FROM MEDIA ADVOCACY TO HEALTH BEHAVIORS:
EXAMINING THE RELATIONSHIPS BETWEEN MASS MEDIA MESSAGES, PUBLIC
OPINION, AND POINT-OF-SALE TOBACCO CONTROL POLICY IMPLEMENTATION IN
THE UNITED STATES

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ABSTRACT

Allison Elizabeth Myers: From Media Advocacy To Health Behaviors:
Examining The Relationships Between Mass Media Messages, Public Opinion, And Point-
Of-Sale Tobacco Control Policy Implementation In The United States
(Under the direction of Leslie A. Lytle)

Policy interventions affecting the point of sale (POS) are an emerging focus within comprehensive tobacco control programming. Whereas mass media may play an important role in advancing policy implementation, these relationships have rarely been studied. The current studies examine the relationships between POS news media content, policy progression, and public support.

In Manuscript One, we analyzed 917 POS-news articles, published between 01/01/2007 and 12/31/2014, and retrieved from a sample of 273 newspapers. The most common frame present was regulation (71.3%). Government officials (52.3%) and tobacco retailers (39.6%) were the most frequent sources. Articles presenting a health frame, a greater number of pro-tobacco control sources, and statistical evidence were significantly more likely to also have a pro-tobacco control slant.

In Manuscript Two, we examined the extent to which newspaper content characteristics were associated with policy progression from 2012 to 2014. We found positive, significant bivariate relationships between the news content variables overall POS-related volume, and number of articles with any public health source, with both a local quote and local angle, and with a pro-tobacco control slant, and the dependent variable, Time 2

POS Index. Significant relationships between news content and policy progression did not hold in a multivariate regression model.

In Manuscript Three, we investigated the relationship between news exposure and public support. We randomized an Internet-based convenience sample of 702 voting US adults to one of eight mock POS-related news articles, written to vary on (1) frame and (2) localization, and then measured their level of support for 22 POS policies. The mean POS support score was 12.88 (SD 6.67; Range 0 to 22). No significant main effects of frame or localization were apparent. Rather, we found significant differences in POS support by gender, age, tobacco use status, political affiliation and trust in government.

Findings suggest that news content characteristics can shape article slant towards support for tobacco control objectives, and that newspaper coverage can be a marker of POS policy progression. Future work should continue to investigate the role of media in the policy change process.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ASPiRE   Advancing Science and Policy in the Retail Environment

CIA   Clean indoor air, refers to state and local policies

CDC   Centers for Disease Control and Prevention

EBI   Evidence-based intervention

FDA   Food and Drug Administration

FSPTCA   Family Smoking Prevention and Tobacco Control Act

MLSA   Minimum Legal Sales Age, for tobacco products

NCI   National Cancer Institute

NIH   National Institutes of Health

POS   Point-of-sale (adj.) or point of sale (n.), refers to the retail environment/store

SCTC   State and Community Tobacco Control initiative

US   United States of America

CHAPTER 1 INTRODUCTION, BACKGROUND AND SIGNIFICANCE

1.1 Introduction

Despite 50 years of significant progress, tobacco remains the leading cause of preventable death and disability in the United States.[1] Every year, 480,000 people lose their lives to tobacco-related diseases. Federal, state, local and organizational-level policies have demonstrated effectiveness in reducing disease risk. Tobacco excise taxes, clean indoor air laws, investments in cessation programs, and hard-hitting media campaigns have contributed to reductions in tobacco initiation and consumption and increased quit attempts over time.[2] Today, the implementation of state- and local-level policies to regulate the sales and marketing of tobacco in the retail environment represents an emerging category of effort within comprehensive tobacco control programming. This dissertation research brings together theories of the policy change process, the agenda setting function of the mass media, and media advocacy to identify and recommend a promising communication blueprint to further the implementation of policy-level tobacco prevention and control interventions affecting the retail environment, also called the point of sale (POS).

Policy interventions affecting the environmental level have stronger and more sustainable health impact and higher population reach as compared to individual behavior change interventions.[3] Because of this, public health practitioners in the US are encouraged by funders and stakeholders to use media advocacy and community education techniques to build support for policy change efforts.[2, 4] The growth of POS tobacco control policy efforts across the US[5] and the established newsworthiness of tobacco[6] create a prime

opportunity to study the relationships between the media agenda, public agenda and policy agenda, according to the agenda setting function of the media and within the context of POS tobacco control policy change.

This dissertation research begins, within the literature review, with a scoping review of published analyses of tobacco-related news media content. Then, three studies extend the current content analysis literature to describe POS-related tobacco news content and empirically examine the relationships between media content, POS policy implementation, and public opinion towards POS policies.

1.2 Study One Background

Tobacco-related media content remains understudied in that most content analyses are descriptive or cross-sectional studies[7] without identified a priori hypotheses or expected findings[8] or bivariate or advanced statistics to test predicted relationships between aspects of content.[9, 10] Further, despite the theoretical underpinning that news media content is a causal factor of both public opinion and the policy agenda, no studies have reviewed a broad set of content characteristics involved in the policy development process. Finally, no research to date has focused on news media content (newspaper or other channel) related specifically to tobacco prevention and control activities at POS.

Study One describes mass media coverage of POS tobacco control efforts in a sample of the highest circulating US national and state-level newspapers including: the volume of articles published, presence of strategic communication elements in each article, and overall slant for or against tobacco control efforts. This is the first study of mass media coverage of POS or retail-focused tobacco control efforts, thereby filling a gap in the tobacco control literature. Further, it is one of few studies to set hypotheses in advance to predict the relationships between strategic article content (e.g. frame, source presence and type, evidence

structure, and degree of localization), and overall slant of content that can either support or oppose tobacco control efforts. Descriptive findings from this study represent a first step in media advocacy and the policy change processes: identifying the media agenda presented nationally and at the state-level in each of 50 US states. The data to be reviewed go back to a time period (January 1, 2007) that is both accessible via electronic database search and prior to any significant emergence of POS tobacco control as a category of effort. Findings can also offer important lessons for public health advocates as they partner with the media and work independently to generate media coverage that offers support for tobacco control policies. Practitioners working on POS policy change report a lack of communication tools as a barrier to further progress;[5] this study will assist with communication tool development.

1.3 Study Two Background

The emerging implementation of POS tobacco control policies at the state-level[5] creates a unique opportunity to study the relationships between the volume and characteristics of tobacco-related news content (the media agenda) and POS policy implementation (the policy agenda). In media effects theory, the agenda setting process suggests that mass media content, reflective of the media agenda, plays an important role in generating political and social change (see Figures 2.2 and 2.3).[4, 7, 11, 12] Media advocacy is a tactic used by many state- and coalition-led tobacco control programs to influence the volume and characteristics of media content, thereby setting the media agenda, generating public awareness and support for an issue, and placing pressure on powerful decision makers to implement policy changes.[7, 13-15]

Descriptive analyses of newspaper content (as in Study One) are a first step in studying the agenda-setting process. We know newspapers play a demonstrable role in policy adoption,[16] perhaps greater than the role of scientific research.[17] However, our science

in tobacco control and prevention is limited: a significant gap remains between scientific research, political discourse and policy implementation that can impact public health. In practice, local and state level practitioners work to generate media coverage that is favorable for public health – an activity that is recommended by national public health leaders[2] and often mandated by funding agreements. Yet, very little empirical support exists for the impact of that earned media coverage on policy outcomes.[14, 18, 19] The purpose of Study Two is to examine the relationship between media content and policy implementation over a two-year period. The findings have important implications for public health practice and the use of media advocacy as a tactic for building community support, and will begin to tease out the unique characteristics of media content that are most associated with policy implementation.

1.4 Study Three Background

The Agenda Setting Framework establishes a reciprocal, triadic relationship between the media agenda, public agenda and policy agenda,[12, 20] or as operationalized in this trio of dissertation research studies: tobacco-related newspaper content, public opinion, and level of policy implementation. For Study Three, we investigate the public agenda and ask: Can we shape and predict public opinion towards POS policies by manipulating some of the same message variables we have been measuring in earlier work?

Media advocacy through press releases, conferences, local events and other earned media activities is a recommended health communication strategy within the CDC's 2014 Best Practices for Comprehensive Tobacco Control Programs, and contributes to all four national tobacco program goals, including preventing tobacco use initiation, promoting quitting, eliminating secondhand smoke exposure, and eliminating tobacco-related disparities among population subgroups.[2] Often the goal of media advocacy is to shape media content

to either change or reinforce a public agenda (or, aggregate public opinion) that is supportive for tobacco control policy change solutions.[4, 14] A challenge, however, is that practitioners who are working on POS policy change issues do not have a successful communication blueprint to work from; rather, communication tools are an acknowledged need in the field.[5, 21]

Towards the long-term goal of point of sale tobacco control (POS) policy implementation, the purpose of Study 3 is to manipulate and identify the message factors within news articles that are most associated with POS support among members of the general public. Tobacco control framing studies are traditionally retrospective content analyses of newspaper coverage to document the kinds of frames that were used over time by tobacco control advocates versus the tobacco industry.[22, 23] No tobacco control studies have examined the use of frames to prospectively communicate with audiences and Research to test messages that are intended to produce policy change are also extremely limited;[24] this study begins to fill that gap.

Findings from this study may indicate the news message factors (e.g. frame and localization) or levels (e.g. health or economic frame, local or not local) that are associated with the highest levels of POS policy support among the general public. Findings may also indicate the message factors and levels that are associated with *lower* levels of POS policy support, which also adds value. These novel data take a forward-looking, proactive perspective to inform the development of promising communication tools for practitioners. What is learned can be used by national, state and local tobacco control advocates as they build public support for POS policy solutions to the tobacco epidemic.

1.5 Significance

These studies build on past research and contribute to tobacco control research and practice in important ways. Study One offers the first analysis of newspaper coverage of tobacco prevention and control efforts affecting the retail environment. Rather than measuring only a few variables, it incorporates for the first time a broad set of content measures (e.g. dominant frames, sources present and types, evidence structures presented, degree of localization, overall slant) that are theorized and empirically demonstrated to persuade public opinion and health behavior according to Agenda-Setting and communication theories. Study One is also one of very few content analyses to set a priori hypotheses, drawn from previous tobacco control research, to predict relationships between content elements. Study Two is the first study to statistically examine the association between newspaper content and POS tobacco policy implementation at the state level over time, while controlling for other relevant factors. Finally, Study Three is a unique communication experiment designed to evaluate the relationship between the characteristics of POS-tobacco-related news messages and public opinion towards POS policies. All of the studies here extend traditionally descriptive content analyses to include key variables in the Agenda Setting/policy change pathway: the development of public opinions and public policies, which are precursors to health behaviors.

The proficient use of strategic communication in the mass media is an important topic for tobacco control practitioners who are working towards health-promoting policy change in their state or locality. Ultimately, this research intends to offer a promising blueprint for media advocacy and communication initiatives to build support for the implementation of POS policies that have the potential to lower tobacco initiation rates, increase the success of quit attempts, and reduce overall tobacco consumption -- three outcomes that contribute to ending the epidemic related to tobacco use.

CHAPTER 2 LITERATURE REVIEW

2.1 The Emergence of Point-of-Sale Policy Solutions for Tobacco Control and Prevention

Tobacco control advocates from diverse disciplines have worked together to reduce smoking rates in the United States (US) from 43% in 1964 to 18% in 2014,[1] preventing 8 million premature deaths in the process.[25] Still, tobacco use remains the leading cause of preventable death and disability in the US, accounting annually for at least 480,000 premature deaths from cancer and other cardiovascular, metabolic and pulmonary diseases.[1] Tobacco control advocates must continue to implement effective and promising interventions that further reduce tobacco consumption in order to mitigate this overwhelming disease burden.

Significant declines in tobacco use rates have been secured in recent decades in part because tobacco control practitioners and prevention scientists have established a set of effective policy-, systems- and environmental-level (PSE) interventions. These evidence-based intervention strategies (EBIs) include raising the price of tobacco prices through an excise tax, passing broad and strong clean indoor air (CIA) laws (also called smoke free laws), offering cessation services via telephone quit lines, airing hard-hitting mass media campaigns, and enforcing youth (minors') access compliance regulations with community engagement.[26] Local and state policies that affect the sales and marketing of tobacco products in the retail environment, also called the point of sale (POS), are considered a next step in tobacco control: the Institute of Medicine has recommended reducing the density of

tobacco retailers (the number of retailers per 1,000 population) as a mechanism to curb tobacco consumption[26] and CDC best practice recommendations guide states and localities to implement policy and environmental interventions to encourage tobacco-free norms, promote tobacco use cessation, and prevent tobacco use initiation.[2]. POS policies can aid in each of these goals.[27]

In recent years, states and localities have focused increasingly on POS tobacco control. This focused has emerged for several reasons. First, as states achieve high tobacco excise taxes and strong clean indoor air laws, they become 'ready' for amplifying tobacco control work in the retail setting [5]: the next step in ratcheting social norms away from tobacco use. The Point-of-Sale Report to the Nation: The Tobacco Retail and Policy Landscape identified 20 US states as "POS ready", given their high 'Smokefree Score' (>40) as measured by the American Lung Association, and high Cigarette Tax (>~$1.35 per package).[5] Alternatively, in states where tax or smoke free efforts have stalled, effort towards POS policy change is a mechanism for re-engaging coalitions and bringing public and stakeholder attention back to the unfinished problem of tobacco use, and to the retail environment, where tobacco enters our communities.

Second, the national, overarching policy and regulatory context has changed to allow for and draw attention to state- and local-level POS policies. On June 22, 2009, President Barack Obama signed into law the Family Smoking Prevention and Tobacco Control Act (Tobacco Control Act), which gave the US Food and Drug Administration (FDA) the power to regulate the sales and marketing of some tobacco products (cigarettes, smokeless tobacco, and roll-your-own tobacco).[28] Provisions included in the Tobacco Control Act changed the landscape of the retail environment. As a result of the new law, tobacco retailers *must not* (1)

sell flavored cigarettes (excluding menthol), (2) sell cigarettes with descriptors indicating reduced harm (e.g. "light" or "mild"), (3) sell loose cigarettes, (4) sell loose pouches of smokeless tobacco, (5) sell branded non-tobacco products, (6) offer non-tobacco gifts with purchase, (7) offer gift catalogs in the store, or (8) promote tobacco brand-name sponsored events. Additional Tobacco Control Act provisions require tobacco retailers to (1) sell cigarettes or smokeless tobacco only in a "clerk-assisted" transaction, rather than self-service, and (2) remove tobacco vending machines except in adult-only facilities. Importantly, the Tobacco Control Act lifted preemption, thereby legally permitting states and local governments to pass policies affecting the time, place and manner (but not content) of tobacco advertising. Even though several provisions of the Tobacco Control Act have not yet been implemented (e.g. graphic health warnings on cigarette packages), the law has fostered much greater attention to the retail environment as a setting for tobacco prevention and control research and practice.

A third driver of tobacco control advocates' focus on the retail environment is the growing recognition of the tobacco industry's focus on the retail setting. Broad successes in tobacco control in the policy areas listed above, and in outdoor, television, and some magazine advertising bans, have 'squeezed' the tobacco industry into the retail environment. In 2011, tobacco companies in the United States spent $7.4 Billion on retail cigarette advertising, marketing and promotions, and an additional $280 million on smokeless tobacco advertising, marketing and promotions;[29] this amounts to approximately $1 million per hour and is nearly 90% of the industry's total advertising, marketing and promotional budget. Given that the industry has transitioned their effort to the retail setting, public health practitioners are appropriately following suit.

Fourth, a fast emerging and growing empirical evidence base now demonstrates a causal relationship between exposure to tobacco promotion (e.g. sales, displays, advertisements) in the retail environment and cigarette smoking, and indicators for smoking susceptibility such as pro-smoking attitudes.[7, 30-32] Exposure to retail tobacco promotions prompts smoking initiation among youth,[31, 33] and cues craving[34] and impulse purchase[35] which can discourage quit attempts. The location and density (number of retailers per 1,000 population) of retailers also contribute to smoking behaviors. The presence of tobacco retailers near schools puts children and teenagers at particular risk: in school areas with high outlet density, smoking experimentation[36] and prevalence[37] are higher, and students are more likely to report buying their own cigarettes rather than getting them from friends or other sources.[38] Tobacco retailer density is highest in US communities with lower median household income[39-41] or a higher percentage of African American[39, 40] or Latino[39] families, resulting in greater access to tobacco and exposure to a greater number of tobacco product displays and advertisements. With regard to quitting, smokers who live within walking distance (250 meters) of tobacco retailers are less likely to remain abstinent from tobacco over a six-month period.[42] Taken together, we have strong scientific evidence to demonstrate the toxic effect of tobacco retailing on neighborhood heath status, and the disproportionate burden placed on poorer and minority populations. Frequent exposure to tobacco product displays and marketing, high numbers of tobacco retailers in close proximity to schools, and high retailer density each contribute to problem health behaviors, and yet can be readily mitigated through POS policy solutions.

State-and local-level policy interventions that regulate tobacco sales and marketing in the retail environment are promising place-based strategies to lessen the burden of tobacco

retailing on public health. A broad menu of POS policy solutions is available to tobacco control practitioners. These policy solutions can be categorized into six overarching domains, or activity areas: (1) regulating the density of tobacco retail outlets through restricting the number, type or location of retailers, (2) restricting the time, place or manner of POS advertising, (3) restricting the placement of tobacco products in the store, (4) placing health warnings, prevention or cessation messages in retail outlets, (5) implementing non-tax approaches that raise the price of tobacco products, and (6) pursuing 'other' POS policies (e.g. flavor bans, package restrictions).[27] Table 2.1, below, lists 25 unique state-level POS policy solutions, categorized by domain. Researchers have been tracking the state-level implementation of each of the POS policies listed in Table 2.1 as part of Advancing Science and Policy in the Retail Environment (ASPiRE), funded by the National Cancer Institute's (NCI) State and Community Tobacco Control Initiative (grant number U01-CA154281). ASPiRE is a consortium of researchers from the Center for Public Health Systems Science at Washington University in St. Louis, the Stanford Prevention Research Center, and the University of North Carolina Gillings School of Global Public Health. In 2012 and 2014, telephone interviews were conducted with tobacco control program directors to identify current milestones for each of the 25 policy solutions (e.g. no formal activities, planning/advocating, policy proposed, policy enacted, or policy implemented) and to compute a POS Implementation Index for each state. Scores range from 0 to 100, with 100 meaning that all 25 policy solutions (in Table 2.1) have been implemented. The implementation of POS policy changes have the potential to reduce access and exposure to tobacco products, and therefore reduce tobacco use initiation among non-smokers and impulse purchases among smokers.[27] Additional expected impacts of POS policies are

reductions in tobacco-related disparities, for example, the disproportionate burden of high

retailer density and lower cigarette prices in low-income or high-minority communities.[40]

Finally, POS policy solutions can contribute to lessening the influence of the tobacco

industry in the retail outlet, which can in turn translate to improved health behaviors and

public health.

Table 2.1 Point-of-Sale Policy Domains and Solutions.

Domain	POS Policy Solutions
Tobacco retailer density	1. ● Limiting or capping the total number of licenses in a specific area 2. ● Establishing or increasing licensing fees 3. ● Prohibiting tobacco sales in locations youth frequent (*e.g.*, near schools or parks) 4. ● Restricting retailers operating within a certain distance of other tobacco sellers 5. ● Restricting retailers in certain zones (*e.g.*, banning retailers in residential zones) 6. ● Prohibiting the sale of tobacco at certain establishment types (*e.g.*, pharmacies restaurants) 7. ● Limiting number of hours or days in which tobacco can be sold
Advertising	8. ● Limiting the *times* during which advertising is permitted (*e.g.*, after school hours on weekdays) 9. ● Limiting *placement* of advertisements at certain store locations (*e.g.*, within 1000 ft. of schools) 10. ● Limiting the *placement* of advertisements within the store (*e.g.*, near cash register) 11. ● Limiting *placement* of outdoor store advertisements 12. ● Limiting *manner* of retail advertising by banning certain types of tobacco advertisements (*e.g.*, outdoor sandwich board style ads) 13. ● Banning all types of ads regardless of content (*e.g.*, sign codes that restrict ads to 15% of window space)
Product Placement	14. ● Banning product displays/requiring retailers to store tobacco products out of view (*e.g.*, under counter or behind opaque shelving) 15. ● Banning self-service displays for other (non-cigarette) tobacco products or all tobacco products 16. ● Restricting the number of products that can be displayed (*e.g.*, only allow retailers to display one sample of each tobacco product for sale) or the amount to square footage dedicated to tobacco products 17. ● Limiting *times* during which products are visible (*e.g.*, after school hours on weekdays)
Health Warnings	18. ● Requiring graphic warnings at the point of sale
Non-tax approaches	19. ● Establishing cigarette minimum price laws 20. ● Banning price discounting/multi-pack options 21. ● Banning use of coupons 22. ● Establishing mitigation feels (*e.g.*, a fee to clean up cigarette litter) 23. ● Requiring disclosure or Sunshine Law for manufacturer incentives given to retailers
Other POS Policies	24. ● Banning flavored other tobacco products 25. ● Requiring minimum pack size for other tobacco products

2.2 The Policy Change Process: Kingdon's Multiple Streams Framework and Media Advocacy

The mission of public health is to create the contextual *conditions* where people can be healthy –to shape environments (e.g. retail stores, neighborhoods) that promote, rather than detract from health.[13] State- or local-level health policy implementation (e.g. POS tobacco control policy) is a complex process, with multiple stakeholders acting among multiple interactive systems. POS policy interventions require engaged support from public health practitioners, health advocates, policy makers, and the general public, and must mitigate opposition from trade groups such as tobacco retailers or the tobacco industry. Political Scientist John W. Kingdon describes the policy change process as involving three distinct 'streams' that can culminate in a 'window of opportunity' wherein new policies are adopted and implemented.[43] An adapted model of the Multiple Streams Framework is presented in Figure 2.1.
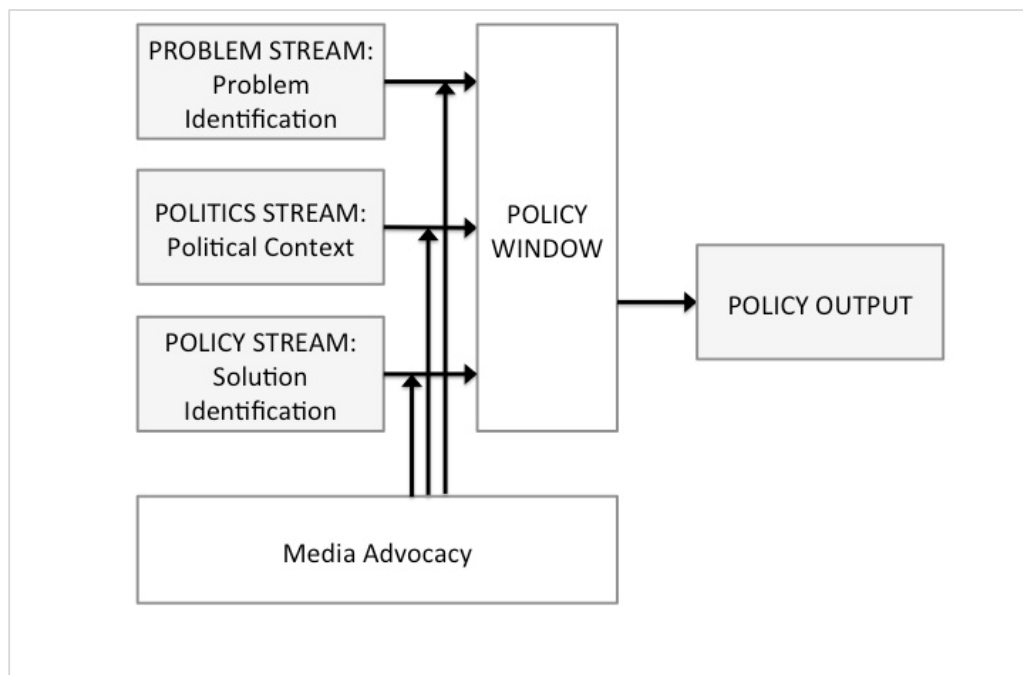
Figure 2.1. Multiple Streams Framework to Explain the Policy Change Process.

This policy window is opened when "streams" converge: the problem stream, the politics stream, and the policy stream. The problem stream represents the public awareness and identification of a problem that must be fixed. The politics stream has to do with the political context, opinion or mood: a favorable context among policy makers and pressure groups increases the likelihood of change. The policy stream identifies a list of viable policy solutions and alternatives to the problem, based on research and evidence. In short, when a clear problem, solution, and political support come together at the same time, public health policy is prompted to change.

In public health policy change initiatives, health advocates engage in policy entrepreneurship activities –for example, media advocacy-- aimed towards coupling the streams and creating a policy window. Media advocacy is the "strategic use of mass media to apply pressure to advance healthy public policy" (p. 298).[13] Public health practitioners use media advocacy strategies to stimulate coverage of issues, identify and define problems, and offer feasible policy solutions. With media advocacy, community members and other concerned stakeholders generate media attention about a topic, which in turn can set the media agenda, alter public opinion, shift a policy agenda, and result in an empowered population with better health outcomes.[13] The most effective media advocates amplify authentic voices of concerned citizens to ensure they are 'heard' by the public and by policymakers who have the power to make change. They also package issues with meaningful frames, elevating social problem into issues worthy of media, public and policymaker attention.[12] In sum, media advocacy is an integral part of the policy change process.

