep Out	*Prioritization of individual rights, the Land of the Free*
2. Tobacco as a Legitimate Business	*Tobacco is no different to any other business, legal product, corporate freedom*
3. Smoking Portrayed as an Acceptable Behavior	*Smoking isn't that bad, smoking is an acceptable vice, smoking is beneficial*
4. Tobacco Portrayed as the Underdog	*Tobacco industry and smokers are 'whipping boys', David vs. Goliath*
5. System Cynicism	*Regulation will never work, lawsuit fatigue, health nazis, carpet baggers*
6. Youth Portrayed as Vulnerable	*Young people are an 'at risk' population*
7. Tobacco Portrayed as a Dinosaur	*The fight has been won, the tobacco industry is dying, post-tobacco era*
8. Greedy Government	*State uses the tobacco industry for revenue, bleeding the tobacco industry dry*
9. Smokers Portrayed as Acting on Free Will	*People are responsible for their own actions, nobody made them smoke*
10. Smoking Portrayed as a Societal Problem	*Society needs to do something about smoking, solutions should be collective*
11. Formal Intervention Portrayed as Appropriate	*People need to be protected and only formal laws and regulation will work*
12. Smoking Portrayed as Socially Unacceptable	*Smokers are weak, irresponsible or putting others at risk. Smoking is unattractive*
13. Smoking Portrayed as Risky	*Smokers take risks, smoking kills, smoking is physically damaging*
14. Negative Portrayal of the Tobacco Industry	*Big Tobacco is ruthless and greedy, killer product, customers are victims*

It was initially planned that all articles would be coded for at least one overarching frame, but as with the topic variable, the development of the coding process revealed a difficulty in achieving concordance in relation to the frame variable. The discordance resulted

partly from the difficulty in identifying the frames, particularly in many of the 'hard news' articles. Thus, the frame variable developed as one that would only be applied to a subset of articles that were clearly opinionated. This was often felt to be unsatisfactory because it left the majority of articles with no measure of any kind of 'valence'. Furthermore, there were significant areas of overlap between the frames, and newsmakers frequently called on more than one frame to support their arguments. Later, the development and training process revealed considerable difficulties in achieving inter-coder reliability and reliability for the frame variable – even when restricted to opinion pieces.

The development of the frames was beneficial in terms of identifying themes, rhetorical language and ideologies from the news articles, and the frame concepts will be used to underpin qualitative case studies of particular issues or types of coverage. Eventually, however, for the central analyses, the frame variable was modified and simplified to form a two-part 'slant' variable that could be applied to all of the articles. Rather than coding for a particular frame, the 'slant' variable would reflect whether the report was of events and/or opinions that are favorable to tobacco control.

The slant variable is made up of two distinct parts (the **event slant** and the **opinion slant**) in order that the slant of the event can be kept separate from the slant of the opinion in any future analyses. Both slant variables can be coded in one of four ways: positive for tobacco control, negative for tobacco control, mixed impact on tobacco control, and a neutral effect (Table 4). Our partitioned variable allows us to address both the possible

impact of the reporting of a particular event on tobacco control objectives, as well as the particular position or perspective being adopted by the author or journalist who is responsible for the article.

Table 4: Slant

Event Slant	Positive for Tobacco Control	Negative for Tobacco Control	Neutral	Mixed
Opinion Slant	Positive for Tobacco Control	Negative for Tobacco Control	Neutral	Mixed

For the purposes of determining event slant, the event that is focused upon is that which is deemed to be newsworthy on a particular day. This includes such things as the findings of a scientific study, the passage of a policy, an organized event opposing or supporting a particular piece of tobacco-related legislation, the launch of a product or campaign, etc. The reporting of a particular event can be positive for tobacco control, negative for tobacco control or it might be mixed news. Any event that supports further education, regulation or restriction on the tobacco industry would be coded as "Positive for Tobacco Control". Any event whereby the position of the tobacco industry is upheld, or regulations are overturned would be coded as "Negative". "Mixed" events are ones whereby some of the news is good and some is bad – often this pertains to consumption reports, or the outcome of retail sting operations. A "Mixed" label would also be applied to events where the consequence for tobacco control is not clear – such as the release of a new cigarette with apparently reduced cancer causing constituents. It is also possible

(particularly in opinion pieces) that no clear event is specified. In such cases the article would be coded as 'neutral' for the event slant.