2.3 The Agenda-Setting Function of the Mass Media

Agenda Setting is a theory of media effects developed by mass communication scholars to explain the process of political and social change as influenced by mass media content. Rogers and Dearing explain agenda setting simply as the process of influence in American democracy; the study of agenda setting is the study of social and political change or stability.[12] Agenda setting tells us that the amount and nature of news media content – generated frequently by media advocacy activities - is a contributor to public attitudes and opinions[44] which also influence the public policy process. More broadly, a media effects framework studies the attitudinal, behavioral and knowledge outcomes of mass media themes, symbols and images.[45] As shown in Figure 2.2, the agenda setting process has three main components: the media agenda, the public agenda and the policy agenda.
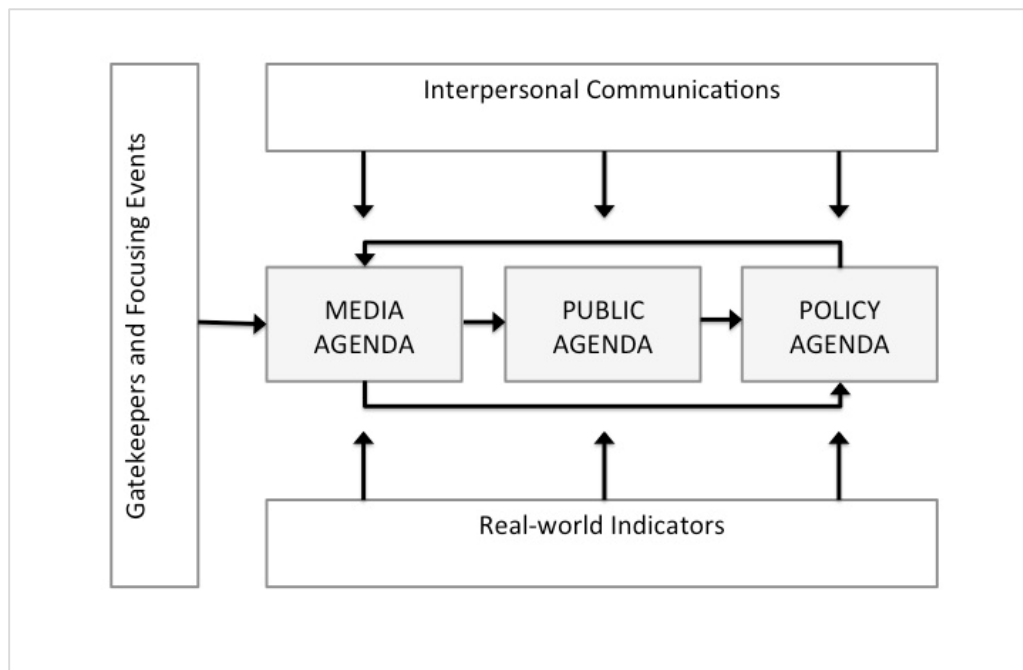
Figure 2.2 The Agenda Setting Process, Adapted from Dearing and Rogers.

The media selects, defines, emphasizes and covers issues (the media agenda), which then influence public priorities, beliefs and opinions (the public agenda) and, in turn, policy considerations, decision-making, implementation and adoption (the policy agenda). The process is both linear and reciprocal: the media agenda directly influences the public agenda and the policy agenda, the public agenda mediates the relationship between the media agenda and the policy agenda, and the policy agenda influences the media agenda. Within the agenda-setting system, people are not passive consumers of information but rather active seekers and users of information; a relationship also exists between media audiences – the public, and their agenda - and the media themselves (arrows not shown in model). A seminal agenda-setting study was conducted in Chapel Hill, NC by McCombs and Shaw during the 1968 Presidential election: findings from 100 personal interviews and an analysis of local news media content indicated a strong positive (0.967) correlation between issues covered in the media and the issues the voters said were 'important';[46] hundreds of agenda-setting studies have been published since.[12]

Additional factors play a role in the agenda setting process, as shown in Figure 2.3: gatekeepers and focusing events, interpersonal communications, and real-world indicators. Gatekeepers of the media agenda include media leadership, sponsors and editorial staff, each with unique values, routines and cultures that allow or disallow and shape news content.[44] Focusing events also influence the agenda: these are rare events that reveal harm or potential harm to society and may be especially problematic for specific population groups or geographic areas.[47] Further, focusing events prompt changes in the issues present on the media, public and policy agendas, and mobilize interest groups to either expand or contain the issue.[47] Next, interpersonal communication (e.g. education of journalists by health

advocates) can dictate the salience, or relative importance, of issues and events throughout the agenda-setting process. Among the general population, the process of engaging in interpersonal communication about a topic on the media agenda can make the topic more personally relevant or place it firmly on the public agenda; also, interpersonal communication among elite people can facilitate the inclusion of topics into the public and policy agendas.[48, 49] Finally, real-world indicators play a role in the development of media, public and policy agendas. Real-world indicators are objective measures of the severity or risk of an agenda issue, event or social problem.[12] For example, in tobacco control, results of population-based studies indicating tobacco consumption rates among children or billions of dollars spent on tobacco-related health care costs annually are a real-world indicators of the problem.

Public health advocates must engage in the agenda setting system, because it has profound potential to impact health policies and behaviors. The mass media play a powerful role in establishing issues or problems as important in the eyes of the public.[45] People and institutions, either for, against, or neutral to health promoting initiatives, shape the media, public and policy agendas by producing focusing events and real-world indicators that identify and define problems, and through prompting conversations and experiences (e.g., agenda-setting events) that increase the salience of issues. In applied practice, public health workers use media advocacy to garner media attention, partner with the media to serve as news sources, work with concerned citizen coalitions to define issues and solutions, and employ persuasive communication strategies such as framing to package issues in meaningful ways.[45] Of course, other community groups, businesses and institutions also compete for time and attention within the media agenda. The problems that are identified in

the media agenda are constructed by society and reflect this competition between varying stakeholders.[13, 46] This mass media push-pull, therefore has the power to either advance or detract from the sociopolitical changes needed to improve health.

A series of factors play a role in whether issues that surface on the media agenda are translated to the public and policy agendas. First, stories with higher prominence in the paper are perceived as more important;[46] prominence has to do with the location of the story within the paper, story length, and whether or not the story includes an image or graphic.[50] Second, content framing, meaning the way an issue is described or packaged as it is being communicated[51] provides meaning around an issue and has implications for how the issue is interpreted,[52, 53] the extent to which an issue is supported by the public and decision makers,[52] and the solutions that are implied.[22] Often, public health advocates and the tobacco industry vie for shaping a discussion in hopes that audiences remember the issue, identify with it, and share the view of one side of the argument or the other. Third, an important tool for promoting policy changes is the presence of public health advocates in the media as sources who shape the discussion.[7, 13] A source is a person or organization who gives information to news reporters, who is often explicitly identified, either by quote or paraphrase.[54] Sources of interest in tobacco policy debates include: educational institution, health care provider, public health advocacy or nonprofit group, community member/citizen, government/health department official, tobacco retailer, tobacco industry. Fourth, stories with a higher amount of information within the story encourage greater learning on the part of the public.[46] The use of research or evidence in either a narrative or data-driven format can support the diffusion of health policies[55, 56] by helping to characterize the problem and solutions.[57] For example, the presentation of relevant research evidence can properly

identify a problem, aid in the development of solutions, and improve knowledge and support from policymakers.[50, 58] Fifth, the extent to which articles are developed with local quotes and local story angles also shapes support from the public and policy makers.[50, 58] Frames, the presence of sources, the use of narrative and data-driven research evidence, and the degree of localization can also impact the overall slant of an article, either positive or negative for tobacco control efforts.[59, 60] In sum, many characteristics of news coverage (the media agenda) have the potential to contribute to the ultimate success or failure of health policy interventions. Persuasive, impactful media coverage impacts public opinions and policy development: this is the agenda-setting function of the mass media. For public health researchers, then, measuring the media agenda via content analysis is a first step in studying an agenda setting process to promote health.[54]

2.4 Measuring the Media Agenda: Content Analysis of Newspaper Coverage of Tobacco Control

The three studies that comprise this dissertation research are grounded in and extend current empirical research reporting on and analyzing tobacco-related newspaper content. Content analysis is the gold-standard for measuring the media agenda.[54] The content of the news media (or the media agenda) is a prominent source of health information for the general public, including key stakeholders in the policy change process.[7] Beyond simply the amount or volume of coverage (measured as the number of articles about a topic), the latent and manifest meaning of the text plays a key role in development of both the public agenda, or public opinion, and behavior, which in turn impacts the policy agenda.[7, 12, 43] Content analysis allows researchers to measure and analyze the extent to which issues and topics are present on the media agenda, as well as the meaning of the content for public opinion and policy development (e.g. frames and sources present, evidence structure, degree of

localization, slant).[12] The presence of news media content that is positive towards tobacco control efforts is a powerful force in setting the community agenda to promote public health. Given that tobacco control advocates can effectively partner with the media to shape the media agenda,[14] monitoring the current state of media content is a first step in strategic media advocacy planning.[8]

2.5 Analyses of Tobacco-Related Newspaper Content

This section reviews content analyses of newspaper coverage identified through a search of PubMed and EBSCOHost databases using the search terms 'tobacco AND newspaper AND "content analysis."' Articles were included for this review if they reported on a structured qualitative or quantitative content analysis that identified the presence, absence or characteristics of discrete elements of news content in a mass media newspaper, or if they report content findings and examined the relationships between newspaper content and other contextual factors such as youth smoking attitudes and behavior or public opinion for a policy. Articles were excluded if they measured content of advertisements, discussed mass media interventions for tobacco cessation or prevention, or were not specifically about tobacco control coverage. The reference sections of each included article were also scanned to identify additional content analysis studies.

A total of 39 content analyses of newspaper coverage of tobacco and smoking issues were identified for this review; the studies are listed and described in Appendix A. For each study included the following characteristics reflecting internal and external validity were recorded: sample location and timeframe; study purpose, stated research questions or hypotheses; study design; sampling frame and size; measured variables; tests for inter-coder reliability; and notes on hypothesis testing or data analysis. The following pages summarize all 39 studies as a starting point and provide the rationale for Studies One, Two and Three.

2.5.1 Newspaper and Time Sampling

Analyses of tobacco related newspaper content have been conducted largely in the United States (69%, n=27) and Australia (18%, n=7), with one paper comparing coverage in both countries (3%). Of studies of US content, 16 used a national sampling frame and 11 examined local or state level coverage. One study of tobacco related content has been published each from Ireland, Canada, the Netherlands and China. The time periods analyzed range from several months to 16 years (median, 2 years). The number of newspapers included in the sampling frame ranged from 1 to 386 (median 12; average 68), though information on the number of newspapers included was not given in 23% of studies (n=9). The number of articles (e.g. letters to the editor or hard news articles) included in each study ranged from 90 to 95,911 (median 709; average 4,095).

2.5.2 Study Aims and Designs

Significant variation exists in the aims and designs of content analysis studies. Study designs (e.g. qualitative, descriptive, cross-sectional, or longitudinal) were categorized based on the stated aims of the paper and the statistical analyses described in the methodology. Of the studies included in this review 8% were qualitative (n=3) and identified themes in coverage using ethnographic content analysis methods. Two of these studies examined letters to the editor to capture the authors' reasons for writing and use of persuasive communication in Australia[61] and the US,[62] respectively. The third study analyzed arguments for allocating tobacco Master Settlement Agreement (MSA) funds to non-tobacco related issues.[63]

An additional 36% of studies were descriptive (n=14); descriptive studies involved no bivariate statistical tests and listed no a priori hypotheses. A primary purpose of descriptive studies is to capture the *volume*, or amount, of news coverage related to tobacco, so as to

determine if the topic is generally newsworthy or, in other words, on the media agenda. Durrant, et al., published a descriptive study of tobacco-related coverage across Australia in 2003[8] and Nelson, et al., developed a national tracking system for US newspaper coverage and described the volume of tobacco-related coverage across the US in a 2007 publication.[6] A subset of seven studies described newspaper coverage of smoke-free policies in workplaces in Ireland[64] and Missouri,[57] bars in California,[65] casinos in New Jersey,[66] parks and beaches in Vancouver,[67] pubs in Australia,[68] and a comprehensive statewide law in Michigan;[69] an eighth study described coverage for and against 100% tobacco-free schools policies in North Carolina.[70] A subset of three descriptive studies examined the use of framing strategies in tobacco-related content generally in the US,[22, 23], and within letters to the editor in the US.[71] Finally, one study described coverage of retailer abandonment of tobacco sales.[72] These descriptive studies have identified tobacco as part of the media agenda: in newspapers, articles on tobacco issues have appeared as frequently as daily[6] and demonstrate an orientation that is positive for tobacco control objectives.[8, 17, 73]

Next, 41% of studies were cross-sectional (n=16) defined within this review as having reported on at least one bivariate statistical test for relationships occurring *as if* at one time point (meaning, the dates of publication or timing of articles were not under study and content was analyzed as if time were not a factor), without regard to whether or not hypotheses were identified to guide the statistical tests. It is important to note that only two of the cross-sectional studies identified a priori hypotheses that guided their statistical analyses: Kennedy and Bero examined the relationship between portrayal of research on passive smoking and industry sponsorship within the newspaper,[74] and Helme, et al.,

examined the relationship between community population size, amount of tobacco grown and slant of media coverage towards tobacco control.[75] Nonetheless, in the absence of hypothesized relationships, many studies tested for significant relationships between characteristics of content, for example, between article type and slant;[73] article theme (topic) and slant;[17] health behavior topic (diet, physical activity or tobacco) and story type, mention of research or data, or use of calls to action;[50] tobacco-related topic, theme and sources mentioned;[76] presence of health advocacy groups as sources and article type, prominence and topic;[77] and health risk mention and main smokeless tobacco topic.[78] Also without hypothesized a priori relationships, some studies examined differences in content by publication characteristic or other contextual variable, for example: the difference in coverage of cigars between California-specific or general-US newspapers;[79] between-country differences in article frequency, type, theme, event/opinion slant;[10] between-Military branch comparison of tobacco coverage;[80] difference in article topics between the Bush versus Clinton US presidential administrations;[81] difference in tobacco topics, slant and use of fear appeals between party (Chinese government) and local newspapers;[82] and finally, the relationship between article slant and theme within close-in or farther-out time proximity to election day.[83] Finally, two studies examined the relationship between content and attitudinal or behavioral factors. Clegg Smith and colleagues linked newspaper coverage of tobacco and youth smoking attitudes and behavior in the US[84] and Nagelhout, et al., studied newspaper coverage of smoke-free bars and smoker support for the policy in the Netherlands.[85] Chi-square and z-tests for proportions were common statistical tests within cross-sectional content analyses.

Finally, 15% of studies were longitudinal (n=6), defined within this review as having reported on bivariate or multivariate statistics to examine change(s) over time. Three of the six longitudinal studies provided a priori hypotheses that guided their research: Stillman, et al., examined the interaction between the American Stop Smoking Intervention Study (ASSIST) and time on the outcome of the rate of print media coverage of tobacco issues;[14] Neiderdeppe and colleagues investigated the relationships between tobacco control media advocacy efforts, the extent of media coverage, the passage of local policies, and youth smoking rates in Florida;[19] and Thrasher, et al., assessed relationships between media content characteristics over both failed and successful tobacco tax policy changes in South Carolina.[18] In the absence of identified hypotheses, one study each in Australia[86] and the United States[87] examined general trends in tobacco coverage over time, and a third Australian study examined specific changes in how smokers were portrayed over time.[88] Bivariate logistic regression analyses are used most commonly to investigate change over time[19, 86-88] however, mixed linear regression models[14] and chi-square tests[18] were also employed.

2.5.3 Article Sampling Frame

In several decades of content analysis research, and across study designs, elements of a standard sampling methodology have been established. Frequently, researchers select a sampling frame of published newspapers, which may include articles authored by journalists employed or contracted by the newspaper, articles authored by a national wire service (e.g., Associated Press or Bloomberg News), or articles containing both types of content (e.g., authored by a local journalist with contributions by the Associated Press). Sampling frames often include a census of newspapers published in a given geographic area of interest (e.g. a state or locality). Alternatively, newspapers are included based on their known role in

nationwide agenda-setting (e.g., the New York Times) or based on circulation rates as indicated by Editor and Publisher,[17] which is a gold standard proxy for population reach.

After a sampling frame has been determined, newspaper articles are gathered for study via paid newspaper clipping services[8, 73] or, more recently, through Internet database search engines available through University Library Systems.[68] Search terms guide the extraction of tobacco-related news coverage. The simple set of key words 'tobacco', 'smoking', and/or 'cigarette' is common; additional words such as 'secondhand smoke',[75] 'smokeless'[89] or 'tax'[83] are added to the string to narrow the search based on study aims. Article inclusion and exclusion criteria are determined in advance, with inclusion decisions made based on article type, length and focus. Article types in newspapers include hard news, opinion pieces such as editorials (written by the newspaper Editor), columns (written by guest contributors or newspaper staff), letters to the editor (LTE; written by members of the general public and published at the discretion of newspaper staff), and photos or cartoons; included article types are based on the study purpose. Hard news articles are screened for inclusion or exclusion based on length and focus. A common inclusion criterion is greater than or equal to 7 lines in length (one full paragraph) about tobacco.[8] Articles are typically excluded if they contain only a passing reference to tobacco or if fewer than 50% of paragraphs focus on tobacco.[81] Wire service content (e.g., Associated Press) is included or excluded based on the objectives of the study: a rationale for inclusion is to gauge nature of content that is *available* for publication,[17] however it is often excluded because it may or many not actually be published in newspapers, or is published in near-duplicate in many newspapers.[17]

Given that coding the nature of content is an inherently subjective process, most studies are conducted with trained coders who follow a deductive codebook that is developed before coding begins and refined using a sample of content. Tests for inter-rater reliability (IRR) are conducted using a random sample of minimum 10%[8, 9] to 100% sample[74] of newspaper articles. Cohen's Kappa,[8] Scott's Pi[9] and Krippendorff's Alpha,[81] are typical IRR measures.

2.5.4 Measured Characteristics of Content

Measured variables in the content coding share commonalities across studies [8], given the primary rationale of content analysis, which is to measure the media agenda. Standard article descriptors are newspaper name, publication location, article name, article type and date of publication. Article *prominence, theme, event slant and opinion slant* are also common coded variables. The prominence of an article, meaning where it is placed in the newspaper (e.g. on the newspaper front page, section front page or other, and whether it is accompanied by an image or cartoon) is commonly collected, particularly when a clipping service is used to gather content. Articles of the highest prominence are published with an accompanying image on the front page of a newspaper, however prominence often cannot be judged from articles retrieved from electronic databases due to database format. The theme variable represents 13 tobacco control topics (e.g. health effects of smoking; secondhand smoke and smoke-free policies; tobacco product consumption; tobacco advertising, promotion and sponsorship; economics and taxes; farming and trade; product and regulation; addiction; youth access and purchase, possession and use; education, prevention and cessation programs, products and campaigns; unintended smoking damage; tobacco industry/companies; other). Finally, event and opinion slant relate to whether or not the event featured in the article (event slant) or the opinion of the author of an opinion piece (opinion

slant) offers support for or detracts from tobacco control efforts (e.g. positive, negative, neutral, or mixed toward tobacco control). Prominence, theme and slant are often measured with a verbatim or adapted codebook developed in 2002 by Clegg Smith and colleagues as part of the ImpactTeen research project.[90]

The framing of tobacco issues within news media content is often studied. Many studies have examined the way tobacco issues are *framed* but no one set of pre-identified frames has become the standard. Appendix B lists every tobacco-related content analysis study that has coded for the article frame in news media content and summarizes each frame measure and response categories. Menashe and Siegel published the first descriptive study of US news media content in 1998,[22] characterizing the news framing strategies used by both tobacco control advocates and the tobacco industry in 179 front-page news articles from the Washington Post and the New York Times published from 1985 to 1996. Menashe and Siegel identified 11 unique tobacco interest (pro industry) frames and 10 unique tobacco control frames in content.[22] In a second seminal framing study, Lima and Siegel[23] reviewed the presence of nine unique tobacco control frames in 117 front-section hard news articles of the Washington Post in 1997 and 1998 during the time of the Master Settlement Agreement. In a study of smoke-free air policies, Magzamen, et al.,[65] identified nine overarching framing 'themes' (e.g. government role, choice, enforcement), each containing both a tobacco industry and health group frame; for example, within the economic theme are the tobacco industry frame "Hurts business; decreases revenue" and the health groups frame "No negative effects/good for business". Within an analysis of news content about exempting casinos from a smoke-free air law, Wackowski, et al., inductively identified frames either supporting/justifying (e.g. 'economic' or 'compromise') or opposed (e.g. 'unfair' or 'protect

29

health') to the casino exemption.[66] Clegg Smith and Wakefield identified 14 dominant

framing arguments in a qualitative study of newspaper editorials; some frames focused on

portrayals of smokers ('risky', 'socially unacceptable'), others focused on portrayals of

tobacco users ('underdog', 'dinosaur'), and still others captured the role of government,

business, industry or policy.[71] Finally, a subset of five content analyses have used

simplified coding schemes to characterize the frame as a 'theme' or 'primary approach' taken

to tell either a pro- or anti- tobacco story, for example, discussing tobacco issues from a

social, health, economic, or political/cultural/ideological approach.[57, 64, 67, 68, 83] In

media advocacy and in policy development, opposing forces compete to shape a discussion

on the media agenda. Frames have important meanings, and play a role in both the extent to

which an issue is supported[52] and in the solutions that are implied.[22] In order to

disseminate and implement POS policy solutions in the real world, best practice in content

analysis research should likely be to measure frames that are readily translatable to media

advocacy practice. The simpler measurement approach that characterizes economic, health,

or sociopolitical frames, rather than more than a dozen subjective or indiscrete categories, is

likely a promising strategy.

Additional important characteristics of news content are the presence or absence of

sources, the use of *information or evidence*, and the *degree of localization*. A host of studies

measure the presence or absence of sources in news content, which are important

determinants of the relevance of issues.[6, 50, 57, 64, 68, 69, 73-77, 79, 88]. A source is a

person or organization who gives information to news reporters and who is identified either

by quote or paraphrase.[54] Generally, source is measured as a present or absent

dichotomous variable; if sources are present, the number and type are categorized by industry

or role with regard to the issue (e.g. tobacco industry, health advocate, government). Despite its persuasive nature, the inclusion of information or evidence – whether data- or narrative-driven -- in news content is rarely studied. The earliest study of evidence in tobacco news content was conducted by Kennedy and Bero, who coded the frequency, source, type and conclusions of scientific studies present in news.[74] Caburnay, et al., coded for research, data or specific investigators in news content about physical activity, diet or tobacco use.[50] In a study of news content about Smoke Free Casinos in New Jersey, Wackowski, et al., coded for the types of information used to support arguments for or against the regulations, whether related to scientific studies, personal experiences or stories, or economic-related business information.[66] Lastly, Bach, et al., examined the use of evidence in articles about tobacco during Smoke-Free Workplace ballot campaigns in Missouri, coding either no use of evidence, data without a source, data with a source, presence of an anecdote or narrative, or use of both types of evidence.[57] Finally, only one study has examined the degree of localization present in news content: in the same study mentioned above, Caburnay, et al., coded for the use of local story angles and quotes to make content more relevant for readers.[50] In sum, whereas many aspects of the nature of news content are studied, none of the studies offer a comprehensive approach to measuring the media agenda for the purpose of planning for practitioner effort in the most persuasive way possible for public health.

2.6 Summary and Gaps in the Tobacco News Content Analysis Literature

This section has summarized the purpose, design, methods, measurement protocols and analyses of 39 published content analysis studies of tobacco control news coverage. Despite the volume of studies and the importance of news media content for tobacco control, it remains an understudied area in that most content analyses are descriptive or cross-sectional studies[7] without identified a priori hypotheses or expected findings,[8] and no

31

studies examine a theory-driven, comprehensive set of content characteristics. Relatively few studies employ bivariate or advanced statistics to test predicted relationships between variables, as noted by Long, et al. and Clegg Smith, et al.,[9, 10] and very few studies have investigated changes in the volume or nature of content over time.

The studies within this dissertation research begin to address important gaps that remain in the literature, leveraging the emergence of POS policy progress across the US. Study One offers the first content analysis of POS-related newspaper coverage where, for the first time, we measure and test hypothesized relationships between a broad set of content measures related to public opinion and health behavior according to Agenda-Setting and communication theories. Of prime importance to this dissertation research, is that a primary rationale for studying the media agenda (or news content) has always been because of its' theoretical relationship with public opinion and policy outcomes. Only one study has ever examined the relationship between the media agenda and policy implementation.[19] Study Two is the first to our knowledge to statistically examine the association between POS newspaper content and POS policy progression over time. Finally, only one tobacco control study has ever examined the relationship between the media agenda and public opinion,[11] and no studies have focused on news media content (newspaper or other channel) and how it is related to public opinion on POS tobacco control policy solutions; this gap is addressed in Study Three with a unique communication experiment designed to evaluate the relationship between the characteristics of POS-news messages and public opinion towards POS policies. All of the studies here extend traditionally descriptive content analyses to include key variables in the Agenda Setting/policy change pathway: the development of public opinions and policies, which are precursors to health behaviors. Public health practitioners would

benefit from studies that very clearly inform their real world policy change efforts. The intention of the current work is to offer evidence towards the best use of strategic communication in the mass media, so as to create the conditions where public health promoting policies can be implemented at the local or state level.

CHAPTER 3 THEORETICAL/CONCEPTUAL FOUNDATIONS

3.1 Theoretical and Conceptual Model for the Dissertation

Guided by the policy change process, media advocacy and the agenda setting framework, the ultimate goal of this research is to contribute to a proactive blueprint for strategic communication initiatives that will can support the implementation of POS tobacco control policy initiatives that shape tobacco use behaviors. Figure 3.1 blends these concepts and offers a guiding framework linking media advocacy to health behaviors.
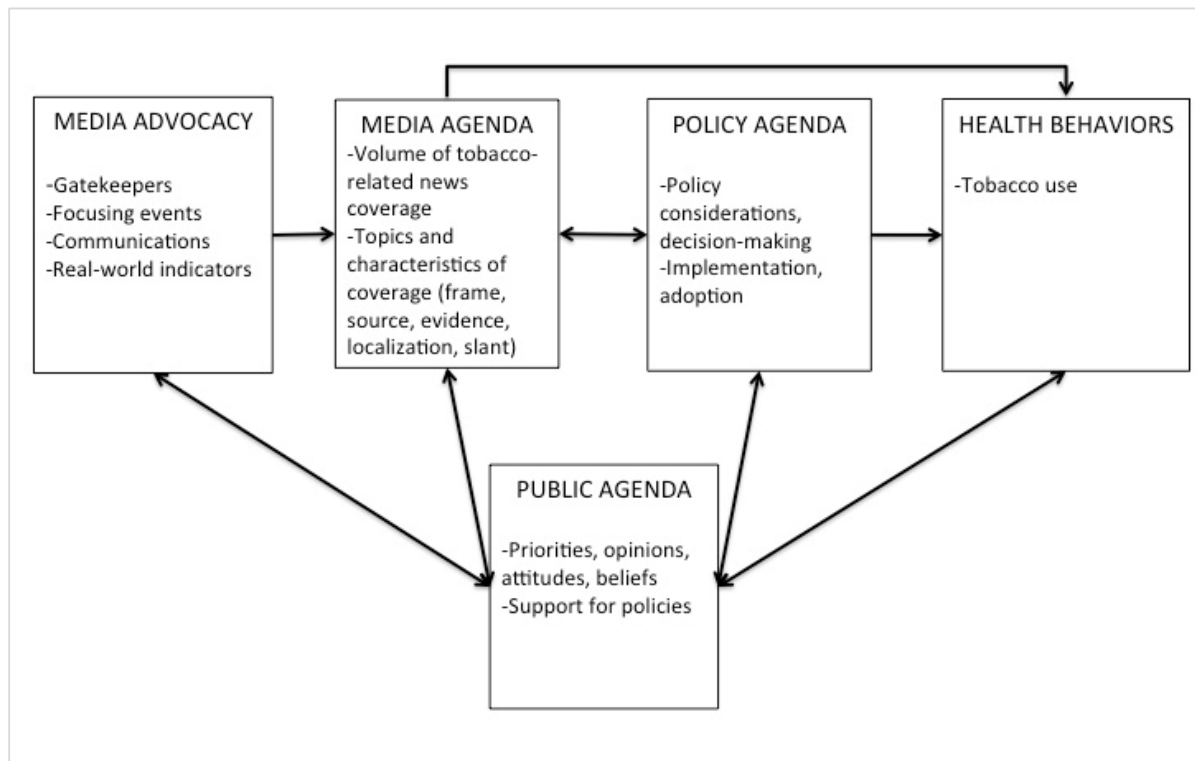
Figure 3.1 Guiding Framework: from Media Advocacy to Health Behaviors.

First, in the context of tobacco control, we see media advocacy activities as informing the media agenda: the volume of news content about an issue, topics/themes covered and characteristics of content. The generation of news coverage – reaching the media agenda - is often a measured outcome of state tobacco prevention coalition efforts.[90] The media agenda informs the reciprocal relationships between the public agenda and policy agenda: this is the agenda-setting function of the mass media. Mass media content reaches the general public and policymakers, alike, each stakeholders in the policy change process who rely on the news media for information.[91] Independently and together, the media, policy and public agendas contribute to health behaviors: the health impacts of attitudes and opinions,[30] mass media,[7] and policy interventions[3] are well-demonstrated. The growth of POS tobacco control policy efforts across the US [5] creates a unique opportunity to study the relationships between the media, public and policy agendas – key components of the pathway from media advocacy to health behaviors. The three studies within this dissertation research extend the current content analysis literature to describe POS-related tobacco news content and empirically examine the relationships between media content characteristics, POS policy implementation, and public support for POS policies, as shown in Figure 3.2.
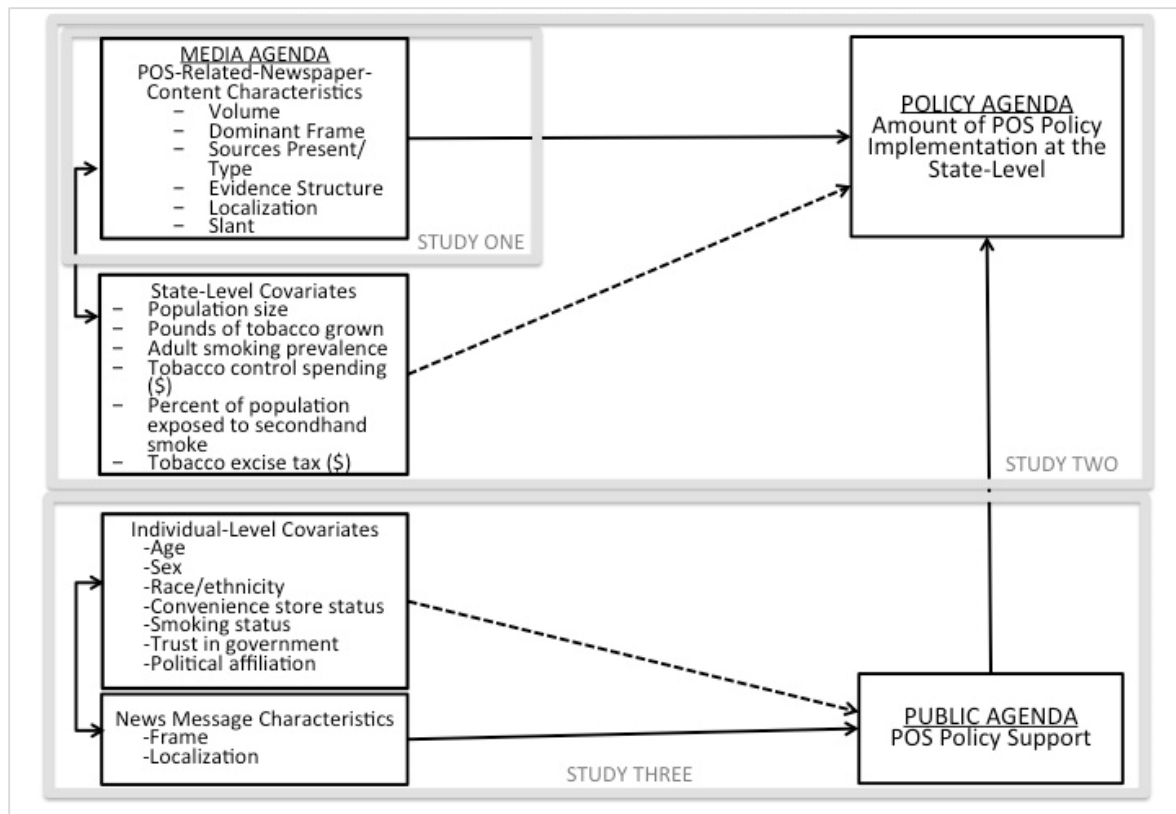
Figure 3.2. Overarching conceptual model of the dissertation. From Media Advocacy to Health Behaviors: Examining the Relationships between Point-of-Sale Tobacco Control Newspaper Content, Public Opinion, and Point-of-Sale Policy Implementation

3.2 Research Aims and Hypotheses

3.2.1 Study One

The purpose of Study One is to describe POS-related newspaper coverage and to test a series of hypotheses about the relationships between news content characteristics within articles. Descriptive findings from this study represent a first step in media advocacy and the policy change processes: identifying the current media agenda, which is known to impact public opinion and policy development. Each aim is discussed in detail below.

3.2.1.1 Aim 1

Aim 1 of this study is to describe, using content analysis methods, the volume and characteristics (frame, source presence and type, evidence structure, degree of localization,

slant) of a sample of US print newspaper content related specifically to point of sale (POS)

tobacco control programming and policies from January 1, 2007 to December 31, 2014 in

national and state level newspapers. In keeping with descriptive research, and towards

measurement of important characteristics of content, the following research questions will be

examined:

RQ1. What is the volume of content (measured as the number of articles) in each year

of the study period and cumulatively, at the national level and within each state?

RQ2. Which article types (e.g. hard news, editorials, letters to the editor) were

published, and what is the distribution by category?

RQ3. Which POS themes are covered and with what frequency?

RQ4. What frames are present and with what frequency?

RQ5. Which sources are present, and with what frequency?

RQ6. To what extent are the media advocacy techniques of varying evidence

structure (data/narrative) and localization (local quote/local angle) present in content?

RQ7. How is the content slanted, overall? Is it pro-tobacco control, anti-tobacco

control, mixed or neutral, and does this vary by article type?

3.2.1.2 Aim 2

Study One also tests hypotheses predicting the relationships between aspects of

newspaper coverage of POS tobacco control. Aim 2 is to determine whether specific strategic

communication elements (e.g. frame, presence and type of sources, evidence structure, and

degree of localization) in news articles are associated with overall article slant (pro-tobacco

control, anti-tobacco control, mixed or neutral). Specific hypotheses follow.

The slant or position of news articles in favor of or against an issue has important implications for general public and policymaker support for issues and policy development.[85, 92-94] As an illustration, in a community in Missouri where a Smoke Free Workplace ballot initiative failed (in other words, no policy was implemented), the failing community had a higher proportion of anti-tobacco control (slanted) articles, and the successful communities had lower proportions of anti-tobacco control slanted articles. Additionally, the community with the failed Smoke Free initiative had a higher proportion of articles with a 'rights' frame, and a higher proportion of articles that used no evidence [57], compared to lower proportions of each in the successful communities. Moshrefzadeh found that only 39.8% of analyzed articles were positively slanted for tobacco control issues,[67] and found associations between article type and slant, such that news articles tended to have a positive or neutral slant, and letters to the editor tended to have a more negative slant. What remains unclear is the relationship between the slant of an article and other characteristics of an article (e.g. frame, presence and type of sources, evidence structure, and degree of localization). The hypotheses under this aim seek to confirm relationships within POS-related content that are suggested by descriptive findings from past tobacco-related content research.

A relationship between frame and slant has been identified in analyses of content discussing Smoke Free Air policies. (It is important to note that I have conceptually merged variables that are, in essence, 'frames' but named differently – e.g. approach or theme.) Moshrefzadeh and colleagues found relationships between frame ('approach') and slant such that articles with a health or social approach were positively slanted, articles with an environmental or factual approach were neutrally slanted, and articles with a rights or regulation approach were negatively slanted.[67] Further, Bach and others found that frame

and slant were associated with one another in small Missouri communities, such that the health framed articles were more likely to be pro-tobacco control, and rights-framed articles were more likely to be anti-tobacco control.[57] Finally, Harris and colleagues noted a higher than expected proportion of articles with a pro-tobacco control slant and a health frame ('theme'), and a higher than expected proportion of articles with an anti-tobacco control slant and a political frame.[83] Given these relationships, within the POS context, I hypothesize:

H1. Dominant frame is associated with overall slant, such that news articles with dominant health frame are more likely to have a pro-tobacco control slant than an anti-tobacco slant, and news articles with dominant economic or political frame are less likely to have a pro-tobacco control slant than an anti-tobacco control slant.

Relationships have also been suggested between the presence or absence of certain sources and slant; the presence of sources in news media content can shape the discourse and influence public support for the issue.[13, 19, 95]. In the first published tobacco-related content analysis, Chapman (1989) found that the source ('origin') of the article was associated with the slant for tobacco control: whereas the majority of articles published in Australia in the late 1980's were positively slanted for tobacco control (62.3%, n=997), articles originating from doctors, health workers or health agencies were predominately positively slanted where as articles originating from the tobacco industry or advertising were more negatively slanted.[73] Wakefield and colleagues examined the presence of public health advocacy groups as sources in Australian media coverage about tobacco issues,[77] and found that advocacy organizations were mentioned in only about 20% of articles published during the study period. The presence of public health advocacy sources in articles was associated with a slant that was positive or mixed for tobacco control, and the absence of

public health advocacy sources in articles was associated with negative or neutral slant for tobacco control.[77] Given these relationships, within the POS context, I hypothesize:

H2. Presence and type of sources are associated with overall slant, such that news articles with greater amounts of pro-tobacco control sources (health care provider, public health advocacy or nonprofit group, government/health department official) are more likely to have a pro-tobacco control slant than an anti-tobacco control slant, and news articles with greater amounts of anti-tobacco control sources (tobacco retailer/labor/business group, tobacco industry) are less likely to have a pro-tobacco control slant than an anti-tobacco control slant.

Another important relationship is between the structure of information or evidence provided (e.g. anecdote, story or narrative versus data or statistics), and slant. In an analysis of content related to exempting New Jersey casinos from Smoke Free policies, Wackowski and colleagues coded the information structure that was used to support frames for or against the exemption, because narrative stories and personal anecdotes can be more persuasive than statistical evidence.[66] Unfortunately, however, the relationship between information structure and article slant or overall policy success was not examined. A 2012 qualitative examination of letters to the editor (LTEs) about Smoke Free Air laws indicated a relationship between evidence structure and slant: pro-tobacco control editorials used data and statistics to make an argument, whereas and anti-tobacco control editorials used narrative communication and personal anecdotes to make an argument.[62] Given these relationships, within the context of news articles about POS tobacco control, I hypothesize:

H3. The presence of data and/or narrative research mention are associated with overall slant, such that news articles with both data and anecdote/narrative evidence are more

likely to have a pro-tobacco control slant than an anti-tobacco control slant, whereas news articles with no evidence or data without a source are less likely to have a pro-tobacco control slant than an anti-tobacco control slant.

The association between the degree of localization and slant is also important to consider. Caburnay and colleagues[50] analyzed the extent to which local health news coverage in Missouri incorporated local sources or a local story angle, two elements that add to the public health impact of messages, according to an agenda-setting and media advocacy framework. No analyses were conducted, however, to test the association between localization and slant. Within the context of POS tobacco control, I hypothesize:

H4. Degree of localization is associated with overall slant, such that news articles with both a local quote and a local angle are more likely to have a pro-tobacco control slant than an anti-tobacco control slant, whereas news articles with neither a local quote or local angle are less likely to have a pro-tobacco control slant than an anti-tobacco control slant.

Finally, it is important to explore the relationship between source and frame. Within the context of the casino exemption from the New Jersey Smoke Free policy in 2005-2007, Wackowski and colleagues identified that the most common frame supporting the exemption of casinos was 'economic', stating that the casino ban would hurt local business, cause job loss, and hurt the overall economy of the state.[66] The economic frame was attributed most frequently (83.0% of the 112 times it was used) to casino representatives as a source. Further, the most common frames opposing the exemption were 'unfair' to bar and restaurant owners whose establishments are not exempted from the SFAA, and 'protect health', citing that environmental tobacco smoke is lethally dangerous to workers and patrons. The unfair frame was attributed most frequently to bar and restaurant representatives (73.5% of the 98 times

the frame was used), and the 'protect health' frame was attributed most frequently to public health representatives (37.5% of the 96 times the frame was used). In the same decade, as part of a thematic analysis of media content attributed to statements made by the Australian Hotels Association (AHA; industry) and public health advocates during the debate for smoke free bars in Australia, Champion and Chapman also found a relationship between source and frame: AHA/industry sources most commonly used economic frames where as health advocates used health frames.[68] The cultural/ideological frame category was very broad, from 'legal product' to individual freedoms/rights, and was used both positively and negatively by both AHA/industry and public health advocates.[68] These findings show that stakeholder groups or sources may hold tightly to the use of certain frames or ways of positioning the issue. Therefore, within the context of POS, I hypothesize:

H5. Source type is associated with dominant frame, such that news articles with only tobacco industry or tobacco retailer sources are more likely to have political or economic frames than any other frame, and news articles with only public health advocate sources are less likely to have political or economic frames than any other frame.

3.2.2 Study Two

The purpose of this paper is to examine (a) whether POS-tobacco-control-related newspaper content plays a role in the implementation of POS tobacco control policies over time at the state level, and (b) the extent to which discrete characteristics of newspaper content (e.g. frame, source presence and type, evidence structure, degree of localization, slant) are more or less associated with POS tobacco control policy implementation over time, while controlling for other potentially influential factors. Both questions address gaps in current research and serve to inform promising public health and media advocacy practice.

Researchers with Advancing Science and Policy in the Retail Environment (ASPiRE) (grant number U01-CA154281), a project of the National Cancer Institute (NCI), State and Community Tobacco Control (SCTC) initiative, are tracking the implementation of 25 possible state-level POS policies with the Point of Sale Policy Implementation Index (POS PII). POS PII data were collected via telephone interview with state tobacco control program managers in September 2012 and September 2014. The POS PII is a composite continuous score, ranging from 0 to 100 for each state, where 0 means no formal activities and 100 means implementation of all 25 unique POS policy solutions (see Tables 1 and 3). For each specific policy option, states are coded "0" for no formal activities, "1" for planning/advocating, "2" for policy proposed, "3" for policy enacted, or "4" for policy implemented (see Table 3). This scoring system provides an opportunity to link policy implementation milestones with media content.

3.2.2.1 Aim 1

The work of this aim intends to add support for a longitudinal association between newspaper content and policy change in the context of state-level POS tobacco control. Aim 1 is to determine whether the volume and characteristics (e.g. frame, source presence and type, evidence structure, degree of localization, slant) of state-level POS-tobacco-control-related newspaper content from 2012 to 2014 is significantly related to the state-level POS Policy Implementation Index in 2014, controlling for the state-level POS Policy Implementation Index in 2012 and other covariates.

Longitudinal studies of newspaper content are rare. In a review of content analyses of tobacco-related news media content conducted as part of this dissertation research and dating back to 1989 (see Introduction & Literature Review), only six longitudinal studies were

identified. Of the six, four studies were unrelated to policy. One study each in Australia[86] and the United States[87] examined general trends in tobacco coverage over time, a third Australian study examined specific changes in how smokers were portrayed over time,[88] and a fourth study by Stillman, et al., examined the interaction between the American Stop Smoking Intervention Study (ASSIST) and time on the outcome of the rate of print media coverage of tobacco issues,[14] essentially finding that public health practitioners *can* impact the volume and nature of media content with media advocacy effort.

Only two studies have examined the longitudinal relationship between newspaper content and any policy outcome. Neiderdeppe and colleagues investigated the relationships between tobacco control media advocacy efforts, the extent of media coverage, the passage of local policies, and youth smoking rates in Florida[19] using event history analysis (logistic regression) methods. The Florida study found that news coverage *did* contribute to the passage of tobacco product placement ordinances (requiring tobacco to be placed behind the counter) at the county level: a one-unit increase in exposure to news content about the Florida tobacco control program efforts was associated with a 94% increase in the odds of counties enacting a new policy. The study design, however, did not allow Neiderdeppe and colleagues to identify the characteristics of content that may have contributed to the policy success (e.g., How were issues 'framed', and did that matter?). A 2014 publication by Thrasher, et al., assessed relationships between the volume and characteristics of media content in South Carolina ("article tendencies" or slant and "arguments" or frame) and different time periods (legislature in session versus not in session; tax initiative successful versus not successful).[18] Findings suggest that frames in content were related to policy adoption. In the year with a successful tax increase, as compared to the four years without

unsuccessful tax increases, newspaper content contained more of the pro-tobacco control economic arguments "tax will raise general state revenue" and "tax should pay for cessation and prevention programs", less of the anti-tobacco control economic argument "little consensus on how money should be spent", and more of the anti-tobacco control argument "tax will hurt business and tobacco farmers". The Thrasher, et al., study was the first to statistically examine a characteristic of content (frames present) as it related to policy adoption. Within the work of Aim 1, I offer the following hypothesis:

H1. The POS Policy Implementation Index score in 2014 will be significantly higher than the POS PII score in 2012, and the volume and characteristics of newspaper content will be significantly related to POS PII score in 2014, controlling for the PII score in 2012 and other co-variates.

3.2.2.2 Aim 2

Building upon Aim 1, the work of Aim 2 examines the role of discrete characteristics of newspaper content in any change in POS PII score over time. Aim 2 is to examine the extent to which discrete characteristics of state-level POS-tobacco-related newspaper content (e.g. volume, dominant frame, source presence and type, evidence structure, degree of localization, slant) are associated with POS PII score at Time 2 in 2014, controlling for Time 1 POS PII score and state-level covariates. This is an important research question, given that the ultimate goal of many tobacco control programs is to use media advocacy to build support for and implement policies that improve health. The study is similar to an intervention study where the POS PII score in 2012 is "baseline", the newspaper content generated from 2012 to 2014 is an intervention, and the POS PII score from 2014 is the outcome. The work of this aim is to parse out which discrete characteristics of content (e.g.,

volume, dominant frame, source presence and type, evidence structure, degree of localization, or slant) have the strongest relationship to the Time 2 POS PII score, when controlling for other relevant factors.

I hypothesize that measured characteristics of newspaper content are significantly associated with Time 2 POS PII score (detailed hypotheses are listed, below). Beyond simply the volume of coverage, both theory and past research suggest the importance of unique characteristics of news content in the policy implementation process (e.g. slant, frame, source presence and type, evidence structure, degree of localization). First, the volume of tobacco-related news content in a state is a frequent evaluation metric for the success of tobacco control programs. Coalitions who are actively educating community members and decision makers to build support for public health policies are known to generate higher amounts of news media coverage.[14, 19, 96] Second, the slant of news articles has been suggested to play a role in the success or failure of smoke free air or tobacco tax laws in descriptive analyses. Champion and Chapman identified three times as many positively-slanted than negatively-slanted articles (n=171 versus n=48, respectively) in advance of successful passage of an Australian pub smoking ban in 2003.[68] The authors suggested that slant is related to the success or failure of policy initiatives, even though the pub smoking ban study was not powered or designed to specifically answer this question. A study of newspaper coverage of a statewide smoke-free law in Michigan in 2009 found that the majority of content was positively slanted towards the law prior to adoption.[69] With regard to four communities in Missouri who were working towards smoke-free workplace policies:[57] in the one community where *no* policy was passed (compared to 3 communities where a policy was passed), newspaper content had highest proportion of letters to the editor (which are

46

more frequently negatively slanted rather than positively slanted), and the highest proportion

of anti-tobacco control slanted hard news articles (34.2%). Also, with regard to a failed

tobacco tax ballot initiative in Missouri, in the month prior to public voting, anti-tobacco

control slanted articles were dominant.[83] Timing was critical in this example given that in

the year prior to the vote, most news content had a pro-tobacco control slant (63.8%).[83]

Third, frames in content play a role in policy adoption. From a past descriptive content

analysis in Missouri, "economic" frames were most prevalent in areas where voters

demonstrated low support for tobacco tax ballot initiative, whereas "health" and "political"

frames were most prevalent in areas with high support [83]. In another study, a "rights"

frame, which is generally anti-tobacco control, was most common in a community in

Missouri with a failed smoke-free workplace policy campaign.[57] Fourth, the presence of

sources in news content may contribute to POS policy implementation, especially since

health advocates and tobacco industry sources compete for attention and support in the

media.[77] Given more or less of one type of source (e.g. public health or tobacco industry),

policy implementation could be hastened or stalled completely. Fifth, the presence of

evidence in newspaper content, either data- or narrative-based, is also related to policy

implementation, likely because it enhances the perceived importance of an issue. Some

evidence exists to support this claim: a Missouri community with a *failed* smoke-free

workplace policy campaign[57] had much higher prevalence of newspaper articles with no

evidence used (36.9%), as compared to communities with successful smoke-free workplace

campaigns. Sixth and finally, news articles with more localized content such as a local source

and local story angle will be perceived as more relevant to community members and policy

makers alike, and could therefore encourage greater policy implementation. Given these empirical and theorized relationships, I offer the following set of hypotheses:

H2. The volume of articles (measured as the total number of POS-tobacco-related articles of any type in the two-year period) will be positively and significantly related to POS PII score at Time 2 in 2014, controlling for the Time 1 PII score in 2012, other state-level co-variates, and other characteristics of newspaper content.

H3. The number of articles with pro-tobacco control slant (measured as the total number of news articles with a pro-tobacco control slant in the two-year period) will be positively and significantly related to POS PII score at Time 2 in 2014, controlling for the Time 1 PII score in 2012, other state-level co-variates, volume of articles, and other characteristics of newspaper content.

H4. The number of articles with a dominant health frame (measured as the total number of news articles with a dominant health frame in the two-year period) will be positively and significantly related to POS PII score at Time 2 in 2014, controlling for the Time 1 PII score in 2012, other state-level co-variates, volume of articles, and other characteristics of newspaper content.

H5. The number of articles with a one or more health advocate sources (measured as the total number of news articles with one or more public health advocate sources in the two-year period) will be positively and significantly related to POS PII score at Time 2 in 2014, controlling for the Time 1 PII score in 2012, other state-level co-variates, volume of articles, and other characteristics of newspaper content.