The opinion slant, on the other hand, reflects the dominant view being put forth by the author, and coding for this variable involves ascertaining whether this view is positive for tobacco control, negative for tobacco control, has mixed effects on tobacco control, or has a neutral impact. Most often, hard news articles will be coded as neutral for the opinion slant as these pieces are more likely to be written in a relatively un-opinionated style. However, occasionally there are hard news clips where a clear opinion is expressed early in the article as a means of "setting the stage". In such instances, these articles will be coded for opinion slant. Our coding system offers more sensitivity than previous coding systems because the majority of articles (hard news pieces) are attributed with some valence through the event slant.

Summary

Previous research has illustrated that analyzing the press coverage of a policy issue can be valuable to understanding the public reception of efforts, as well as the progress of regulatory changes. Textual analysis has well-established and parallel traditions that tend to fall quite squarely into either a quantitative or qualitative paradigm: content analysis on one hand and discourse and frame analysis on the other. The theoretical background, data and outcome measures for the present study of newspaper coverage of tobacco issues attempt an amalgamation of these approaches.

The development of the theoretical model upon which our analysis rests drew heavily on qualitative traditions, whereas the operationalization of the coding framework was more in line with quantitative conventions. Thus, we expect our analyses to pull from both paradigms. The decision to integrate methodologies best suited to the research purposes posed significant challenges. Often these challenges led to methodological or analytic compromises in order to protect the most fundamental values of this integrated approach: quantitative rigor aligned with qualitative sensitivity.

The coding framework that has been developed facilitates the mapping of the extent of coverage on tobacco issues across time and geographic regions. The nature of the variables is appropriate for the volume of data and the specific research projects for which the articles are being collated. The prominence and content variables allow us to track the ebb and flow of coverage of particular tobacco-control issues, and the slant variables provide some insight into whether the message to be taken away is likely to be favorable or oppositional for tobacco control. The development of this framework draws extensively on previous analyses of press coverage of tobacco issues, as well as gleaning insight from the wider social problems and communications literatures. The coding framework underpins analyses that will indicate where, when, and how tobacco issues are being dealt with by the U.S. press.

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Appendix 1

Smokeless States/Media Grant Coding Form

Coder_____   Article ID_____   Refer back to group? _____

I. Descriptive Variables

Front Page?	Y	N
Image?	Y	N
Tobacco Focus?	Y	N
Tobacco Company?	Y	N
Report of Lawsuit?	Y	N
Medicaid Payment for Cessation?	Y	N
Article Size		in.

Article Type

1. Hard News
2. Editorial
3. Letter
4. Column
5. Cartoon
6. Information
7. Q&A
8. Other

II. Content Variables

Article Theme

1. Health Effects of Smoking	7. Product Issues & Regulation
2. ETS & Related Bans	8. Addiction and Quitting
3. Tobacco Consumption	9. Youth Access and PPU Issues
4. Advertising & Promotion	10. Education, Prevention & Cessation
5. Economic Issues	11. Unintended Damage
6. Farming Issues	12. Tobacco Industry
13. Other	

Article Topic

1. Prevalence and Consumption	18. Other Nicotine Delivery Devices
2. Addiction and Quitting	19. Societal Costs of Smoking
3. Harm Reduction	20. Personal Costs of Smoking
4. Cessation Programs/Products	21. Effects of Regulation/Litigation
5. Youth Smoking Behavior	22. Tobacco Taxes and Prices
6. Youth PPU	23. Unintended Damaging Effects
7. Youth Access	24. Non POP Marketing & Promotion
8. Youth Education/Prevention	25. POP Marketing & Promotion
9. Negative Health Effects	26. Tobacco Industry Lobbying
10. Non-Negative Health Effects	27. Tobacco Company Performance
11. ETS Health and Comfort	28. Industry Non-Tobacco Activities
12. Indoor Smoking and Bans	29. Tobacco Farming & Processing
13. Outdoor Smoking and Bans	30. Tobacco Trade & Export
14. Domestic Smoking and Bans	31. Funding Anti-Tobacco Initiatives
15. General Smoking Bans	32. Anti-Tobacco Programs & Events
16. Cigarette Content and Regulation	33. Other Policy & Regulation
17. Other Tobacco Products	34. Other

III. Slant Variables

Event Slant

1. Positive for Tobacco Control
2. Negative for Tobacco Control
3. Mixed
4. Neutral

Opinion Slant

1. Positive for Tobacco Control
2. Negative for Tobacco Control
3. Mixed
4. Neutral

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