H6. The number of articles with any evidence (measured as the total number of news articles either narrative or data evidence in the two-year period) will be positively and

significantly related to POS PII score at Time 2 in 2014, controlling for the Time 1 PII score in 2012, other state-level co-variates, volume of articles, and other characteristics of newspaper content.

H7. The number of articles with localized content (measured as the total number of news articles with both a local angle and a local source in the two-year period) will be positively and significantly related to POS PII score at Time 2 in 2014, controlling for the Time 1 PII score in 2012, other state-level co-variates, volume of articles, and other characteristics of newspaper content.

Within the work of Aim 2, I note two additional analyses of interest. Hypotheses 2 through 7 test for positive, significant associations between each characteristic of content and Time 2 POS PII score, while controlling for Time 1 POS PII score, state-level covariates, and other content characteristics. Beyond my hypotheses about associations, I will investigate the proportion of variance in Time 2 POS PII score that is accounted for by news content characteristics, to answer the more global question, "How important is newspaper content within the work of POS policy implementation?" Also, I will investigate which characteristics of content are most strongly related to Time 2 POS PII score when holding other variables constant, to determine, for example, whether sources present, dominant frame, or another measured characteristic is most relevant to policy implementation.

3.2.3 Study Three

The purpose of Study Three is to evaluate the relationship between the characteristics of POS-news messages and public opinion towards POS policies. Study Three has two aims; each is described further below. The study design is experimental, and will involve a total of 8 unique news message conditions.

3.2.3.1 Aim 1

Public health practitioners partner frequently with media outlets to "earn media" and offer content within news stories.[4] Two content factors that can be readily manipulated by public health advocates are *frame* and the *degree of localization.* This study employs a series of factorial experiments to test the relationship between exposure to a news message and support for POS policy. Aim 1 of this study is describe the *main effects* of message factors (a) frame and (b) degree of localization on POS policy support among a convenience sample of US adults. Ultimately, the goal of Aim 1 is to provide insight into how different news characterizations of the problem of tobacco in the retail setting are associated with varying degrees of public support for POS policy solutions. Hypotheses under this aim suggest that different levels of the message factors (a) frame (health or economics) and (b) localization (local or not local) are associated with different levels of POS policy support.

Factor A in this study is *frame,* and includes two levels: health and economics. A *frame* is the way an issue is described, or packaged, as it is being communicated. Frames organize central ideas, define issues to "resonate with core values and assumptions" (p. 56),[53] and affect the extent to which the message receiver supports – or does not support – the issue.[52] Frames also imply solutions to problems.[22] Simplified 'health' and 'economic' frames are used in this study for several reasons. First, the health and economic frames represent the best distillation of the most common frames identified in past news content. Early analyses of tobacco related news content identified and measured the prevalence of nearly a dozen tobacco control and tobacco interest (pro-industry) frames.[22, 23] However, over time, the most prominent tobacco industry frames were 'positive economic force' and the most prominent tobacco control frames were health-related, for

example 'nonsmoker's rights' and 'kids'. Second, the health and economic frames are generally slanted for or against tobacco control efforts. Economic frames are often used to support the tobacco industry and tobacco retailers, and health frames are used to support public health efforts.[57, 66, 67] Finally, this approach is feasible for experimental testing. Given the important role of framing in shaping the discourse within a competitive media environment, testing the impact of frames that are readily translatable to media advocacy practice is helpful for future implementation. In this study the level 1 frame, health, is the traditional frame of tobacco control advocates[22] and speaks to the health effects of smoking among youth and adults.[23] The level 2 frame, economics, speaks to dollars and cents, and is a traditional tobacco industry appeal to freedom, the American dream, and earning a living. Within the context of this study, I hypothesize that:

H1: Adults who are randomized to receive a news message with a dominant health frame will have higher POS policy support scores across all other factors and levels, compared to adults who are randomized to receive a news message with a dominant economics frame.

Factor B is *degree of localization,* and has two levels within this messaging experiment: level 1 is localized and level 2 is not localized. The use of local sources and a local story angle can add to the public health impact of messages and shape the support of the public and policy makers,[50, 58] likely by increasing the perceived relevance of an issue. Given this, I hypothesize that:

H2: Adults who are randomized to receive the localized news message will have higher POS policy support scores across all other factors and levels, compared to adults who are randomized to receive a non-localized news message.

A third factor, *source*, will not be manipulated but rather held constant in the experiments. A source is a person or organization who gives information to news reporters and who is identified either by quote or paraphrase.[54] Within each of the prepared news messages that will be used in this study, the number and type of sources will be held constant. Each manipulated message will appear like a realistic, fair and balanced news article and will include one statement from a public health advocate (e.g. the Centers for Disease Control and Prevention) and one statement from the tobacco industry and their retail partners (e.g. The National Association of Tobacco Outlets). The presence of sources in news media content can shape the discourse and influence public support for the issue.[13, 19, 95] For example, articles originating from doctors, health workers or health agencies are generally positively slanted for tobacco control, and articles originating from the tobacco industry or articles simply without health sources are more negatively slanted.[73, 77] The inclusion of both source types is an attempt to neutralize the message prior to the addition of other content factors. Source is not a manipulated variable in this particular study because of the risks for confounding the effects of message factors; manipulating messages to conduct a *frame by source* or *localization by source* factorial experiment would be virtually impossible because of the combinations required (e.g. an "health" framed news article with only a tobacco industry source).

3.2.3.2 Aim 2

Factorial designs like the one proposed here, where each level of each factor is exposed to all levels of all other factors,[97] allow for statistical testing of interaction effects in addition to main effects. Interaction effects occur when the effects of one factor are not constant over the levels of a second factor, or in other words, where the second factor

moderates the relationship between the first factor and the outcome. Aim 2 of this study is to determine the extent to which the message factors (a) frame, and (b) localization interact with one another to effect POS policy support among a convenience sample of US adults. The goal of Aim 2 is to identify evidence of interaction between message factors for enhanced communication planning. Hypotheses under this aim are exploratory and suggest that message factors (a) frame and (b) localization *do* interact to effect POS policy support:

H3. Among a convenience sample of US adults, the relationship between <u>localization</u> and POS policy support will vary based on <u>frame</u>, such that, adults who are exposed to the <u>local and health frame message</u> will have higher levels of POS policy support than adults who are exposed to the <u>local and economic frame message</u>.

CHAPTER 4 MANUSCRIPT 1 SETTING THE AGENDA FOR A HEALTHY RETAIL ENVIRONMENT: CONTENT ANALYSIS OF US NEWSPAPER COVERAGE OF TOBACCO CONTROL POLICIES AFFECTING THE POINT OF SALE, 2007-2014

4.1 Introduction

Policies that affect the sales and marketing of tobacco products in the retail environment, or the point of sale (POS), are emerging in tobacco control, moving beyond raising tobacco product excise taxes and strong clean indoor air laws.[26] The Institute of Medicine has recommended reducing the number and density of tobacco retailers to curb tobacco consumption[26] and Centers for Disease Control and Prevention (CDC) recommends policy and environmental interventions to promote tobacco use cessation and prevent tobacco use initiation.[2] POS tobacco control has also gained attention as CVS pharmacies instituted a policy removing sales of tobacco in their stores. The implementation of such POS tobacco control policies (see Table 4.1) can help achieve public health goals.[27, 98]

Table 4.1 Point-of-Sale Policy Domains and Options.

Domain	POS Policy Solutions
1. Tobacco retailer licensing, locations and density	A. Establishing or strengthening tobacco retailer licensing regulations B. Limiting or capping the total number of licenses in a specific area C. Establishing or increasing licensing fees D. Prohibiting tobacco sales in locations youth frequent (e.g., near schools or parks) E. Restricting retailers operating within a certain distance of other tobacco sellers F. Restricting retailers in certain zones (e.g., banning retailers in residential zones) G. Prohibiting the sale of tobacco products at certain establishment types (e.g., pharmacies, restaurants, prisons, military bases/ships) [Note this includes CVS voluntary policy decision to stop selling tobacco in pharmacies] H. Limiting number of hours or days in which tobacco can be sold
2. Advertising	I. Limiting the times during which advertising is permitted (e.g., after school hours on weekdays) J. Limiting the placement of advertisements at certain store locations (e.g., within 1,000 feet of schools) K. Limiting the placement of advertisements within the store (e.g., near cash register) L. Limiting placement of outdoor store advertisements M. Limiting manner of retail advertising by banning certain types of tobacco advertisements (e.g., outdoor sandwich board style ads) N. Banning all types of ads regardless of content (e.g., sign codes that restrict ads to 15% of window space)
3. Product Placement	O. Banning product displays/requiring retailers to store tobacco products out of view (e.g., under counter or behind opaque shelving) P. Banning self-service displays for other (non-cigarette) tobacco products or all tobacco products Q. Restricting the number of products that can be displayed (e.g., only allow retailers to display one sample of each tobacco product for sale) or the amount to square footage dedicated to tobacco products R. Limiting times during which products are visible (e.g., after school hours on weekdays)
4. POS Health Warnings	S. Requiring graphic warnings at the point of sale T. Requiring the posting of Quit line information in tobacco retail stores
5. Non-tax approaches to raising price	U. Establishing cigarette minimum price laws V. Banning price discounting/multi-pack options W. Banning *distribution* or *redemption* of coupons X. Establishing mitigation feels (e.g., a fee to clean up cigarette litter) Y. Requiring disclosure or Sunshine Law for manufacturer incentives given to retailers
6. Other POS policies	Z. Banning flavored other tobacco products AA. Requiring minimum pack size for other tobacco products BB. Raising the minimum legal sale age (MLSA) to buy tobacco products CC. Other policy not listed here
7. Federal policy	DD. Any Federal regulation (e.g., Family Smoking Prevention and Tobacco Control Act)

State- or local-level POS policy implementation is a complex process that requires engaged support from health advocates, the general public, and policy makers. The agenda setting function of mass media suggests that the amount and nature of media content – often generated by media advocacy activities – can contribute to public and policymaker attitudes and opinions,[13, 44] which then influence policy change. The mass media play a powerful role in establishing what issues are salient for policymakers;[45] newspapers, especially, appear to have a primary agenda-setting role in tobacco policy change.[81, 99, 100]

Media content can vary in ways that shape public discourse in favor of or against policy implementation. Content framing (the way an issue is described or packaged as it is communicated)[51] has implications for how the issue is interpreted,[52, 101] the extent to which an issue is supported by the public and decision makers,[52] and implied solutions.[22] Often, public health advocates and the tobacco industry vie for shaping a discussion in hopes that audiences identify with the issue, and share their particular view of the argument. Relationships between frame and slant were identified in news content about clean indoor air laws, such that health-framed articles were more likely to be slanted in favor of tobacco control,[57, 67, 83] and rights, political or regulation-framed articles were more likely to be slanted against tobacco control.[57, 67, 83]

The presence of sources also shapes the news discourse.[13, 19, 95] A source is a person or organization who gives information to news reporters and is explicitly identified by quote or paraphrase.[54] An important tool for promoting policy change is including public health advocates as news sources who contribute to a pro-tobacco control slant.[4, 7, 77]

The use of narrative or statistical evidence can support the diffusion of health policies [56] by helping to characterize the problem and solutions,[57] and by educating the

public.[46] For example, the presentation of relevant research evidence can properly identify a problem, aid in the solution development, and improve policymaker knowledge and support.[50, 58, 102] The extent to which articles are developed with local quotes and local story angles (localization) also shapes public and policymaker support.[50, 58]

Frames, the presence of sources, the use of narrative and data-driven evidence, and the degree of localization can impact the slant of the article[59, 60], and may have significant impact on public and policymaker support for issues and policies.[85, 92-94] For example, two communities in Missouri with different exposure to media slant were compared with regard to their ability to pass tobacco control legislation. The community that was exposed to more anti-tobacco control articles, more articles with a 'rights' frame, and more articles presenting little to no evidence was less likely to pass tobacco control policy legislation as compared to its counterpoint community with lower exposures on those frames[57]. What remains unclear is the relationship between article slant and other characteristics (e.g., frame, presence and type of sources, evidence structure, and degree of localization). Measuring the media agenda via content analysis is an important first step in understanding the importance of slant to policymakers[54].

The goal of this study is to describe eight years of mass media coverage of POS tobacco control efforts in a sample of high circulation US national and state-level newspapers. This POS-focused study fills a distinct gap in the literature; past work has focused largely on general tobacco issues in the US [17, 87], smoke free laws [57, 65, 67, 69] and tobacco taxes.[18, 83] In addition, we test hypotheses about the relationships between article content characteristics and overall article slant for tobacco control. We hypothesized that articles with a health frame, greater amounts of pro-tobacco control sources, both data

and narrative evidence, or a local angle or quote are more likely to have an overall pro-tobacco control slant than an anti-tobacco control slant. Conversely, we hypothesized that articles with economic or political frames, greater amounts of anti-tobacco control sources, no evidence or only data without a source, or no local quote or local angle are less likely to have a pro-tobacco control slant than an anti-tobacco control slant.

4.2 Methods

4.2.1 Newspaper Sampling Frame

We used a content analysis method to test our hypotheses by sampling the five highest circulating national US newspapers[103] with certainty and adding state newspapers. For each state, the top two highest-circulating state-level newspapers were included, and additional available newspapers were added by descending circulation rate until a summed state-level circulation rate was equal to or greater than 5% of the 2010 Census state population. This sampling method is beneficial because it ensures sufficient population reach to have meaningful associations with public opinion.[11]

4.2.2 Article Search Terms

We used search terms to identify POS-related newspaper articles published in sampled newspapers between January 1, 2007 and December 31, 2014. The January 1, 2007 time point was 2.5 years prior to the passage of the 2009 Family Smoking Prevention and Tobacco Control Act (FSPTCA), which acted as a focusing event opening new legal pathways towards state- and local-level POS policy change.[104] Search terms were ("tobacco" OR "smok!" OR "cigar!" or "e-cigar!" or "electronic cigarette") [in the headline] AND ("sale!" OR "market!" OR "advertis!" OR "store!" OR "point! of sale" OR "point-of-sale" OR "retail!" OR "point! of purchase" OR "point-of-purchase" OR "powerwall" OR "supermarket!" OR "grocery" OR "outlet!" OR "pharmac!") [in 'all text'].

4.2.3 Data Collection and Coding Procedures

Articles were downloaded from America's News and ProQuest databases. Coding procedures followed a protocol developed iteratively through four rounds of double coding, reliability checks, and protocol revisions. The structured codebook with variables and response categories was informed by past content analyses in tobacco[57, 67, 77, 83, 90, 105] and health promotion,[50] and a preliminary review of POS-related content. Inter-rater reliability (IRR) was measured with Cohen's Kappa.[106] One of four coders independently screened and coded 100% of articles and a fifth coder, the lead author, independently double-screened and double-coded 10% of articles and resolved coding disagreements. IRR was calculated using IBM SPSS Statistics Version 23 (Armonk, NY).

4.2.4 Article Inclusion Criteria

Articles retrieved via search terms were screened for study inclusion according to four variables. First, included articles had the words smoke, smoking or tobacco; cigar, little cigar, or cigarillo; cigarette, electronic cigarette, e-cigarette, or vaping device; snus, snuff, dip, chewing tobacco; or other tobacco product in the headline. Second, included articles had at least one paragraph of tobacco-related content. Third, included articles contained a main POS theme (see Table 1). The POS theme measure was created by merging a commonly used[8] tobacco theme coding scheme[90] with a list of POS policy options.[107] Articles without a main POS-related theme were excluded. Fourth, news articles, letters to the editor (LTE) and opinion/editorials written by the newspaper were included; duplicate articles, photos without text, and cartoons were excluded.

4.2.5 Article Content Measures

Each article was coded for the presence or absence of 30 unique POS-policy options and these variables: (1) frames, (2) sources, (3) evidence structure, (4) degree of localization,

and (5) slant. (See Tables 4.1 and 4.2.; See Appendix C for codebook.) Frames could be

positive, negative or neutral for tobacco control objectives, and more than one frame could be

present in each article; however, at least two sentences of content were required for the frame

to be considered 'present'. Frame values were adapted from previous research[57, 67, 68, 83]

and a preliminary inductive review of sampled POS content. Sources included any individual

or organization that was directly quoted in an article, without regard to whether they

explicitly mentioned tobacco. Evidence structure was adapted from two previous studies[50,

57]; evidence was defined as data (statistics/numbers) or personal anecdotes (authentic

stories or narratives) within the article. In state-level newspapers, localization included the

presence or absence of local quotes or local angles. In national newspapers, articles were

deemed to have a local angle if the article focused on a particular region, state or city; quotes

were deemed "local" if they were attributed to a person or organization from the locality that

was the focus of the article. Finally, articles were coded for overall slant according to

previously used measures.[17, 57, 67, 77, 90] We required clear statements of support for or

against tobacco control to be present to justify any slant code.

Table 4.2 Article Content Characteristics Measures and Response Options.

Frames Present [57, 67, 68, 83]
1. Health: Emphasis on health issues or effects of tobacco on individuals and society, general behaviors and health consequences of tobacco use, and addictive nature of products.
2. Economic: Emphasis on monetary reasons for or against tobacco control policies/interventions, for example impacts on economy, retailers or business profits or healthcare costs.
3. Political/Rights: Emphasis on political stories with emphasis on political actors and lobbying, or ideological reasons for or against tobacco control, elucidating democratic rights and civil liberties such as the right to smoke, the right to sell tobacco, or the right to be protected from smoke, smoking, or tobacco marketing.
4. Regulation: Emphasis on the process or creation of bylaws, regulation, ordinances, or policy implementation, as a way to solve or not solve a problem.
5. No clear frame
6. Other frame [Write in]

Source Type and Number Present [57]
1. Public health advocacy or outreach/nonprofit group/coalition (e.g., Tobacco-Free Missouri, American Lung Association, Campaign for Tobacco Free Kids)
2. Health department officials/staff (city, county, state, national)
3. Hospital/Healthcare provider staff/representative/attorney/consultant/spokesperson (e.g., MD, Dr., hospital staff; health care analyst)
4. Educational institutions staff/faculty/spokesperson (e.g., PhD at university, research institute, school district)
5. Government or law enforcement (e.g., County Council, State Legislature, City Commissioner, Police Chief, except health department)
6. Community member/concerned citizen (e.g., local person or labor group or business analyst/person)
7. Tobacco industry or their representative/spokesperson
8. Tobacco retailer or retailer association (e.g., convenience store owner or NATO) or their representative/spokesperson
9. Smoker/vaper/tobacco user (individual)
10. Tobacco users association/smokers rights advocacy group (e.g. Vaper's association) or their representative/spokesperson

Evidence Structure Present [50, 57]
1. No evidence present. Evidence was defined as data, statistics and numbers, or personal anecdotes, real-life, authentic stories or narratives, within the article.
2. Only data or statistics present.
3. Only stories present.
4. Both data and story present.

Degree of Localization
1. Local quotes: presence or absence of quotes attributed to a specific, local person who is identified by name and/or position and from the state in which the newspaper is published, or representing an organization based in the state.
2. Local angle: Presence or absence of a local angle, meaning information from or about a local (to the state) individual or organization, such as local data, local people, local stories, local problems, or other issue of importance to local community.

Slant [17, 57, 67, 77, 90]
1. Positive for tobacco control (pro-tobacco control): Articles that supported further education, regulation or restriction were coded 'positive' slant, in favor of tobacco control.
2. Neutral: Articles with no opinion specified.
3. Mixed for tobacco control: Mixed articles included both sets of opinions or news.
4. Negative for tobacco control (anti-tobacco control): Articles where the tobacco or e-cigarette/vaping industry was upheld, or public health regulations were overturned, were coded as 'negative' slant, or anti-tobacco control.

4.2.6 Data Analysis

Since articles cluster within newspapers, we used generalized estimating equations (GEE)[108, 109]. Outcome variables in hypothesis testing were modeled as binary categorical variables. GEE model specifications included an exchangeable correlation matrix, which assumes a constant newspaper effect where within-subject observations are equally correlated and there is no ordering; a logit link function to linearize the data, standard for binary dependent variables; and, a binomial distribution of the dependent variable.[110] Regression coefficients produced by GEE models were exponentiated to calculate odds ratios. Mean estimates were also produced for ease of interpretation. IBM SPSS Statistics Version 23 (Armonk, NY) was used to analyze the data.

4.3 Results

4.3.1 Newspaper Sampling Frame

A total of 5 national-level (*The Wall Street Journal*, *USA Today*, *New York Times*, *Los Angeles Times*, and *NY Daily News*) and 268 state-level newspapers comprised the sampling frame (See Appendix D). We achieved 5% population coverage for 48 of 50 states. The mean number of newspapers sampled for each state was 5.36 (Range = 1 in Delaware to 24 in California) and mean circulation level was 5.86% (Range = 1.4% in Delaware to 12.6% in Hawaii). Due to difficulty accessing newspapers in database subscriptions, we were not able to secure 5% population coverage in Arizona and Delaware but secured 2.0% (n=7 newspapers) and 1.4% (n=1 newspaper) circulation, respectively.

4.3.2 Sampled Articles

Search terms identified 4,600 articles for inclusion screening. Inclusion criteria led to removal of 3,683 articles: 27 articles did not meet headline criteria, 908 articles did not contain at least one paragraph of tobacco content, 2,714 did not have a main POS theme, and

34 were duplicates, photos without text, or cartoons. A total of 917 articles were included in the study: 711 news articles were included in descriptive analyses and hypothesis testing; 109 letters to the editor (LTE) and 97 opinion/editorials were included in descriptive analyses only based on a priori study aims. Mean IRR for coded variables was $\kappa = 0.74$ indicating significant agreement.

4.3.3 Description of POS Content

The total volume of articles published across the 8 years was 917, with an average of 114 articles per year (range 62 – 304) and 9 articles per month (range 0 – 130) (Figure 4.1). The highest peaks in monthly coverage corresponded with the June 2009 passage of the FSPTCA (79 articles), the February 2014 decision by CVS Health to end tobacco sales in all pharmacy locations (130 articles), and the September 2014 removal of tobacco products from CVS pharmacies (45 articles).

Table 4.3 presents the characteristics of articles by year. News was the most frequent article type (77.5%). The top three POS policy domains discussed were tobacco retailer licensing, locations and density (49.1% of articles); other POS policies (e.g., flavor, minimum legal sale age of 21) (29.3%); and federal regulation (e.g., FSPTCA) (26.8%). This distribution of POS domains covered differed across years. For example, in 2009, three-quarters of articles (75.2%) contained information about federal POS policy (e.g., FSPTCA), and in 2014, 80.3% of articles were categorized within the tobacco retailer licensing, locations and density domain.
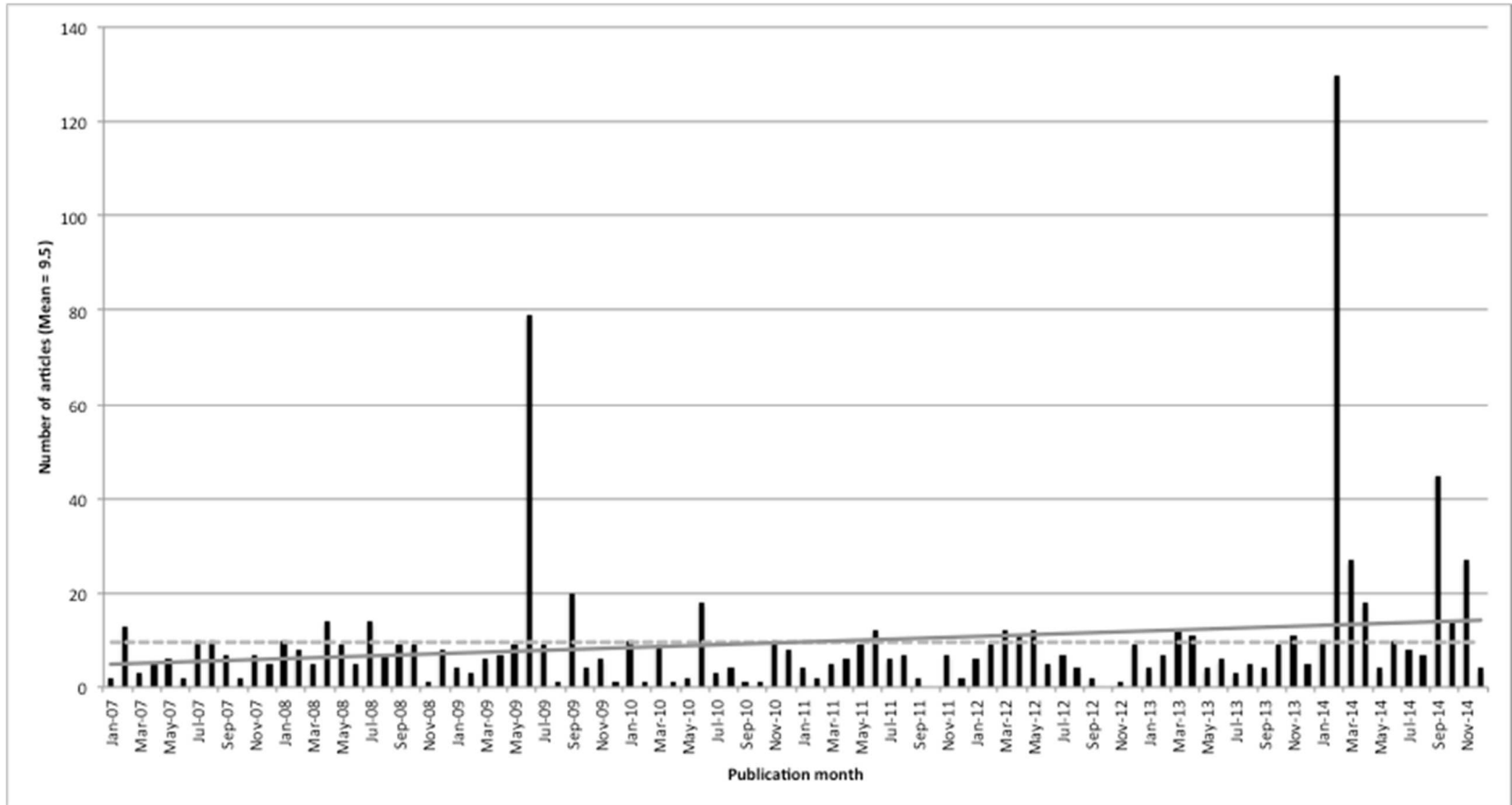
Figure 4.1. Frequencies of POS-Tobacco Control Articles Published in Sampled Newspapers (K=273), Monthly, Between January 1, 2007 and December 14, 2014.

Table 4.3 Characteristics of POS-Tobacco-Control-Related Newspaper Content, by Year, 2007-2014.

	Total (n=917)	2007 (n=72)	2008 (n=99)	2009 (n=149)	2010 (n=68)	2011 (n=62)	2012 (n=78)	2013 (n=81)	2014 (n=304)
Article type, %									
News article	77.5	75.0	68.7	75.8	82.4	82.3	83.3	80.2	77.3
Letter to the editor	11.9	15.3	21.2	6.0	11.8	11.3	12.8	12.3	10.9
Editorial	10.6	9.7	10.1	18.1	5.9	6.5	3.8	7.4	11.8
POS Policy Domains Discussed, %*									
Tob. retailer licensing, locations and density	49.1	36.1	49.5	15.4	35.3	33.9	46.2	30.9	80.3
Other POS policies (e.g., flavor, MLSA)	29.3	16.7	26.3	42.3	22.1	30.6	35.1	55.6	19.7
Federal regulation (e.g., FSPTCA)	26.8	50.0	25.3	75.2	27.9	25.8	10.4	11.1	6.3
POS health warnings	9.7	6.9	4.0	23.5	23.5	17.7	10.4	7.4	0.7
Advertising	9.6	16.7	8.1	26.8	11.8	11.3	5.2	7.4	0.7
Product placement	7.3	8.3	4.0	6.1	8.8	11.3	7.8	27.2	2.3
Non-Tax Approaches to raising price	5.6	4.2	3.0	1.4	1.5	12.9	7.8	21.0	3.6
Frames Present, %*									
Regulation	71.3	90.3	75.8	97.3	85.3	74.2	82.1	86.4	41.8
Health	45.3	31.0	32.7	31.5	29.4	45.2	24.4	45.7	68.4
Economic	26.1	20.8	19.2	8.7	16.2	17.7	28.2	6.2	46.4
Political/Rights	17.4	15.3	26.3	21.5	20.6	16.1	29.5	18.5	9.2
Other Frame	5.4	4.2	5.1	2.7	9.0	3.2	11.5	8.8	4.3
Sources Present, %*#									
Government or law enforcement	52.3	61.3	47.9	71.6	60.0	48.0	63.1	59.7	37.3
Tobacco retailer or retailer association	39.6	21.0	45.2	9.2	32.7	32.0	34.4	32.3	61.6
Public health advocacy group/coalition	35.8	47.5	31.5	44.0	37.0	32.0	40.0	37.1	29.6
Community member/public citizen	23.6	18.0	24.7	14.7	13.0	22.0	18.5	19.4	33.3
Tobacco industry or spokesperson	22.0	32.3	13.7	39.4	31.5	24.0	20.0	14.5	14.1
Health department official/staff	21.5	18.0	27.4	8.3	20.4	28.0	16.9	35.5	22.9
Educational/research institution faculty	12.7	13.1	6.9	15.6	7.4	22.0	3.1	14.5	14.1
Smoker, vaper, tobacco user - individual	10.1	6.5	9.6	10.1	1.9	8.0	3.1	19.4	12.9
Hospital/health care provider	7.0	4.9	1.4	4.6	3.7	4.0	1.5	3.2	14.1
Smoker, vaper, tobacco user – org/association	2.5	0.0	4.1	0.0	0.0	0.0	1.6	14.5	2.0
Evidence, %									
Data/statistics only, with a source	35.1	27.8	27.3	24.2	17.6	37.1	42.3	35.8	46.1
Data/statistics only, without a source	20.9	26.4	23.2	29.5	17.6	22.6	17.9	21.0	16.1
Both data and narrative/story	9.2	11.1	11.1	9.4	2.9	3.2	6.4	11.1	10.9
Story/narrative/personal anecdotes only	3.2	2.8	3.0	2.0	5.9	0.0	3.8	3.7	3.6
Localization, %									

	Total (n=917)	2007 (n=72)	2008 (n=99)	2009 (n=149)	2010 (n=68)	2011 (n=62)	2012 (n=78)	2013 (n=81)	2014 (n=304)
Localized: Both local quote and local angle	41.8	38.6	54.5	20.8	41.2	51.6	65.4	50.6	35.9
Not localized: No local quote, nor local angle	40.5	34.7	25.3	66.4	42.6	27.4	17.9	32.1	44.1
Partially localized: Local quote or local angle only	17.6	16.7	20.2	12.8	16.1	20.9	16.7	17.2	19.7
Overall Slant, %									
Pro-tobacco control	49.7	50.7	42.4	48.3	37.3	45.2	35.9	55.6	58.7
Mixed (both points of view)	32.7	31.0	38.4	31.5	37.3	32.3	44.9	32.1	27.7
Neutral (no opinion)	11.2	8.5	9.1	8.7	19.4	14.5	10.3	11.1	10.9
Anti-tobacco control	6.5	9.9	10.1	11.4	6.0	8.1	9.0	1.2	2.6

* Percents do not sum to 100% because more than one source type could have been quoted, more than one frame could be present, or more than one policy domain discussed in the same article. # Hospitality industry source not shown because total % = 0.6. POS = Point of sale. MLSA = Minimum Legal Sales Age. FSPTCA = Family Smoking Prevention and Tobacco Control Act.

Across the entire study period, the two most common frames present were regulation (71.3%), and health (45.3%). Nearly 80% of articles included a source (data not shown). Government or law enforcement was the most frequently cited source, present in 52.3% of articles, followed by tobacco retailers (39.6%) and public health advocacy groups (35.8%). The presence of the tobacco industry as sources in articles waned over time during the study period, whereas the presence of tobacco retailers as sources in articles increased over time. With regard to the use and structure of evidence in POS articles, nearly one-third of articles (31.4%) contained no evidence at all; this pattern remained fairly consistent across the eight years (data not shown). Another one-third of articles (35.1%) contained only data with a source, and less than 10% contained both data and narrative (9.2%). The degree of localization in POS articles was mixed: 40.5% contained neither a local quote, nor a local angle; 41.8% contained both a local quote and a local angle. About half of POS-related content was slanted in favor of tobacco control and prevention activities (49.7%), nearly one-third (32.7%) reported mixed points of view, and only 6.5% of articles had an anti-tobacco control slant.

4.3.4 Relationships between Content Characteristics

Our results testing relationships between content characteristics and slant indicate partial support for our hypotheses (Table 4.4). News articles with a health frame present were more likely to have a pro-tobacco control slant than any other slant (anti-tobacco control, mixed or neutral). News articles with a political/rights or regulation frame present were less likely to have a pro-tobacco control slant than any other slant.

Table 4.4 Adjusted Odds Rations Produced via GEE for the Association of Article Content Characteristic with Pro-Tobacco Control Slant Among News Articles, 2007 to 2014

News article characteristics (n=711)	Adjusted OR	95% CI	Mean Estimate	*P* value
Frames Present				
Regulation	0.58	0.42 – 0.80	0.41	**0.0009***
Health	2.39	1.80 – 3.19	0.57	**< 0.0001***
Economic	0.91	0.66 – 1.25	0.43	0.551
Political/Rights	0.18	0.11 – 0.30	0.15	**< 0.0001***
Other Frame	2.09	0.81 – 5.42	0.62	0.129
Sources Present				
Government or law enforcement	0.54	0.40 – 0.72	0.40	**<0.0001***
Tobacco retailer or retailer association	0.68	0.46 – 0.99	0.42	**0.045***
Public health advocacy group/coalition	1.00	0.72 – 1.40	0.47	0.992
Community member/public citizen	0.56	0.39 – 0.79	0.36	**0.001***
Tobacco industry or spokesperson	0.38	0.26 – 0.55	0.29	**<0.0001***
Health department official/staff	1.28	0.94 – 1.76	0.52	0.122
Educational/research institution faculty	0.80	0.54 – 1.20	0.42	0.290
Smoker, vaper, tobacco user – individual	0.43	0.25 – 0.73	0.29	**0.002***
Hospital/health care provider	1.11	0.58 – 2.13	0.49	0.758
Smoker, vaper, tobacco user – org/association	0.48	0.22 – 1.02	0.30	0.058
Greater number of pro-tobacco-control sources[1]	2.58	1.22 – 5.47	0.47	**0.013**
Greater number of anti-tobacco-control sources[2]	0.39	0.18 – 0.82	0.25	**0.013**
Evidence Types Present				
Data/statistics only, with a source	1.04	0.71 – 1.52	0.49	0.852
Data/statistics only (w/ or w/out source)	1.57	1.13 – 2.18	0.50	**0.007***
Both data and narrative/story	0.95	0.57 – 1.58	0.44	0.838
Story/narrative/personal anecdotes only	1.20	0.59 – 2.47	0.49	0.617
Any story/narrative (w/ or w/o data)	1.01	0.65 – 1.58	0.45	0.966
Degree of Localization Present				
Localized: Both local quote and local angle (vs. all other)	1.24	0.90 – 1.72	0.47	0.194
Not localized: No local quote, nor local angle (vs. all other)	0.90	0.63 – 1.27	0.43	0.536
Partially localized: Local quote (w/ or w/o local angle)	0.84	0.62 – 1.16	0.42	0.290
Partially localized: Local angle (w/ or w/o local quote)	0.86	0.61 – 1.20	0.43	0.367

1. Pro-tobacco control sources include public health advocacy organization or coalition, health department official or staff, and hospital or health care provider. 2. Anti-tobacco-control sources include tobacco industry or spokesperson, tobacco retailer or retailer association, smoker/vaper/tobacco user – individual, or smoker/vaper/tobacco user – organization/association. POS = Point of sale. MLSA = Minimum Legal Sales Age. FSPTCA = Family Smoking Prevention and Tobacco Control Act.

Second, articles with a greater number of pro-tobacco control sources (than anti-tobacco control sources) were more likely to have a pro-tobacco control slant. Surprisingly, the presence of a public health advocacy group or source was not associated with a pro-tobacco control slant. The presence of government or law enforcement, a concerned citizen, the tobacco industry, tobacco retailers, or an individual tobacco user was associated with the article having an anti-tobacco control slant.

Third, articles with data or statistics present (with or without a source) were more likely to have a pro-tobacco control slant than any other slant. No difference between pro- or other-slant was found for news articles with both data and narrative evidence present.

Finally, degree of localization was not associated with slant, even when national newspapers were excluded from the analysis (data not shown). In this sample, news articles with or without a local quote or angle were no more or less likely to have a pro-tobacco control slant.

4.4 Discussion

Overall volume of POS-related content was low in our newspaper sample from 2007-2014, with an average of just 9 articles per month. However, major peaks in coverage captured national POS events such as the June 2009 passage of the FSPTCA or CVS ending tobacco sales, and minor peaks covered the emergence of local POS policy innovations, such as the September 2009 graphic health-warning requirement in New York City (NYC). The low average volume may be related to the newness of POS work to many state and local tobacco control practitioners.[5] Alternatively, it could be that interest in tobacco control generally has waned over time[87] or that POS work may not be as newsworthy as other tobacco control topics.

We also examined the characteristics of POS-related content. Covered POS policy domains waxed and waned according to national and local POS activities. At the national level, two major events occurred: the Family Smoking Prevention and Tobacco Control Act (FSPTCA), which was coded in this study within the federal regulation domain, and the CVS voluntary decision to end tobacco sales, which was coded in this study as the removal of tobacco sales in pharmacies within the tobacco retailer licensing, locations and density domain. The POS advertising and POS health warnings domains were common in 2009 due to FSPTCA provisions and a local NYC proposal, but dropped off significantly through the remainder of the study period as activity in this domain declined due to legal restrictions and feasibility. The product placement and non-tax price approaches domains were each highest in 2013 based on introduced provisions of the NYC Sensible Tobacco Enforcement program. Ultimately, national policy was the main driver of total content volume and local policy drove the differentiation in POS domain coverage over time.

The regulation frame was most frequently present throughout the study period, except in 2014 during the CVS transition when the health frame was most present. Frame has been measured in many tobacco-related news content analyses, particularly in coverage of smoke-free laws and tax initiatives,[22, 23, 64-66, 68, 83] and the heavy presence of the regulation frame in POS-related content may be unique from past work. In this study, the regulation frame was *present* in 71.3% of articles; it was a *main theme* 22.1% of articles retrieved from a national surveillance system between 2004 and 2010.[87] This may be due to variation in how researchers define unique frames, reflecting measurement error between studies. It is also possible that since 2007 our society has become more conservative and business friendly. There may be renewed interest by some community stakeholders to emphasis the

potential impact of policies related to government regulation, hence, a heavy presence of the regulation frame in this content analysis.

Tobacco retailers and the tobacco industry were much more present as sources in POS content than public health advocacy groups, health departments, or health care providers. Public health sources were present in only about one-third of articles (35%), suggesting an opportunity to enhance the visibility of public health advocates in the media. Whereas tobacco sellers maintain a sophisticated public relations engine to remain profitable, public health practitioners may 1) not have the resources to devote to public relations; 2) not share that priority; 3) lack expertise as spokespeople; or 4) feel constrained by anti-lobbying guidelines required by funders or government agencies. It was surprising to find so few POS articles that contained both statistical evidence and narrative stories, particularly with a local angle, since these are considered powerful tools to facilitate public and policy maker support for policy implementation[50, 58, 111]. The need for greater use of data, stories, and localization in POS offers an opportunity for stronger relationships between newspaper staff, journalists and public health practitioners.

Although presence of a health frame was associated with a pro-tobacco control slant, political/rights and regulation frames were associated with an anti-tobacco control slant in our data. However, fewer than half of articles (45.3%) contained a health frame, and nearly three-quarters of POS articles (71.3%) contained a regulation frame. If this trend continues, POS news content that focuses on regulation and its potential impact on commerce could well detract from health promotion efforts. Not surprisingly, source is also related to slant, such that the common presence of government officials (52.3% of articles), tobacco retailers (39.6%), or the tobacco industry (22.0%) as sources make a pro-tobacco control slant less

likely. POS content appears to credit tobacco retailers as important members of the local business community, rather than as contributors to the continued tobacco epidemic through targeted marketing. When statistical evidence is present, the chance of pro-tobacco control slant is greater, however data with or without a source appeared only about one-third of the time. It may be that POS policies are believed by some stakeholders to threaten business rather than promote health. This is important information for practitioners working to advance POS policies, as they have significant potential to shape future media coverage by working to uncouple the assumed association between more POS policies and a negative effect on business.

This study is limited in that results are only generalizable to the current sample of 273 newspapers; however, the newspaper sample is large enough, with sufficient population reach, that it provides a helpful first look at POS content. Further, human coding of qualitative content is subject to error, but data collectors were well trained and IRR measures were well within acceptable ranges.[106] Sufficient data may not have been available to properly test relationships between localization, evidence structure and slant: this is an area for future work. Given that content related to POS policy implementation brings together politics, business, and health, future research should track changes in the volume and characteristics of POS content over time, and should identify communication strategies that support POS policy progression.

Describing the national media agenda as it relates to POS tobacco control efforts is an important step in policy change processes. This is one of few tobacco-related content analysis studies to test a priori hypotheses describing the relationships between content characteristics[7-10] and slant. This study is important because, in practice, public health

workers partner with the media to serve as news sources, work with concerned citizen coalitions to define issues and solutions, and employ persuasive communication strategies such as framing to package issues in meaningful ways.[45] However, practitioners working on POS efforts report a lack of communication tools as a barrier to further progress.[5] Findings from this study may assist with communication tool development or offer important lessons for public health advocates as they partner with the media and work independently to generate media coverage that supports tobacco control policies.

CHAPTER 5 MANUSCRIPT 2 THE ASSOCIATION OF STATE-LEVEL POINT-OF-SALE TOBACCO NEWS COVERAGE AND POLICY PROGRESSION OVER A TWO-YEAR PERIOD

5.1 Introduction

Over time, tobacco control and communication researchers have described the volume and characteristics of tobacco-related newspaper content across geographies [10], tobacco control topics,[65, 112] and time.[87] Elite national newspapers such as the New York Times, Washington Post, and Los Angeles Times are considered to set an overarching media agenda in the United States,[14] which can influence coverage in other newspapers and media channels.[113] In turn, the news media can play an important role in generating political or social change,[4, 7, 11, 12] or assisting with policy adoption.[16] Given this agenda setting function of the media,[87] many state and local tobacco control programs use the tactic of media advocacy to influence the volume and characteristics of news content.[14] Such efforts help to generate public awareness and support for tobacco control issues, and place pressure on powerful decision makers to implement policy changes.[7, 13-15] Earning media coverage to support tobacco control and prevention interventions, whether through news article generation or letters to the editor, is considered to be an "essential strategy"[7] recommended by national public health leaders.[2]

The scientific relationship, however, between media advocacy efforts and tobacco control policy successes have been rarely studied. A series of descriptive studies offer insight into the characteristics of news content that could most likely to support policy progression. For example, articles with a pro-tobacco control slant were more prevalent (than articles with

an anti-tobacco control slant) in news content prior to passage of an Australian pub smoking ban,[68] and a statewide smoke-free law in Michigan,[69] and less prevalent prior to a failed tobacco tax ballot initiative in Missouri.[83] Frames in news content are the way issues are presented[22], and "economic" frames were most prevalent in news content in geographic areas with *low* support for a tobacco tax ballot initiative in Missouri, whereas "health" frames were most prevalent in areas with *high* support.[83] Sources are also important because health advocates and foes compete for attention in the media,[77] which can hasten or stall policy progression. Evidence in newspaper content, either data- or narrative-based, can enhance the perceived importance of an issue and can contribute to public support. For example, a Missouri community with a *failed* smoke-free workplace policy campaign had a much higher prevalence of newspaper articles with no evidence present, as compared to communities with successful smoke-free policy campaigns.[57] Lastly, news articles with a local source or story angle,[50] or local data or headline,[114] could be perceived as more relevant to community members and policy makers alike.

To our knowledge, only two studies have extended descriptive tobacco news content analyses to examine the empirical relationships that may exist between news content and policy progression.[18, 19] A study of the relationships between tobacco control media advocacy efforts, media coverage volume, local policy progression, and youth smoking rates in Florida [19] identified a positive relationship between the volume of news coverage and the passage of tobacco product placement ordinances at the county level: as news volume increased, so did the likelihood of passing a new policy. The relationships between specific characteristics of news articles (e.g., slant, frame, sources) and policy progression, however, were not examined. A five-year study of media content in South Carolina was the first to

statistically examine whether the arguments present in news content about tobacco taxes were related to policy progression.[18] In the year *with* a tax increase, as compared to the four years *without* tax increases, the two most prevalent arguments in content were slanted in favor of tobacco control and used economic frames (e.g., "tax will raise general state revenue" and "tax should pay for cessation and prevention programs"). In addition, there were no statistically significant differences in the prevalence of health-framed news articles between the year *with*, or the years *without,* a tax increase.

At present, there is a high level of theoretical and practical support for media advocacy as a method to increase the news coverage volume of tobacco-related issues,[7, 14] and some empirical support to indicate that tax and smoke free policy success may be impacted by news content.[18, 19] However, very little guidance exists to inform public health practitioners about the specific characteristics of news content that could be most predictive of any tobacco control policy progression, over time. The emergence of tobacco control policies affecting the retail environment, also called the point of sale (POS) (see Table 5.1), creates a unique opportunity to study this relationship.[5] Retail tobacco sales and marketing are a cause of youth tobacco use initiation, and can make quit attempts for adults and youth much more difficult.[31, 115] As such, the Institute of Medicine has recommended reducing the number and density of tobacco retailers as a means to reduce overall tobacco consumption [26] and POS policies have recently been added to national funding priorities.[26]

The purpose of this study is to examine the extent to which the volume and characteristics of POS-tobacco-control-related newspaper content are related to the progression of POS tobacco control policies over time at the state level, while controlling for

other factors. We hypothesized that the following measured characteristics of newspaper content are positively and significantly associated with POS tobacco control policy progression at the state level: (a) total POS-related article volume, and volume of articles with (b) pro-tobacco control slant, (c) health frame present, (d) one or more public health advocate sources, (e) data or narrative evidence present, and, (f) both a local source/quote and a local story angle present.

Table 5.1 List of Point-of-Sale (POS) Policy Domains (A-F, N=6) and Options (#1-25, N=25) that were Analyzed in State-Level News Content and Tracked for Progression of Implementation at the State Level.

Domain	POS Policy Solutions
A. Tobacco retailer licensing, locations and density	1. Limiting or capping the total number of licenses in a specific area 2. Establishing or increasing licensing fees 3. Prohibiting tobacco sales in locations youth frequent (e.g., near schools or parks) 4. Restricting retailers operating within a certain distance of other tobacco sellers 5. Restricting retailers in certain zones (e.g., banning retailers in residential zones) 6. Prohibiting the sale of tobacco products at certain establishment types (e.g., pharmacies, restaurants, prisons, military bases/ships) [Note this includes CVS voluntary policy decision to stop selling tobacco in pharmacies] 7. Limiting number of hours or days in which tobacco can be sold
B. Advertising	8. Limiting the times during which advertising is permitted (e.g., after school hours on weekdays) 9. Limiting the placement of advertisements at certain store locations (e.g., within 1,000 feet of schools) 10. Limiting the placement of advertisements within the store (e.g., near cash register) 11. Limiting placement of outdoor store advertisements 12. Limiting manner of retail advertising by banning certain types of tobacco advertisements (e.g., outdoor sandwich board style ads) 13. Banning all types of ads regardless of content (e.g., sign codes that restrict ads to 15% of window space)
C. Product Placement	14. Banning product displays/requiring retailers to store tobacco products out of view (e.g., under counter or behind opaque shelving) 15. Banning self-service displays for other (non-cigarette) tobacco products or all tobacco products 16. Restricting the number of products that can be displayed (e.g., only allow retailers to display one sample of each tobacco product for sale) or the amount to square footage dedicated to tobacco products 17. Limiting times during which products are visible (e.g., after school hours on weekdays)
D. POS Health Warnings	18. Requiring graphic warnings at the point of sale
E. Non-tax approaches to raising price	19. Establishing cigarette minimum price laws 20. Banning price discounting/multi-pack options 21. Banning distribution or redemption of coupons 22. Establishing mitigation feels (e.g., a fee to clean up cigarette litter) 23. Requiring disclosure or Sunshine Law for manufacturer incentives given to retailers
F. Other POS policies	24. Banning flavored other tobacco products 25. Requiring minimum pack size for other tobacco products

5.2 Methods

5.2.1 Study Design

Secondary data analysis methods were used to test the relationship between newspaper content and retail tobacco control policy progression at the state level, over a two-year period from 2012 to 2014.

5.2.2 Measures

The dependent variable, policy progression, was measured as the level of implementation of state-level POS tobacco control policies. The POS Policy Implementation Index (POS Index), was developed at the Center for Public Health Systems Science (CPHSS) at Washington University in St. Louis as part of a research project funded by the National Cancer Institute's (NCI) State and Community Tobacco Control Initiative (grant number U01-CA154281); the measure has been described elsewhere.[116] It represents the first comprehensive assessment of the level of POS-focused work that is being planned or undertaken at the state-level in the US. The data were collected via telephone survey with state-level tobacco control program officers. Wave 1 data collection took place in September 2012 and Wave 2 was conducted in September 2014, to yield two waves of data for each participating state. As shown in Table 5.1, the POS Index tracks current milestones for each of 25 unique policy solutions, in 6 umbrella domains, to compute a continuous score ranging from 0 to 100, with 100 meaning that all 25 policies have been implemented.[27] Policy options and domains were informed by discussions with POS policy experts and members of a National Tobacco POS Consortium comprised of state and local tobacco control program managers, researchers and attorneys. For each specific policy option in each domain, states are coded "0" for no formal activities, "1" for planning/advocating, "2" for policy proposed, "3" for policy enacted, or "4" for policy implemented. Scores on each policy option are

summed to create the POS Policy Index (POS Index) score, providing an opportunity to link policy progression milestones with media content.

Data on independent variables, the volume and characteristics (frames present, sources present, evidence used, degree of localization, and slant) of newspaper articles, were collected as part of larger descriptive analyses of POS-tobacco-control-related news content.[117] Newspaper content published in 268 state-level newspapers between September 1, 2012 and August 31, 2014 was used in the analysis, dates congruent with POS Index data collection at Time 1 and Time 2. Articles were downloaded from America's News and ProQuest databases via search terms ("tobacco" OR "smok!" OR "cigar!" or "e-cigar!" or "electronic cigarette") [in the headline] AND ("sale!" OR "market!" OR "advertis!" OR "store!" OR "point! of sale" OR "point-of-sale" OR "retail!" OR "point! of purchase" OR "point-of-purchase" OR "powerwall" OR "supermarket!" OR "grocery" OR "outlet!" OR "pharmac!") [in 'all text']. For each state within the time period of interest (September 1, 2012 to August 31, 2014), we calculated the total volume of POS articles published, and the number of news articles with each primary predictor of interest.

A set of state-level factors were retrieved from national public health agency tracking systems and examined as confounders in this analysis: population size,[118] the amount of tobacco control program spending,[119] a measure of the strength of the state-level clean-indoor air law (percent of population exposed to second hand smoke overall),[120] and the amount of the state excise tax in US dollars.[121] These factors are derived from national expectations for tobacco control programming that focus on strong smoke-free air laws, high excise taxes and secure program funding as metrics of success to achieve *prior* to focusing heavily on POS activity.[5] Pounds of tobacco grown[122] and adult smoking

prevalence[121] were considered based on past research of rural print media and potential relationships to the slant of tobacco news articles.[75]

5.2.3 Data Analysis

Univariate statistics including the Shapiro-Wald test for normality were calculated for the primary dependent variable of interest, Time 2 POS Index, and each independent news content predictor and policy context control variable. A Pearson correlation matrix was generated to identify all significant bivariate associations at the two-tailed level of $p < .05$.

We tested the appropriateness of both Poisson and negative binomial regression distributions, given the count nature of the POS Index scores. A series of multiple linear regression (MLR) analyses with multiple independent variables were conducted to explain the unique effect of the set of newspaper content factors on the outcome while partialing out (controlling for) the Time 1 POS Index and state-level covariates [123]. Multicollinearity diagnostics, tolerance and Variance Inflation Factor (VIF), were used to identify the most highly correlated news content predictors. Highly multicollinear variables (VIF > 10.0) were iteratively trimmed to create a more parsimonious regression model. All analyses were performed using IBM SPSS Statistics Version 23 (Armonk, NY).

5.3 Results

Gains in POS policy implementation were low in the two-year study period. The mean POS Index score at Time 1 in 2012 was 8.2 (SD 6.5) and at Time 2 in 2014 was 11.0 (SD 7.9) (Table 5.2). The amount of published POS-related news content was also low in the two-year study period. Only 42 states had one or more state-level POS news articles published in the study time period; therefore, 8 states with no media reporting on POS were removed from the longitudinal analysis. The mean number of POS-related news articles published in a state was 6.6 (SD 6.5), or about one article every 4 months, which is low. The mean number of POS-related articles per state that included measured news characteristics ranged from 2.7 articles with both a local angle and quote present (SD 3.9) to 5.1 articles with any data or narrative evidence present (SD 4.2).

Some significant bivariate relationships were identified between POS-news content predictors and Time 2 POS Index score (see Table 5.3). The number of articles with any public health source present and with both a local quote and local angle present were significantly associated with Time 2 POS Index score at the $p < .01$ level. Total volume of POS content, measured as the number of articles published, and the number of articles with a pro-tobacco control slant present were significantly associated with Time 2 POS Index score at the $p < .05$ level. The policy context control variables, excise tax and adult smoking prevalence, were significantly associated with Time 2 POS Index at the $p < .01$ level.

The Shapiro-Wilk test for normality of the Time 2 POS Index (DV) was marginally significant ($W=.945$, df $= 42$, p $= .042$), indicating some evidence that the data tested are not normally distributed. Therefore, goodness of fit tests for both Poisson distribution and negative binomial distribution were explored but did not fit the data, nor the small sample size.[123] Ultimately, multiple linear regression was employed because it is the most robust

to detect significant relationships; of note, the p-values associated with beta coefficients in each of the Poisson, negative binomial, and linear regression models were nearly identical. A preliminary hierarchical linear regression model with three sets (POS Index at Time 1; policy context covariates; POS news content predictors) was not interpretable due to high multicollinearity in the POS-news content predictors. Therefore, the POS-news content predictors were respecified in the model, according to the strength of bivariate associations and tests for multicollinearity: frame and evidence structure were removed because they were not associated with the outcome, and volume was removed because it was the most significantly multicollinear.

Results of the final respecified model are presented in Table 5.4. Our findings do not indicate a significant relationship between state-level POS-related news content and state-level POS policy progression, in the two-year study period, while controlling for both policy environmental context covariates and Time 1 POS Index. The first step of the model included only the three news content predictors that remained after model trimming: (1) any public health source present, (2) both local quote and angle present, and (3) pro-tobacco control slant present. Model fit was significantly better fit than an intercept only model (F = 3.22, p < .05) and the news content predictors explained 20% of the variance (R^2 = .20) in the Time 2 POS Index score, however the beta coefficients associated with each predictor were not significantly different than zero.

The second step of the model included two policy context variables: (1) excise tax, and (2) adult smoking prevalence. At the second step, model fit was again better than the intercept-only model (F=4.55, p < .01), and the predictors explained 39% of the variance (R^2 = .39; ΔR^2 .19). In the final step of the model we added Time 1 POS Index; together, our measured variables explained 56% of the variance in the Time 2 POS Index (R^2 = .56; F = 6.86, p < .001; ΔR^2 .17).

Table 5.2 Univariate Statistics for States (N=42) and State-Level Variables Included in the Longitudinal Analysis, Including POS Index at Time 1, Time 2, and Between the Two Time Points; Policy Environment Contextual Factors; and POS-News Content Characteristics.

	Mean	(SD)	Min	Max
State POS Index				
Time 1 --2012	8.23	(6.49)	0	25
Time 2 -- 2014	11.02	(7.94)	0	31
Change from Time 1 to Time 2 (2012-2014)	3.2	(5.92)	-9.0	18.0
State policy environment contextual covariates, 2012				
Population (Millions)	7.06	(7.33)	0.63	38.04
Tobacco control funding ($Millions)	13.79	(16.70)	1.37	85.02
Amount of excise tax ($)	1.46	(1.01)	0.17	4.35
Adult smoking prevalence (%)	19.85	(3.88)	10.6	28.3
Secondhand smoke exposure (%)	47.20	(5.53)	39.1	67.4
Pounds of tobacco grown (Millions)	18.21	(66.32)	0	391.71
State POS-news content characteristics, 2012-2014 [a]				
Total POS-news volume	6.64	(6.51)	1	36
Number of POS-news articles with:				
Any data or narrative evidence present	5.10	(4.22)	0	23
Pro-tobacco control slant present	4.31	(4.52)	0	21
Health frame present	4.21	(3.25)	0	15
Any public health source present	3.05	(3.67)	0	18
Both local angle & quote present	2.67	(3.91)	0	18

[a] Number of POS-related news articles, letters to the editor, or opinion/editorials published between September 1, 2012 and August 31, 2014.

Table 5.3 Correlations Between Time 1 POS Policy Index, Policy Environment Contextual Factors, POS-Tobacco-Related Newspaper Content Characteristics (2012-2014) and Time 2 POS Policy Index Among 42 US States.

	Prevalence (n,%)	Pearson Correlation	Sig. (*p*) (2-tailed)
Point of Sale Policy Index			
2012 (Time 1)	--	0.71**	0.000
Policy environment contextual factors			
Population	--	0.18	0.256
Tobacco control funding	--	0.27*	0.086
Amount of excise tax	--	0.47**	0.002
Adult smoking prevalence	--	-0.50**	0.001
Secondhand smoke exposure	--	-0.22	0.162
Pounds of tobacco grown	--	-0.15	0.352
POS-related newspaper content characteristics, 2012-2014 [a]			
Volume	279, 100.0%	0.35*	0.024
Health frame present	177, 63.4%	0.17	0.282
Any public health source present	128, 45.9%	0.44**	0.003
Any data or narrative evidence present	214, 76.7%	0.29	0.065
Both local quote and angle present	112, 40.1%	0.41**	0.007
Pro-tobacco control slant present	181, 64.9%	0.33*	0.030

** *p* ≤ .01 (2-tailed)

* *p* ≤ .05 (2-tailed)

[a] Number of POS-related news articles, letters to the editor, or opinion/editorials published between September 1, 2012 and August 31, 2014.

Table 5.4 Hierarchical Multiple Linear Regression of POS-News Content Characteristics (2012-2014) and Time 2 (2014) POS Index Score Among 42 US States.

Model	Independent variable	Unstandardized coefficient		Standardized coefficient	p	F	R^2	ΔR^2
		B	SE	β				
1	--	--	--	--	--	3.22*	.20	.20
	Constant	8.50	1.65	--	.000			
	Pro-tobacco-control slant	-.30	.51	-.17	.563			
	Any public health source present	1.12	.86	.52	.205			
	Both local angle and quote present	.16	.81	.08	.847			
2	--	--	--	--	--	4.55**	.39	.19
	Constant	18.25	7.99	--	.028			
	Pro-tobacco-control slant	-.34	.46	-.19	.474			
	Any public health source present	1.35	.72	.63	.093			
	Both local angle and quote present	-.43	.74	-.21	.571			
	Excise tax	1.98	.13	.25	.127			
	Adult smoking prevalence	-.59	.34	-.29	.089			
3	--	--	--	--	--	6.86***	.56	.17
	Constant	8.50	7.63	--	.274			
	Pro-tobacco-control slant	-.33	.41	-.19	.435			
	Any public health source present	.99	.70	.46	.171			
	Both local angle and quote present	-.38	.67	-.19	.579			
	Excise tax	.92	1.17	.12	.435			
	Adult smoking prevalence	-.24	.31	-.12	.448			
	Time 1 POS Index	.65	.19	.54	.001			

SHS, Secondhand smoke;
B, unstandardized beta; SE, standard error; β, standardized beta; p, significance level; F, F statistic; R^2, variance; ΔR^2, change in variance.
*** p < 0.001; ** p <.01; * p < .05

5.4 Discussion

Results of this study indicate that characteristics of POS-news content may be a marker for POS policy progression, given their relationship to the Time 2 POS Index in bivariate correlational analyses. POS-news related total volume, and the presence of public health sources, both a local angle and quote, and pro-tobacco control slant in POS-news articles were positively and significantly associated with POS-policy progression in this study. In multivariate analyses, however, the significant bivariate relationships did not hold. After parceling out the effects of both the Time 1 POS Index score, and policy environment variables, none of the news content predictors remained significantly related to the primary outcome of interest, Time 2 POS Index.

Certainly, it is possible that no true relationship exists between POS-news content and POS policy progression, as measured within this sample of state-level newspapers, via the state-level POS Index, and during the study period. However, our methods are strong. We included a robust sample of 268 newspapers, each the highest circulating in their respective state. The mean number of newspapers sampled for each state was 5.36 (Range = 1 in Delaware to 24 in California) and mean cumulative circulation reach was 5.86% of the state-level population (Range = 1.39% in Delaware to 12.6% in Hawaii),[117] as has been recommended for meaningful news content analysis.[11] Our POS Index measure was also comprehensive, as we assessed, from knowledgeable tobacco control program leaders, their progress made on 25 unique POS policies using a 4-point implementation scale.[116] Lastly, the 24-month study period was chosen carefully: we gathered news content around POS Index data collection waves. Given these strengths, our findings offer an opportunity to think critically about our hypothesized relationships between POS news content and POS policy progression, and about the measures and methods required to detect them.

One limitation could be with our data collection period. POS tobacco control policy work is a new area, and the dose of POS-news content retrieved in this newspaper sample and time period was only one article every four months, per state (Mean = 6.64 articles per 24-month period). Given the low number of cases (42 states), and few POS- news articles, it may be that sufficient media coverage has not yet been generated to impact POS policy progression, or that policy progression cannot be properly captured within a 24-month time period. Future waves of data collection (in preparation) may tell a different story.

Another issue could involve our unit of analysis. We sampled newspapers based on state-level circulation and measured state-level POS policy progression over time. Policy progress over time is known to begin at the local level and ultimately filter up to the state level.[43] Given the emergence of POS work, it is possible that policies are progressing at the level of cities, counties, or community health boards, as in the case of more than 100 local Massachusetts communities with tobacco-free pharmacy ordinances,[124] rather than at the state level. Future research exploring the link between news content and policy progression may need to both sample local, low-circulation community newspapers or other hyper local media, and measure local-level policy progression.

In addition, despite our testing for alternate distributions, a linear regression model controlling for unidirectional policy progression may not be most appropriate to characterize the relationships under study. To address this concern, we conducted a series of additional analyses to investigate whether or not the characteristics of news content varied by states with different levels of policy progression. First, we calculated a change score for each state, defined as the difference in POS Index between Time 1 and Time 2 (see Table 5.2). The mean change was 3.2 (SD 5.0; Range -9.0 to 18.0); the distribution was such that 20% of

states had a lower score, 20% of states stayed the same, and 60% of states had a higher POS Index score at Time 2. A comparison of POS news content variable means across states with varying change scores did not yield any significant differences. In other words, level of POS policy progression was not related to mean news article volume, or number of articles with public health sources present, with both local quote and local angle, with pro-tobacco control slant, with health frame present, nor with any data or narrative evidence present. Second, we did an analysis to see check for differences in news content based on whether states had crossed key policy implementation tipping points between Time 1 and Time 2, in response to the concern that the same amount of effort or time may not be required to obtain each incremental score in the scale. For example, it is easier to get a "1" on the scale for planning/advocating, than it is to get a "2" for policy proposed, "3" for policy enacted, or "4" for policy implemented. We calculated a dichotomous variable, an "enactment threshold", to identify states who had moved from a score of either "1" or "2" (planning/advocating or proposed) at Time 1, to either a "3" or "4" (enacted or implemented) at Time 2, on any of the 25 policy options. A total of 16 states crossed the enactment threshold between Time 1 and Time 2, however 3 states were removed because no POS news content was present between Time 1 and Time 2, leaving 13 states for the analysis. We examined the differences in news content characteristics between states that crossed the enactment threshold and states that did not, and again, no significant differences were found in POS news content. Finally, we transposed the analysis to identify if news volume was related to mean POS change from Time 1 to Time 2; again, no significant differences in POS change score were found in states with high POS news volume compared to states with low volume. Our additional analyses speak to the strength of our POS Index, at minimum, as a

strong measure of implementation completion, with a higher score indicating a greater number of policies that have been implemented. Whereas we may not necessarily be best capturing the nuance in the forward or backward stages of policy progression, as our science on the implementation of policy interventions improves, and the policy change process becomes more concrete (akin to an individual-level curriculum for behavior change, for example), policy implementation milestones could be revised based on discrete increments.

Given that the ultimate goal of many tobacco control programs is to use media advocacy to build support for and implement policies that improve health, our research question, whether media content can significantly influence policy progression, remains an important one. The potential findings have important implications for public health practice and the use of media advocacy as a tactic for building community support. Future work should continue to carefully measure policy progression and the unique characteristics of mass or other online, non-traditional or emerging media content that may be most associated with change over time.

CHAPTER 6 MANUSCRIPT 3 THE PERSISTENCE OF INDIVIDUAL PERSPECTIVES ON HEALTH PROMOTION POLICY V. THE INFLUENCE OF NEWS STORIES: EXPERIMENTAL EVIDENCE ON PUBLIC SUPPORT FOR 22 POINT-OF-SALE TOBACCO CONTROL POLICIES

6.1 Introduction

State- and local-level policy interventions affecting the sales and marketing of

tobacco products at the point of sale (POS), also called the retail environment, are a growing

area of focus within comprehensive tobacco control programming.[104] Examples of

promising POS tobacco control policies are the implementation of strong tobacco retailer

licensing regulations,[125] the reduction in number and density of tobacco outlets,[26] and

the prohibition of tobacco sales in pharmacies or stores with a pharmacy counter.[126] Such

policy changes to promote health represent a general shift towards innovative, broader

reaching, and more sustainable public health solutions to reduce the morbidity and mortality

related to tobacco use.[3] POS policies are considered to be endgame approaches that move

beyond tobacco control towards a tobacco-free future.[127] However, POS policies must be

adopted within complex, multi-stakeholder community systems;[21] and, effective

implementation supports are required in order for practitioners to create the optimal

conditions for policy adoption.

Political scientist John Kingdon theorized that policies are most likely to be adopted

when three streams come together to form a "window of opportunity": a problem, a policy

solution, and political support. In other words, the likelihood of policy adoption is higher

when the public and policymakers are both aware of a problem and support a specific

solution and communication strategies are an essential part of that awareness.[43] Media

advocacy through press releases, conferences, local events and other earned media activities remains a recommended health communication strategy within the CDC's 2014 Best Practices for Comprehensive Tobacco Control Programs.[2] Tobacco control and prevention advocates routinely partner with media outlets to offer content within news stories.[4] The goal of media advocacy is to shape media content to either change or reinforce aggregate public opinion that is supportive for tobacco control and prevention policies[4, 14] -- essentially, to create Kingdon's window of opportunity.

Since Menashe and Siegel's seminal tobacco news framing research published in 1998, researchers have been describing the presence of frames (or arguments, or themes),[22] sources,[77] and other characteristics of tobacco-related news articles, opinion pieces, and letters to the editor (LTE).[62] Monitoring tobacco-related news media content is one step towards identifying areas where media advocacy can be most beneficial for targeted change,[105] however, studies specifically describing POS news coverage are limited. According to extant literature, the most common frame present in US news coverage of POS policies from 2007 to 2014 was regulation, (defined as having to do with government policies and laws), and that government, law enforcement and tobacco retailers were the most frequent sources quoted in POS-related news.[117] A review of all POS-related news articles from 2007-2014 found that fewer than half (42%) included a local quote or local angle, and half (49%) had a pro-tobacco control slant.[117] Beyond understanding characteristics of POS-related news content, very little is known about the relationship between news content and public support for POS policies. Because of this gap in the literature, public health practitioners who are working on POS policy change issues do not

have a successful communication blueprint to guide their media advocacy efforts Further, communication tools are an acknowledged need in the field.[5, 21]

The purpose of this study is to identify message factors within news articles that may be associated with POS support among members of the general public, while controlling for individual-level factors. Two news message factors that are modifiable within news content, and related to public support for an issue, are frame and level of localization. A frame is the way an issue is described, or packaged, as it is being communicated. Frames define issues to "resonate with core values and assumptions" (p. 56),[53] and can affect the extent to which a message receiver supports – or does not support – the issue.[52] Tobacco control framing studies are traditionally retrospective content analyses of newspaper coverage that document the kinds of frames used over time.[22, 23] Further, whereas the use of local sources and a local story angle has been hypothesized to influence public and policy maker support of an issue,[50, 58] (likely by increasing the perceived relevance of an issue), to our knowledge, there are no known tobacco control studies that examine the use of frames or levels of localization to prospectively communicate with the voting public.

Early analyses of tobacco related news content identified and measured the prevalence of nearly a dozen tobacco control and tobacco interest (pro-industry) frames[22, 23] and found the most prominent frames in tobacco-related news were about economics and health. Health is the traditional frame of tobacco control advocates[22] speaking to the health effects of smoking among youth and adults,[23] while the economics frame speaks to dollars and cents, health care and lost productivity costs. Economic frames are often used to support the tobacco industry and tobacco retailers, and health frames are used to support public health efforts.[57, 66, 67] With regard to POS-related news content, previous research has

found frames were significantly associated with the slant of the news article, such that articles with a health frame were more likely to have a pro-tobacco control slant while articles with a regulation or rights frame were more likely to have an anti-tobacco control slant.[117] Two additional frames are important to test given their prominence in POS-specific coverage: regulation and rights. The regulation frame typically incorporates government rules and the creation of new policies.[117] The rights frame has been used traditionally by the tobacco industry to appeal to freedom, the American dream, earning a living and selling a legal product. Another POS-specific study, by Myers, et al., indicated that the presence of news articles in state-level newspapers that include both a local source and local angle was significantly related to the amount of state-level POS policy implementation in bivariate analyses.[128]

The purpose of this study is to understand the influence of news message factors including (a) frame (health, economics, regulation, rights) and (b) level of localization (local or not local) on POS policy support among a convenience sample of US adults. The findings are expected to provide insight into how different news characterizations of the problem of tobacco in the retail setting are associated with varying degrees of public support for POS policy solutions.

6.2 Methods

6.2.1 News Article Manipulations

We conducted an experiment using a questionnaire developed by the investigators and administered on the Internet. Questionnaire respondents were randomized to receive one of eight mock news articles created by the investigators and written to represent variation according to two factors, (1) frame and (2) level of localization. Four frame categories were used: health, economic, regulation and rights. Two levels of localization were used: local and

not local. Local messages were tailored to the respondent based on their response to a question about which US state they lived. Non-local messages were not tailored but instead applied to the US as a whole. In addition, the level of localization referred to the types of sources present in the news article, such that the quotes in local articles were attributed to local people, and the same quotes in non-local stories were attributed to national leaders or agency spokespeople. All news messages were written to be "fair and balanced" according to journalistic principles, meaning the slant was mixed – neither fully for nor against tobacco control efforts. The headline of mock article matched the manipulated factors and article length remained constant. Figure 6.1 presents an example of the non-localized news article with a health frame.

CONGRESS DEBATES HEALTH PROGRAM TO LICENSE TOBACCO STORES

Congress is considering a program that would require all stores that sell tobacco to purchase a yearly license. A licensing program would allow health officials to monitor the sales of tobacco products in every location where it is sold. Licenses would also be used to limit the number of stores that can sell tobacco, or could make it against the law to sell tobacco near schools or inside a pharmacy.

Smoking is a number one cause of preventable death. Each year in the US, smoking kills 480,000 people. Licensing stores who sell tobacco is expected to improve public health by making it harder for children to get cigarettes and easier for adults to quit.
Young people who see tobacco marketing and product displays in stores are more likely to start smoking. Adults who live close to a store that sells tobacco are less likely to quit smoking, and stay quit, over the long term.

The US Surgeon General, Dr. Vivek Murthy, testified before Congress about the new tobacco license program. "This license program will save lives by helping people quit smoking. We can also prevent our kids from ever starting to use tobacco. In some neighborhoods, there are tobacco outlets on every corner, by every school. How can children be healthy in a place like that? A license system can fix the problem."

Todd Meriwether serves as President of the National Association of Convenience Stores and also testified before Congress. "As a business person, I believe in a healthy communities, but I do not think this program will have a big enough health impact."

Figure 6.1 Sample Mock News Story, with Health Frame and No Localization.

6.2.2 POS Policy Support Measures

POS policy support was measured with an index of 22 items adapted from prior surveys: (1) POS Community Support Survey, St. Louis County, Missouri Communities Putting Prevention to Work (CPPW) initiative,[129] (2) the Survey of California Rural and Small Town Voters about Local Tobacco Retailer Licensing Ordinances,[130] (3) the New York City Tobacco Behavior and Public Opinion Survey,[131] and (4) the Smoking Policy Inventory/Index.[132-134] A menu of POS policy solutions published in *Point-of-Sale: A Tobacco Control Guide*[107] also heavily informed the items. For each item, respondents indicated whether they strongly opposed to strongly supported POS policies on a scale of 1 to 4, where 1 = strongly opposed and 4 = strongly supported. Dichotomized scores on each of

the 22 POS policy provisions were computed (0 = strongly opposed or opposed, 1 = supported or strongly supported), and an index of POS support (range 0 to 22) was created, where 0 represents the lowest amount of support and 22 represents the highest amount of support.

6.2.3 Individual-level and Household Measures

Demographic variables including age, gender, race/ethnicity, household income, affiliation with a convenience store, and smoking status were measured based on items in the POS Community Survey.[129] Smoking status was measured with answers to the questions "Have you smoked at least 100 cigarettes in your entire life?" and "Do you now smoke cigarettes every day, some days or not at all?".[135] Use of other tobacco product groups (e.g. hookah or water pipe; cigar, cigarillo or little cigar; smokeless tobacco, chew, dip, snuff or SNUS; electronic cigarettes or vaping devices) was measured with the question "Do you now use (*tobacco product group*) every day, some days or not at all?". Political affiliation and voting history were measured with items adapted from a cigarette tax messaging experiment,[136] and informed by work on the role of political ideology on support for tobacco control.[137] One item about trust in government was adapted from the Gallup organization.[138]

6.2.4 Reliability and Validity

A series of steps were taken to ensure that the news article manipulations were true to the factors and levels of news characteristics that were intended for the study. First, as a test of face validity, a committee of academic experts and one outside communication research expert reviewed the messages. Second, the messages were iteratively refined until they were deemed ready for pilot testing. Third, prior to launching the main questionnaire, a pilot study with 40 respondents was conducted via Amazon Mechanical Turk (MTurk) to check

perceptions of each experimental manipulation and to test the survey flow. Pilot responses were not analyzed with the main questionnaire. Finally, for consistency, manipulation check items were embedded in the main questionnaire to check for respondents' attention paid to the task.

6.2.5 Sample

A convenience sample of voting, male and female US adults (aged $\geq$ 18) was recruited to participate in the study. MTurk was used both to recruit the sample and as a portal for data collection. MTurk is an online worker platform launched in 2005 that has been used to reliably recruit respondents and conduct experimental social science research studies.[139-142] In order to recruit respondents, we registered as an employer, or 'Requester', and created a Human Intelligence Tasks (HIT), which included a brief explanation of and link to the questionnaire. MTurk then advertised the HIT and Turkers could self-select into the respondent pool. The MTurk system allowed study data to be collected quickly, via an external software application, Qualtrics.[140]

Two manipulation checks were included for each respondent following randomized exposure to one of eight manipulated news messages. Manipulation checks were done in an attempt to make certain that the respondent was paying adequate attention to their assigned task and that the manipulation to the story intended was obvious to the respondent.[143, 144] In our case, respondents were asked to indicate whether the news story was local or not local to the state where they live and to identify the frame that was being used in the article (health, economic, rights or regulation). Respondents who failed the localization manipulation check were screened out from further questionnaire items. Other exclusion criteria included: 1) being under 18 years of age; 2) never having voted in an election; 3) if they had a relationship with either a tobacco retailer or the tobacco industry; or 4) did not live

in the United States. Never voting in an election was seen as an indicator of lack of interest in policy-related issues. Workers who satisfactorily completed the HIT were paid $2.00 for their time.

6.2.6 Analyses

A one-way ANOVA was conducted to test for differences in mean POS support (the dependent variable) between experimental message groups, without controlling for individual-level factors. Analyses of covariance (ANCOVA) was used to examine main and interaction effects of the experimental conditions, while controlling for the effects of individual co-variates.[123, 145]

6.3 Results

6.3.1 Respondent Sample

Of the 1,193 MTurk workers who began the HIT, inclusion-screening criteria removed 154: 1 person who was under 18 years of age; 109 people who had never voted in an election; 32 people who had a relationship with either a tobacco retailer or the tobacco industry; and 12 people who did not live in a US state. Respondents were removed if they failed the manipulation check on the degree of localization variable (n=174), or if they had incomplete data on any of the 22 policy support items (n=63). Another 44 people dropped out of the questionnaire prior to completion, and 56 cases were removed because they came from duplicate IP addresses (suggesting that the same person completed the survey several times), leaving 702 respondents in the analysis dataset (58.84% of original sample) (see Figure 6.2). Table 1 shows the characteristics of questionnaire respondents (n=702). Respondents were likely to be female, between 18-34, white, non-tobacco users, identify with the Democrat party or Democrat-leaning, have little trust in government and earn less than $50,000 annually.
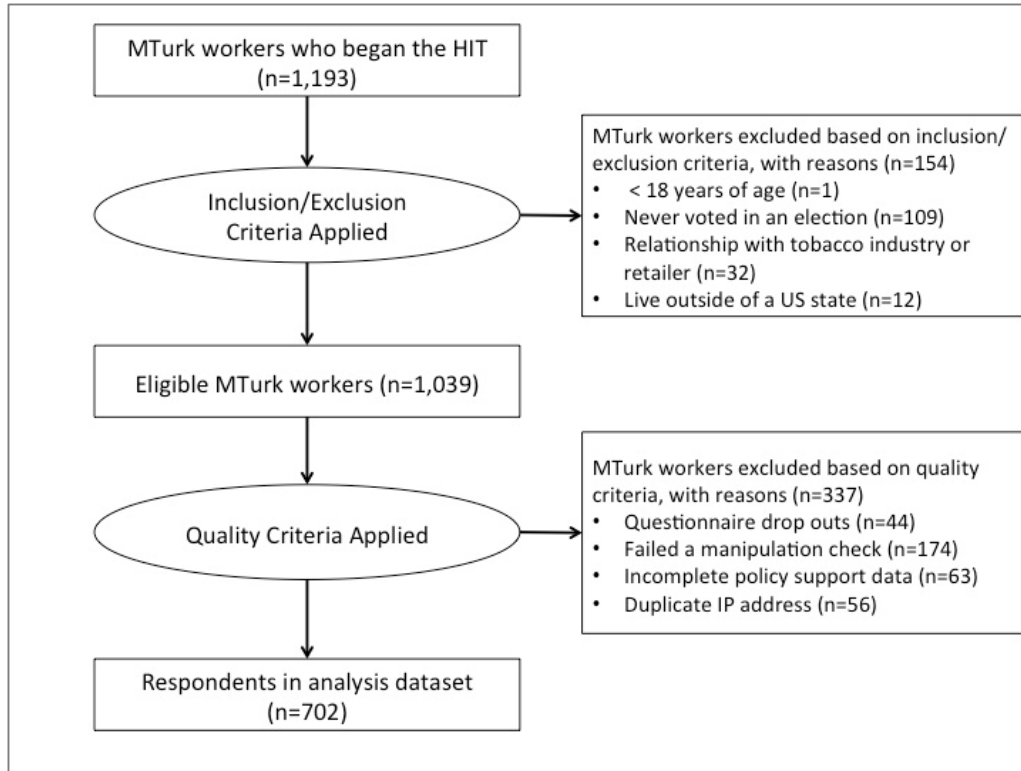
Figure 6.2 Flow Diagram of Questionnaire Respondents.

Table 6.1 Mechanical Turk Respondent Characteristics (n=702).

	n	Percent (%)
Respondent		
Gender		
Male	328	46.9
Female	372	53.1
Age		
18-34	415	59.1
≥35	287	40.9
Race/Ethnicity		
White	560	79.8
Non-White	142	20.0
Any current tobacco use*		
No	462	65.8
Yes	240	34.2
Political party or affiliation		
Republican or Republican-leaning	156	22.2
Independent	144	20.5
Democrat or Democrat-leaning	402	57.3
Trust in government, in general		
A great deal or a fair amount	268	38.2
Not very much or none at all	427	60.8
Household		
Annual HH Income		
<$50,000	399	56.8
$50,000-$99,999	234	33.3
≥$100,000	69	9.8

*Tobacco use includes cigarettes, other tobacco products, or e-cigarettes/electronic nicotine delivery systems.

6.3.2 Policy Support Across Groups

Table 2 shows the percent of respondents that supported or strongly supported each of the 22 POS policy provisions, across all news article message manipulations. Policies requiring a tobacco retailer license, enforcing provisions of the licenses, and policies protecting children from the dangers of tobacco marketing received the highest levels of support. Policies restricting menthol and candy or fruit flavors, raising the price or tobacco products through restrictions on price discounts, package size and coupon redemption, and some policies restricting the locations of tobacco sales received the lowest levels of support. The mean POS support score was 12.88 (SD 6.67), with range 0 to 22.

Table 6.2 Percent of Respondents who Support or Strongly Support POS Policy Options.

POS Policy Option	Support or Strongly Support, %
Banning menthol flavored tobacco products	30.4
Requiring that tobacco be sold only in stores that sell tobacco products and nothing else	33.2
Requiring minimum package sizes for all tobacco products, e.g., a 20-pack of cigarettes	37.6
Banning price discounts such as 2-for-1 deals or $1.00 off	41.2
Banning the use of coupons	41.4
Restricting tobacco retailers in locations where there are already many other tobacco retailers	46.6
Banning candy or fruit flavored tobacco products	43.3
Establishing minimum price laws or "floor" prices on each type of tobacco product	52.9
Restricting the number of products of each type for display (e.g. one each)	51.8
Restricting the total amount of square footage dedicated to displaying tobacco products	57.9
Requiring retailers to store products out of view, (e.g., under counter, behind opaque shelving)	57.8
Raising the minimum age to purchase tobacco products from 18 to 21	60.3
Limiting or capping the total number of tobacco retail licenses in a given area	58.4
Prohibiting pharmacies from selling tobacco products	60.0
Limiting the placement of ads only to certain areas within the store (e.g. only at cash register)	72.1
Requiring graphic, or picture-based, health warnings at the point of sale	68.9
Limiting the placement of ads outside the store such as in the parking lot or on the building	72.4
Requiring store owners to pay for a license to sell tobacco products	76.2
Prohibiting tobacco sales near where youth frequent, such as stores near schools or parks	74.2
Requiring that the clerk assist with all tobacco purchases (e.g., no self-service)	80.6
Taking away (revoking) the license of store owners who violate license rules	85.3
Prohibiting ads within 1000 feet (~3 blocks) of where youth frequent	85.7

6.3.3 Policy Support Between Groups

Table 3 presents the results of one-way ANOVA tests for differences in mean POS support between experimental groups and sample characteristics, without controlling for covariates. No significant main effects of frame ($F_{(3, 696)} = 0.511$, $p = 0.675$), or level of localization ($F_{(1, 696)} = 0.394$, $p = 0.530$) were identified meaning that neither the frame presented nor the article level of localization (local versus not) showed any relationship with the respondents' support for policy. However, significant between-groups differences in mean POS support were found by age, gender, race/ethnicity, current tobacco use, political affiliation, and trust in government. Stronger support for policy options were seen for: females as compared to males; individuals age 18-34 as compared to older individuals; non-whites as compared to whites; non-tobacco users as compared to tobacco users; those identifying as Democrat or Democrat-leaning as compared to other political affiliations; and those who have a great deal or fair amount of trust in the government.

Table 6.3 Between-Groups Support for POS Policies by News Article Manipulation, Respondent and Household Characteristics, Without Controlling for Covariates.

	Mean[+] (SD)	Between-groups Analysis of Variance			
		df	F	p	R²
News Article Manipulation					
Frame		3	0.968	0.407	0.004
Health	13.47 (6.79)				
Economic	12.39 (6.76)				
Regulation	12.57 (6.80)				
Rights	13.08 (6.27)				
Level of localization		1	0.141	0.707	0.000
Local (to respondent state)	12.97 (6.60)				
Not local (US nation)	12.78 (6.75)				
Respondent					
Gender		1	11.61	0.001**	0.016
Female	13.81 (6.59)				
Male	12.10 (6.63)				
Age		1	6.17	0.013**	0.009
18-34	13.42 (6.52)				
≥35	12.15 (6.79)				
Race/Ethnicity		1	6.552	0.011*	0.009
White	12.56 (6.73)				
Non-White	14.15 (6.27)				
Any current tobacco use		1	72.35	0.000***	0.094
No	14.35 (6.51)				
Yes	10.05 (6.05)				
Political party or affiliation		2	18.28	0.000***	0.050
Republican or Republican-leaning	11.96 (7.54)				
Independent	10.49				

	(6.62)				
Democrat or Democrat-leaning	14.09				
	(6.03)				
Trust in government, in general		2	17.97	0.000***	0.049
A great deal or a fair amount	14.75				
	(5.69)				
Not very much or none at all	11.74				
	(6.92)				
No opinion	11.00				
	(9.88)				
Household					
Annual HH Income		2	1.74	0.176	0.005
<$50,000	12.61				
	(6.55)				
$50,000-$99,999	13.53				
	(6.65)				
≥$100,000	12.23				
	(7.30)				

*** p < .001; ** p < .01; * p < .05

+Mean POS support, measured as an index with range of 0 to 22 where 0 = opposed all policies tested, and 22 = support all policies tested.

Table 4 presents the results of a single Analysis of Covariance (ANCOVA) model using a general linear model (GLM), which adjusts for individual-level factors, message factors (frame and level of localization), and the interaction between them. In the full model, no significant effects of frame ($F_{(3, 680)} = 0.79$, $p = 0.50$), or level of localization ($F_{(1, 680)} = 0.03$, $p = 0.86$) were identified. The interaction between frame and level of localization was not significant ($F_{(3, 680)} = 1.04$, $p = 0.37$). Rather, differences in POS support by gender, age, tobacco use status, political affiliation and trust in government remained significant. Differences in POS support by race/ethnicity were no longer significant. Additional analyses to test for significant main or interactive effects of frame and localization on non-smokers with high trust in government also produced null results.

Table 6.4 Between-Groups Support for POS Policies, Adjusted for Covariates.

	Between-groups Analysis of Covariance		
	df	*F*	*Sig.*
Corrected Model	13	12.10	0.000***
Intercept	1	123.92	0.000***
Gender	1	9.28	0.002**
Age	1	4.06	0.044*
Race/Ethnicity	1	3.090	0.079
Any current tobacco use	1	72.21	0.000***
Political party or affiliation	1	9.95	0.002**
Trust in government	1	29.59	0.000***
Frame	3	1.42	0.237
Local	1	0.02	0.899
Frame*Local	3	1.40	0.241
Error	680		
R Squared = 0.188 (Adjusted R Squared = 0.172)			

*** $p < .001$; ** $p < .01$; * $p < .05$

6.4 Discussion

This is the first study to examine the relationship between POS-tobacco-related news content and public support for POS tobacco control policy interventions. Our findings indicate that exposure to a single news message was not related to POS policy support. Rather, underlying characteristics of individuals were much more likely to predict support for policy. In the full ANCOVA model, adjusting for all measured variables in the study, gender, age, any current tobacco use, political party and trust in government were the factors significantly associated with POS policy support.

Our findings are a contrast to decades of media effects research on the impact of message frames.[146] Several explanations exist for this difference. First, exposure mediates the relationship between news media content and what the public is thinking about,[12] and the exposure here was both minimal and artificial. It may have been unreasonable to expect significant changes in policy support based on a one-shot exposure to a typical news

message. The influence of the mass media is not likely experienced through a single exposure to a message but rather through a cumulative effect over time; indeed, volume of coverage serves as another mediator between the media agenda and the public agenda.[147] Given the current splintered media environment with mass, social, and other targeted channels (e.g., cable television or internet blogs), choice of media may be based on individual-level factors such as political party or trust in government, in which case media exposure may simply reinforce existing attitudes and opinions.

Another explanation is that the distilled news frames used in this experiment – health, economics, regulation and rights – and levels of localization are simply not compelling when presented in a fair and balanced (neutral slant) message. It is important to note that the purpose of this study was to examine levels of POS support following exposure to news messages that were manipulated to reflect the current nature of POS-related content; it was not our aim to craft messages that compel POS support. Future research should manipulate news articles or other mass communication messages such as letters to the editor or opinion pieces in additional ways, for example, 1) to test the impact of pro- versus anti-tobacco control slants, rather than neutral slants, or 2) by revisiting harder-hitting anti-tobacco industry frames such as killer/corporate liability or deceit/manipulation that were present during passage of the Master Settlement Agreement.[23] Caution must be taken, though, because hard-hitting messages such as graphic warning labels on cigarette packages that are used to prompt individual-level behavior change among smokers, may not be analogue to prompting support for broad reaching societal-level policies among members of the general public. We must continue to learn more about communication strategies that have the potential to prompt policy, systems and environmental change.

Our study may be limited because of the study sample and the one-shot experimental design. Our sample was a convenience sample from an online source, MTurk. Recent studies have indicated that MTurk workers, "Turkers", are more liberal and more educated than the general US population.[148] This may explain why, across all eight news manipulations, support for many POS policies was already quite high (see Table 2). Also, the mock articles may not have represented the media's effect accurately- this was an manipulation experiment and respondents might not have reacted the same way as they would have if they had been actually reading an article from their favorite media source. Laboratory experiments involving exposure to a message are challenging and can yield little effect.[149] Future research should test for news message effects on policy support among other samples, or longitudinally in more real-world settings where market-level and individual-level differences can be isolated.[20]

Some strengths of the study are worth nothing. This research is a first test of the potential, prospective impact of news article framing and level of localization on public support for POS policies. Research to test messages that could produce policy change has been extremely limited,[24] and this research offers a test of the effects of POS-specific media on POS-specific policy support. Our findings of no relationship between frame or level of localization on POS support offer a reminder that support for tobacco control policies stems from the static intrapersonal characteristics (e.g., age, gender, political identity, trust in government) and personal experiences (e.g., tobacco use status) of the people with whom we seek to partner.

CHAPTER 7 SYNTHESIS/DISCUSSION

The overarching goal of this dissertation research was to build the empirical evidence in order to support public health practitioners' implementation of policy and environmental interventions affecting the sales and marketing of tobacco products in the retail environment. Providing and enhancing communication to support policy change is an essential strategy. Public health advocates must learn to talk about policies in ways that garner support for health, and for the role of local- and state-level regulation (government intervention) in protecting people from harm or providing safe living conditions. Effective communication is especially important since public health advocates are increasingly competing with major corporations for media attention (e.g., the tobacco and vaping industry and lobby, the sugar sweetened beverage industry and lobby). The three studies presented here follow the agenda setting framework as articulated by McCombs and Shaw in Chapel Hill, North Carolina many decades ago; specifically, the notion that the media agenda sets the public agenda, which sets the policy agenda. At the individual level, peoples' attitudes and opinions are related to their behaviors; at the policy-level, we know that policies, systems and environments have a significant, downstream impact on health behaviors. The mission of public health is to create the conditions where people have the opportunity to live healthy lives; effective communication strategies have the potential to contribute to this mission. The following section offers a synthesis of each study, some strengths and limitations of the work, and implications for future research and practice.

Table 7.1. Summary of Dissertation Hypotheses and Level of Support for each Hypothesis, where + Indicates the Hypothesis was Supported, - Indicates the Hypothesis was Not Supported, and ± Indicates the Hypothesis was Partially Supported.

		Hypothesis	Level of Support
Study 1: Content Analysis/Media Agenda	Aim 2	H1A. Health frame → Pro-tobacco control slant	+
		H1B. Economic frame →Anti-tobacco control slant	+
		H1C. Political frame → Anti-tobacco control slant	+
		H2A. Greater pro-tobacco control sources → Pro-tobacco control slant	+
		H2B. Greater anti-tobacco control sources → Anti-tobacco control slant	+
		H3A. Both data and narrative → Pro-tobacco control slant	+
		H3B. No evidence → Anti-tobacco control slant	+
		H3C. Data without a source → Anti-tobacco control slant	+
		H4A. Both local quote and local angle → Pro-tobacco control slant	+
		H4B. Neither a local quote and local angle → Anti-tobacco control slant	+
		H5A. Tobacco industry or retailer only → Political or economic frame	+
Study 2: Media Agenda to Policy Agenda	Aim 1	H1A. POS Score higher in 2014 than in 2012, controlling for covariates	±
		H1B. Volume significantly related to 2014 POS Score, controlling for covariates	±
		H1C. Content characteristics related to 2014 POS score, controlling for covariates	±
	Aim 2	H2. Greater volume of articles → greater 2014 POS score, controlling for covariates	±
		H3. Greater number of articles w/pro-tobacco control slant → greater 2014 POS score, controlling for covariates	±
		H4. Greater number of articles w/ a dominant health frame → greater 2014 POS score, controlling for covariates	−
		H5. Greater number of articles w/ a one or more health advocate sources → greater 2014 POS score, controlling for covariates	±
		H6. Greater number of articles w/ any evidence → greater 2014 POS score, controlling for covariates	−
		H7. Greater number of articles w/ both local quote and local angle → greater 2014 POS score, controlling for covariates	±
Study 3: Media Agenda to Public Opinion	Aim 1	H1A. Health frame → Higher POS support	−
		H1B. Economic frame → Lower POS support	−
		H2A. Both local quote and local angle → Higher POS support	−
		H2B. Neither local quote nor local angle → Lower POS support	−
	Aim 2	H3A. Health frame with local quote and local angle → Higher POS support	−
		H3B. Economic frame with local quote and local angle → Lower POS support	−

7.1 Synthesis, Strengths and Limitations

7.1.1 Study One

A summary of support for hypotheses across all three studies is presented in Table 7.1. In Study One, we aimed to carry forward the vast extant tobacco-news content analysis literature, extending it to test a priori hypotheses about the relationships between variables in articles, specifically with regard to POS-related news content. First, we described eight years of content related to POS-level tobacco control interventions. We found less than one thousand POS articles (n=917) in a sample of 273 newspapers, and most of them covered either the June 2009 signing and implementation of the Family Smoking Prevention and Tobacco Control Act or the 2014 decision by the CVS Pharmacy Corporation to end sales of tobacco products in their stores and to change their name to CVS Health. Our hypotheses about the relationships between the characteristics of a news article, letter to the editor or opinion/editorial and its overall slant for or against tobacco control efforts were supported: stories that included a health frame, a greater number of pro-tobacco control sources, both data and narrative evidence, or both a local quote and a local angle were the most likely to have a pro-tobacco control slant. Conversely, stories with economic or regulation frames, a greater number of anti-tobacco control sources, no evidence, and no localized elements were the most likely to have an anti-tobacco control slant.

Key findings from Study One were that the regulation frame was the most frequently present in news articles throughout the study period, and that public health advocates were woefully outnumbered as sources when compared to the presence of the tobacco industry, tobacco retailers, and government or law enforcement. Some concern should exist about these trends: if public health sources remain absent, and the tobacco industry and retailers

remain present within POS coverage, support for POS policies and progress towards implementation may suffer.

The content analysis methods used in Study One had significant strengths. We chose an 8-year time period of news content around the Family Smoking Prevention and Tobacco Control Act, a robust sample of high circulating newspapers from both the national and state levels,[103] and we trained four data collectors (1 Bachelor of Science in Public Health (BSPH), 2 Master of Public Health (MPH) students and 1 recent MPH graduate) in two, 2-hour in-person sessions through multiple iterations of a codebook. Throughout the process, we received methodological guidance from the lead librarian and a content analysis research expert at the UNC School of Journalism and Mass Communication. Beyond the strengths listed here, several challenges arose in Study One. First, routine changes in university database subscription services meant we had to revise the sample and visit other university libraries to download data. Gaps in news subscriptions meant, too, that we were not able to secure 5% population coverage in Arizona and Delaware but secured 2.0% (n=7 newspapers) and 1.4% (n=1 newspaper) circulation, respectively. Second, we learned that coding for a "dominant" frame in news content, beyond a simple "present" frame, is difficult. Our inter-rater reliability was low on the dominant frame variable after significant retraining, so it was removed from hypothesis testing in favor of a "present" frame that had high IRR. Lastly, we chose to exclude *unpublished* wire content (e.g., the Associated Press feed) from the sampling frame at the onset of the study because we wanted to focus on news content that was *published* for the public eye, rather than news content that was *made available for publication*, but not necessarily published. Through the coding process, each article was identified as either (a) duplicate or modified wire content, or (b) a local story, based on the

article byline and descriptive characteristics. As such, our research describes and analyzes POS content that was *published* in our newspaper sample during the study time period.

A few limitations of Study One are worth noting. First, our findings are generalizable to the sample of 273 newspapers that were included in the analysis: we may have missed something by not including smaller, lower-circulation local-level papers. Second, we only used print newspaper content and in a world of electronic and social media, television, and blogs, and social media, we could not capture the complete communication/information environment. Finally, we cannot ignore that human coding of text content is subject to error; our data collectors were well-trained and IRR measures were within acceptable ranges, but still we had to omit variables that we did not have confidence in, which may have affected our findings (e.g., How much stronger would a relationship between frame and slant be if we had used "dominant" frame rather than "present" frame?).

7.1.2 Study Two

In Study Two, we aimed to measure the relationship between the media agenda and policy agenda, or, as operationalized here, between POS news content and POS policy progression at the state-level in the US over a two-year period. Results of hypothesis tests are listed in Table 7.1. Of note, our hypotheses were only partially supported. Given our theoretical framework, we expected to see significant relationships between news content volume and characteristics and POS policy progress over time. In bivariate analyses *without* control variables, we saw that characteristics of POS-news content were associated with POS policy progression: POS-news related total volume, and the presence of public health sources, both a local angle and quote, and pro-tobacco control slant in POS-news articles were positively and significantly associated with POS-policy progression. However the relationships did not persist when control variables were added into our statistical models. In

multivariate analyses where we controlled for important covariates, the significant

relationships between content characteristics and policy progression were lost.

Despite only partial support for our hypotheses, Study Two had some important

strengths. To our knowledge, it is the first study to examine the relationship between POS-

tobacco-related news content and public support for POS tobacco control policy

interventions. Given the significant resources that have been dedicated to news content

analysis research in tobacco control over the years, and given that media partnerships are

often required by funders and always recommended in tobacco control and prevention

practice, it is important to clarify the role that such media activity can play in actually

contributing to policy and health behavior change. At this point, our question of whether

media can help with policy progression is not fully answered and remains important. We

showed some degree of support for the relationship, but are not yet clearly certain that media

advocacy can effectively build support for and implement policies that improve health.

Another strength of this study is that we used two waves of real time data on the amount of

POS policy implementation at the state level. We had some concerns about the sensitivity of

our measure to detect the placement of states within a continuum, or staged approach to

policy change, but we were able to know whether or not a policy had been implemented. At a

minimum, our POS Index is a strong measure of implementation completion, with a higher

score indicating a greater number of policies that have been implemented.

Within Study Two, there were critical decision points along the way with which we

wrestled. For example, after finding no relationship between POS media content and POS

policy progression over time represented as a continuous variable in our hierarchical

regression model, we created a dichotomous categorical variable to represent POS policy

implementation as a "threshold" of moving from the planning/advocating/proposed stage of policy progression to the enacted/implemented stage of policy progression. Ultimately, there were no differences in news media content characteristics among states that had or had not crossed or had not crossed the dichotomous enactment threshold. We also tested for significant differences in the amount of POS policy progression between states with high versus low news content volume; each of our additional analyses still led to the same null conclusion.

Study Two may have been limited by our data collection period. Given the low number of cases (42 states), and few POS- news articles, it may be that sufficient media coverage had not yet been generated to impact POS policy progression, or that policy progression cannot be properly captured within a 24-month time period. Using a longer time series approach, where levels of media content are compared with the level of implementation, over a longer period of time might reveal associations. This is an opportunity for future work.

7.1.3 Study Three

In Study Three we aimed to measure public support for POS policies based on a respondents' exposure to a mock news article with specific content manipulations. Our hypotheses, presented in Table 7.1, were not supported. We found that exposure to a single news message in a laboratory environment was not related to POS policy support. In this particular study, there were no main effects of frame or level of localization, nor were there interaction effects between frame and level of localization on POS policy support. Rather, it was the persistence of individual-level characteristics and experiences that were most strongly correlated to opinions on POS policies. When controlling for covariates, stronger support for policy options were seen for: females as compared to males; individuals age 18-

34 as compared to older individuals; non-tobacco users as compared to tobacco users; those identifying as Democrat or Democrat-leaning as compared to other political affiliations; and those who have a great deal or fair amount of trust in the government. Of particular interest from Study Three was the public support we identified across message groups. Policies requiring a tobacco retailer license, enforcing provisions of the licenses, and policies protecting children from the dangers of tobacco marketing received the highest levels of support. Policies restricting menthol and candy or fruit flavors, raising the price or tobacco products through restrictions on price discounts, package size and coupon redemption, and some policies restricting the locations of tobacco sales received the lowest levels of support.

Study Three had significant strengths. To our knowledge, this was the first study to examine the relationship between POS-tobacco-related news content and public support for POS tobacco control policy interventions. It was also the first test of the potential, prospective impact of common POS news frames and levels of localization on support for POS policies. Research to test messages that could produce policy change has been extremely limited [24]. At a minimum this research offers a test of the effects of POS-specific media on POS-specific policy support, and indicates that our current news messages may not be sufficient to build public support for policy implementation.

The experimental design in Study Three was informed by the findings from Studies One and Two. The content manipulations around evidence structure (offering data or statistical evidence versus offering a narrative story or personal anecdote) that we planned for Study Three were not conducted, because evidence structure was not significantly associated with the outcomes of Studies One and Two, despite the persuasiveness of narrative story in past research. We may also have missed an opportunity to study the effect of slant on public

support for POS policies. Each of our news manipulations was written in a fair and balanced manner, according to journalistic principles. In other words, our goal was not to persuade, but to measure support for policies following exposure to mimicked news content that was written to reflect what is currently happening in POS news content.

Study Three was limited by the convenience sample of MTurk respondents, who are known to be more liberal and younger than the US general population, and a one-shot experimental design. Laboratory experiments are also challenging, as they do not reflect real-world exposure to media messages: this study was no exception. Mock articles may not have represented the media's effect accurately- we experimentally manipulated the messages and respondents might not have reacted the same way as they would have if they had been actually reading an article from their favorite media source.

7.2 Future Directions

7.2.1 Implications for Research

Important implications for future research exist as a result of this work. First, future work that examines the relationships between news media content and policy implementation might benefit from a more holistic view of mass and tailored media. For example, one option is to update the unit of analysis to match local-level news to local-level policy; this could involve purposefully adding lower-circulation, smaller newspapers to the sampling frame or choosing newspapers randomly from a universal list rather than based on circulation rates. Another option is to incorporate online, social and television content that is no doubt an influencer in our current fragmented/channeled information environment. One big question for future research has to do with whether or not newspaper content is still relevant in an increasingly digital media information environment. Newspaper editors and content scholars will of course suggest that large papers like the NY Times are main agenda-setting icons in

publishing. However, we must understand the extent to which 24-hour news cycles, cable news networks, interpersonal connections and news sharing, blogs and opinion leaders, or even outside industry lobbyists (e.g., e-cigarettes and vaping associations) influence the problems and solutions that arise into the public and policy agendas.

We must also reconsider our measures of policy progression, from planning to implementation and sustainability. In the future, it will be important to measure policy progression at the local level, in addition to the state level. This shift in unit of analysis remains a lingering question as we consider alternative explanations for the null multivariate relationships we found between news content characteristics and level of policy implementation. The policy change process, rather than being linear, is a complex system that is difficult to assess, as it is not a static event, nor is it seen the same by everyone: some people might be very aware of a change in policy, while other people may not even notice. Future research would benefit from a critical analysis of the scale progression from "planning/advocating" to "proposed" to "enacted" to "implemented". It could that the steps are something like (1) engage partners, (2) document local problems, (3) formulate evidence-based proposals, (4) gain media coverage, and (5) persuade decision makers, as has been proposed by Dr. Jennifer Leeman and others.[150] Additional aspects of policy progression should also be incorporated into future research. For example, it may be helpful to differentiate between 'inside' versus 'outside' policy implementation. Anecdotes from POS practice identify two current policy change pathways: one where the policy is implemented on the 'inside' by a champion without public knowledge, and another where public opinion must be generated from the 'outside' with media advocacy and other communication activities, in order to compel decision makers to change. Another addition may be to

incorporate additional contextual variables that we did not consider here that may lend or detract support for policy change. Examples include political party leadership in state- or local-level government, or relative geographic proximity of other jurisdictions (city, county, state) who have proposed and/or implemented similar policies. The field would benefit from qualitative interviews with practitioners and implementation case studies to understand a field-based perspective on the policy change process, rather than an academic or theoretical perspective being passed down as part of implementation science.

Another area for future research may involve the development and testing of messages that could persuade key message receivers, such as a policymaker or public opinion leader, to be supportive of POS policies. It is uncertain whether participant responses to a laboratory experiment with a one-shot message dose can adequately reflect real-world reactions to message stimuli; this remains an important question. Perhaps future experiments could test the impact of newspaper opinion/editorials or letters to the editor with either pro-, anti-, or mixed-slants toward tobacco control objectives, produced by varied stakeholder sources, or of paid or earned public service announcements about the problem of tobacco in the retail environment. It is possible that messages need to be hard-hitting, arresting, from the tobacco industry as a terrorist killer of targeted populations, rather than written in traditional news frames around health or economics. Certainly, one next step for messaging in public health promotion is to uncouple the assumed assumption between more POS policies and a negative effect on local business.

7.2.2 Implications for Practice

Study One provides the clearest implication for practice -- as policy, systems and environmental interventions become a new standard in public health practice, practitioners must not shy away from playing an organizing role in communities, as spokespeople and

advocates. Public health advocates from government organizations, non-governmental organizations, hospitals, health care providers or other service agencies need to have partnerships with journalists and media gatekeepers at-the-ready, in order to infuse news coverage with health frames, local quotes, statistical evidence, and narrative stories that make a pro-tobacco-control slant more likely. Spokesperson or media advocacy training can be included in public health degree training programs and in technical assistance provision for state and local health departments working on the ground. Practitioners also need tools and implementation supports for gathering local stories and data that can be used in talking points for media coverage and events. Public health people need to ramp up their efforts by (a) devoting resources to public relations, (b) gaining expertise as spokespeople, and (c) by clearly, specifically, understanding anti-lobbying guidelines required by funders or government agencies, as to not feel so constrained.

Practitioners would also benefit from prepared POS content that includes talking points for specific POS policies as they relate to health and economic benefits for communities. Current POS content appears to credit tobacco retailers as important members of the local business community, rather than as contributors to the continued tobacco epidemic through targeted marketing. More needs to be known about how to help retailers and community members overcome the idea that POS policies are believed to threaten business rather than promote health. Public health practitioners must remain aware that businesses/industry lobbies will claim that public health policies are "anti-business"; and, we must proactively counter this message. For example, it will likely benefit POS policy progression if the common "regulation" frame could be positioned as a positive, protective mechanism for public health, rather than a drag on local business or as unnecessary meddling

in personal freedoms. Feasibility studies have been conducted in New Zealand to facilitate buy-in from retailers transitioning away from tobacco products and a second tobacco retailer transition project is underway in the City of Philadelphia. Each of these projects will lend information and insight into how to more effectively make the healthy choice the easy choice, and the best business choice, with regard to tobacco retailing.

Finally, the messages we tested in Study Three communicate important talking points for POS tobacco control policies. Whereas the messages we tested did not persuade policy support, they can begin to renew conversation about the devastating problem of tobacco in the United States, and where it enters our communities, in the retail environment. Many people in the general public, including key decision makers, are under the mistaken assumption that tobacco use is no longer a problem in US communities, thinking that the tobacco epidemic has been solved and now Americans must move on to more pressing issues such as obesity or guns. Tobacco remains the leading cause of preventable death, however, and the battle to prevent tobacco-related deaths is far from over. As practitioners and researchers, we must serve as news sources, share narrative stories from community partners, and offer local data to support the implementation of policies that have the potential for health impact through creating the conditions for health in the retail space and across communities.

APPENDIX A CONTENT ANALYSES OF TOBACCO-RELATED NEWSPAPER COVERAGE

Appendix A. Structured, peer-reviewed content analyses of tobacco-related newspaper coverage (published as of May 19, 2014 and archived in PubMed or EBSCO Host databases according to search terms (Tobacco' AND 'Content Analysis' AND 'Newspaper' in any field).

Citation	Sample location; time frame	Purpose; RQ	Study Design	Newspaper sampling frame	Sample size	Measured variables	Intercoder reliability	Hypothesis testing
Chapman, S., 1989 [73]	Australia, 12 months 1987-1988	Analyze a census of all coverage of smoking issues	Cross-sectional	30 capital city newspapers	N=1,601	Type; Origin (source/newspaper ownership); Content (theme); Slant	1% of sample; Cohen's K (0.84)	No H listed; Cr0ss-tab content by slant, article type by slant with chi-square statistic
Menashe, C.L. & Seigel, M., 1998 [22]	US, 1/1/1985 - 12/31/1996	Describe, analyze predominant framing tactics	Descriptive	Front-page of NY Times and Washington Post	N=179	Tobacco interest frame; Tobacco control frame	Resolved all differences by discussion	No H listed; No statistical analyses
Kennedy, G.E., & Bero, L.A., 1999 [74]	US, 1/1981 – 12/1984	Extent and content of newspaper coverage of research on passive smoking (PS); PS portrayed as controversial; if controversy decreased over time (measured as a proportion of articles; tested with z statistic)	Cross-sectional	Five highest circulating US papers: NY Times, Washington Post, USA Today, Wall Street Journal, LA Times; also included magazines	N=180	Number of articles; conclusions of articles; sources quoted; numbers and characteristics of research studies cited; presence of tobacco advertising	100% double coded; differences resolved by PI; 93% to 100% agreement (no statistic)	H1: Research on passive smoking sponsored by the tobacco industry would be cited in newspapers to dispute scientific findings on the adverse health effects of passive smoking; Differences in proportions: z statistic, X^2

								statistic, Mann-Whitney Rank Sum test, Fisher's Exact test
Lima, J.C., & Seigel, M., 1999 [23]	US, 1/1/1997-6/16/1998	Aim 1: Describe extent of coverage; Aim 2: identify frames; Aim 3: examine trends in frames over time	Descriptive	Front-section of Washington Post	N=117	Tobacco control frame; Dominant frame; Theme (policy component)	100% double coded; differences resolved by discussion	No H listed; No statistical analyses
Magzamen, S., Charlesworth, A., Glantz, S., 2001 [65]	California, US, 6/1/1997 – 12/31/1998	Assess CA print media coverage of CA's smokefree bar law	Descriptive	All California daily and weekly newspapers, magazines and trade publications	N=831	Article type; Tobacco industry arguments; Public health arguments (frames); View (slant)	5.6% (n=47) double coded; Cohen's K (0.74); also percent agreement (92%)	Stated expectations; present cross-tabulated data; no statistical analyses
Stillman, 2001 [14]	US, 1/1/1994-12/31/1998	Compare volume, slant of local news coverage in ASSIST vs. non-ASSIST states.	Longitudinal	ALL daily local newspapers in the USA	N=95,911	Date of publication; State; Name of publication; Circulation; Type of article; Policy type; Front page (prominence); Point of view (slant); Origin of story (local v. national focus)	Monthly reliability checks; Cohen's kappa and % agreement (0.95-.99% agreement)	Main H: ASSIST*time interaction. Testing for a growing difference in the frequency (rate) of all articles between ASSIST and non-ASSIST during 5 year intervention. PROC MIXED; repeated measures analysis

Wenger, L., Malone, R., Bero, L., 2001 [79]	US, 1/1/1987-12/31/1997	Content analysis of articles covering cigars	Cross-sectional	Five highest circulating US papers: NY Times, Washington Post, USA Today, Wall Street Journal, LA Times; Eight highest circulating CA newspapers	N=488 newspaper articles	Primary focus (cigar business, events, trends); image of cigars portrayed (positive or negative image); health risks, tobacco industry portrayal; placement of article; type of magazine (if applicable); individuals quoted or described (e.g. celebrities, public figures)	100% of articles double coded; Inter-coder reliability on 20% sample; Percent agreement 63% to 100%.	No H listed; X^2 statistic for differences between CA and US papers
Caburnay, 2003 [50]	Missouri, US 2/1/1999 – 1/31/2000	Describe nature of health behavior-related newspaper content; Examine relationships between source, health behavior topic, and other content variables	Cross-sectional	Daily print newspapers from 4 MO counties	N=1,354	Type; Prominence; Topical focus; Story origin; Research content; Level of prevention; Localization; Calls to action	10% of sample; ICC (0.86) and Cohen's K (0.85)	No H listed; Chi-square tests for relationships between content variables
Clegg Smith, K.M., Wakefield, M.A., Nichter, M., 2003 [63]	US, 10/1/2000-9/30/2001	Characterize articles that discuss **non**-tobacco related usage of MSA funds	Qualitative	322 US newspapers	N=94	Areas of non-tobacco allocation; Rhetorical devices (persuasive arguments); Framing techniques;	No information provided	No H listed; No statistical tests
Durrant, R., Wakefield, M., McLeod, et al., 2003 [8]	Australia, 1/1/2001-12/31/2001	Assess volume and nature of tobacco content in newspapers	Descriptive	12 (all) national and state newspapers	N=1,188	Publication location; Article type; Prominence; Theme; Slant	10% of sample; Cohen's K (0.84)	No H listed; No statistical analyses
Champion, D.,	Australia	Analysis of	Descriptive	Australian	N=262	Theme; Source;	Not discussed	No H listed; no

Author	Date	Description	Design	Media	N	Variables	Reliability	Analysis
& Chapman, S., 2005 [68]	3/25/1996 – 3/3/2003	framing techniques used in print media about the smoking ban		metropolitan print media (quality papers and popular newspapers) via Nexus Lexus		Slant		statistical analyses
Clegg Smith, K., Wakefield, M., 2005 [71]	US, 1/1/2001 – 12/31/2001	Examine newspaper editorials for perspectives on tobacco	Descriptive	310 US daily newspapers	N=162 LTEs	Theme; Position; Frame	Monthly kappa calculation; 20% double coding of frame; consensual coding via meeting	No H listed; No statistical analyses
Clegg Smith, K., Terry-McElrath, Y., Wakefield, M., Durrant, R., 2005 [10]	US and Australia 1/1/2001 - 12/31/2001	Compare coverage of tobacco between Australia and US	Cross-sectional	12 major Australian newspapers; 30 US papers	N=1188 Australia; N=1317 US	Article descriptors; Content (topic); Event tone and Opinion tone	10% of articles in Australia; 18.2% in US; Cohen's K (.84 Aus, .84 US)	Expectations identified; Bivariate statistics to test between-country differences in article frequency, type, theme, event, opinion; SAS PROC GENMOD; GEE
Clegg Smith, K., McLeod, K., Wakefield, M., 2005 [151]	Australia, 1/1/2001-12/31/2003	Understand how letters to the editor (LTE), a form of media advocacy, relate to tobacco control issues	Ethnographic content analysis (ECA)	11 national and capital city daily newspapers	N=361 LTEs	Open ended coding: Slant; "Trigger" for letter; What is letter trying to achieve; Claim to authority or legitimacy; Tactics/strategies calling on rhetoric	10% sample double coded; all coding differences resolved by discussion; no tests for inter-rater reliability were	No H listed; No statistical tests

							conducted	
Haddock, C.K., Parker, L.C., Taylor, J.E., et al., 2005 [80]	US Military Installations 1/2001-1/2004	Examine amount and type of tobacco-related content (information) in military newspapers	Cross-sectional	1-year rotating sample of 16 Military newspapers (each newspaper had a different 1-year interval)	N=793 newspaper issues; no number of articles provided	Tobacco industry frames (Menashe & Seigel, 1998); Article prominence; Frequency of advertisements	100% of articles were double coded; disagreements resolved to consensus; no % agreement given; no tests for inter-rater reliability were conducted	No H listed; Z test for proportions used to examine differences in rates of health topics presented
Clegg Smith, K., Wakefeild, M., Edsall, E., 2006 [17]	US, 1/1/2001-12/31/2003	Examine nature of tobacco-related news media coverage, focusing on "potential impact for policy outcomes" (p. 166)	Cross-sectional	100 highest circulating US newspapers	N=9,859 articles (R 1/3 of the days in each month)	Article descriptors; Content (topic); Event tone; Opinion tone	20 articles/month; Cohen's kappa (0.84)	X^2 tests to compare relative proportion of articles between descriptive categories: event/opinion slant and theme (topic)
Long, M., Slater, M.D., Lysengen, L., 2006 [76]	US, constructed months from 2002 and 2003	Characterize amount and type of tobacco-related coverage in newspapers, news magazines and TV news	Cross-sectional	Local daily newspapers, local nightly TV newscasts plus ABC, CBS, NBC and CNN, one national newspaper, 3 news magazines (Time, Newsweek, US News & World	Included in study: 447 newspaper stories, 25 TV stories, and 31 magazine stories	Story theme; Tobacco topics; Sources; Story prominence; Story valence (orientation); Story type	Cohen's K (.90-.96) and Scott's Pi; 10% of newspaper articles; did K also at end to account for coder drift	Expectations identified; X^2 and t tests conducted to test relationships between variables; Bonferroni-type corrections to control for multiple statistical tests

				Report)				
Morrison, S.D., Sutton, S.F., Mebane, F.E., 2006 [70]	NC, US, 1/1/2001-12/31/2004	Examine volume and prominence of newspaper coverage of tobacco-free schools campaign in NC	Descriptive	North Carolina newspapers archived in LexisNexis	N=138	Focus; Article type; Volume; Frame	25% of probability sample used for tests of inter-rater reliability; Percent agreement was 94%	No H listed; No statistical tests
Nelson, D.E., Evans, W.D., Pederson, L.L. et al., 2007 [6]	US, 1/1/2004 – 6/30/2005	Describe the development of a CDC-based national surveillance system for tracking tobacco news stories	Descriptive	10 newspapers, 4 wire services, 7 national TV news networks	N=1071 newspaper articles; N=209 wire service articles; N=523 TV stories	Article descriptors; type of tobacco product; geographic location covered in the report; population group; general tobacco themes; specific tobacco themes; use of a federal agency as a source	10% sample double coded; kappa (mean = 0.76)	No H listed; One test for difference between mean volume Year 2 to Year 1
Niederdeppe, J., Farrelly, M.C., Wenter D., 2007 [152]	FL, US, 4/22/1998-12/31/2001	RQ: Effects of media advocacy on policy change and youth smoking behavior H1: News coverage should increase after onset of media advocacy efforts H2: Counties with greater news coverage should be more likely to adopt policies H3: Counties	Longitudinal	256 Florida newspapers	N=2330	Presence of Students Working Against Tobacco (SWAT) coverage; Presence of Florida Tobacco Control Program (FTCP) coverage;	Subsample of randomly chosen 50 articles (~2%) calculate inter-rater reliability (k=0.74); Second test for reliability 3 months after coding began with randomly selected 39 (~1.6%) (k=0.73)	Hypotheses identified; Event history analysis/logistic regression and OLS regression to test hypotheses

Citation	Sample location; time frame	Purpose; RQ	Study Design	Newspaper sampling frame	Sample size	Measured variables	Intercoder reliability	Hypothesis testing
		that adopt policies should have lower youth smoking rates						
Clegg Smith, K., Wakefield, M.A., Terry-McElrath, Y., et al., 2008 [84]	US, 2001-2003	Examine association between newspaper coverage of tobacco and youth smoking attitudes and behavior	Cross-sectional	386 daily newspapers circulating at 5% of more in 2001-3 Monitoring the Future (MTF) survey communities	N=8390 articles	Article descriptors (type); Valence (slant for tobacco control); Theme	5 trained coders; Cohen's kappa = 0.79 (range 0.71-0.84)	No H listed; Logistic regression used to test associations, controlling for individual, geographic and policy factors
McLeod, K., Wakefield, M., Chapman, S., et al., 2009 [88]	Australia, 1/1/1995-12/31/2005	Examine change over time in prevalence of each 'representational category' (RC) of smokers	Longitudinal	1 major Australian newspaper, The Age	N=618	Representational categories (RCs) of smokers; Slant; Presence of advocacy statements for tobacco control; Presence of tobacco promotion public relations (PR)	Qualitative development of RC categories; 30 articles (~5%) double coded; 89% rate of concordance	No H listed; Two-way X^2 analysis for relationships between advocacy statement presence, tobacco PR presence and RCs; Bivariate logistic regression to examine change over time (DV = RC; IV = year) – reporting linear OR with 95% CI
Harris,J.K.,	MO, US,	Examine	Cross-	187 Missouri	N=1623	County of	Three trained	No H listed;

Shelton, S.C., Moreland-Russell, S., Luke, D.A., 2010 [83]	9/1/2005-12/6/2006	tobacco coverage in print media in MO prior to tobacco tax ballot issue: position of article, themes, how position and theme change over time, how position and theme associated with voter support	sectional	newspapers (though ALL 446 were tracked for tobacco-related coverage)		publication; Date of publication; Name of newspaper; Article type (news, editorial, LTE); Tobacco topic; Tobacco control position (positive, negative, neutral); Article theme (economic, political health)	coders and each article was coded by 2; Brennan and Prediger's Kappa – all variables had substantial (K=0.61 to 0.80) to nearly perfect (K>0.80) agreement	Descriptive and inferential statistics used; Chi-square, also 3 X 3 factorial ANOVA
Wackowski, O.A., Lewis, M.J., Hrywna, M., 2011 [66]	New Jersey, US 11/2005 – 2/2007	Describe frames, supporting information used in content to support or oppose casino exemption in smoking ban	Descriptive	News/feature articles in NJ newspapers (excl. opinion pieces)	N=210 included in the analysis	Frames opposing the casino exemption; frames supporting the casino exemption; type of information presented	11% of articles (n=24); Cohen's K (0.93; range 0.68 to 1.0)	No H listed; No statistical tests
Wakefield, M.A., Brennan, E., Durkin, S.J., et al., 2011 [86]	Australia, 2001-2006	Aim 1: Describe volume, type, content, prominence and tone; Aim 2: examine association between type, prominence, tone and tobacco issue being covered;	Cross-sectional; Longitudinal	All 12 major daily newspapers (2 national, 10 state)	N=6,483 articles	Newspaper name; Date of publication; Article prominence; type of article (news, editorial, column, LTE, other); Dominant topic (13); Event slant; Opinion slant	Every 3 months throughout the study on a random sample of articles; median Kappa was 0.98 (range 0.81-1.00)	No H listed; Series of X^2 tests to examine associations; Bivariate logistic regressions to assess extent to which proportion of articles with various characteristics

		Aim 3: examine nationwide population reach of articles						changed over time (set alpha to .01 given multiple tests)
Fahy, D., Trench, B., Clancy, L., 2012 [64]	Ireland; 1/30/2003-9/30/2004	Describe newspaper content related to Irish workplace smoking ban	Descriptive	4 newspapers representing geographic and political diversity of Irish market: Irish Times, Irish Independent, Evening Herald, Ireland on Sunday	N=1154	Frame; source; value stance (slant); articulated 'episodes' (phases) of the policy process	10% of articles; Cohen's kappa range .67 to .82	No H listed; No statistical tests.
Foster, C., Thrasher, J., Kim, S., et al., 2012 [81]	US, 1/1/1993 – 12/31/2009	Examine impact of agenda-setting factors on coverage of FDA regulation of tobacco	Cross-sectional	NYT and Washington Post	N=460	Focus; Arguments for supporting or opposing FDA regulation of tobacco; Prominence	30% double coded; Krippendorff's alpha (0.80)	No H listed; X^2 tests to examine differences in outcome variables between Clinton and Bush administration
Helme, D.W., Rayens, M.K., Kercsmar, S.E., et al., 2012 [75]	Rural KY, US, 4/1/2007 – 3/31/2008	Examine media content on secondhand smoke and smoke free policy; relationship between contextual variables and media content	Cross-sectional	58 newspapers in 40 rural KY counties	N=709	Voice (article type); Focus (national, state, local); Prominence; Tobacco prevention emphasis/slant; Author (~source); Relevance (tobacco or non-tobacco focus)	20% double coded; Kappas (0.60 to 0.76)	A priori H provided; Pearson's product moment correlation to determine relationship between content and contextual variables

Moreland-Russell, S., Harris, J.K., Israel, K., et al., 2012 [62]	Missouri, US, 11/2005-11/2007	Examine strategic communication techniques in LTEs in MO papers during smoke free and tax initiatives	Ethnographic content analysis (ECA)	Daily and weekly MO newspapers	N=282 LTEs	County and date of publication; Overall position of article (slant); LTE trigger; LTE objective; Authority claimed by author; Use of rhetoric	32 LTEs used to establish coding system; remaining 194 double coded by consensus; used Scott's pi.	No H listed; No statistical tests
Nagelhout, G.E., van den Putte, B., de Vries, H., et al., 2012 [85]	Netherlands, 3/2008 – 4/2009	To assess the influence of newspaper coverage about smoke-free legislation on smokers' support for smoke-free bars and restaurants	Descriptive content analysis; Cross-sectional link to smokers' support	6 Dutch newspapers that were read most often by smoking respondents of the ITC Netherlands Survey	N=1041	Reference to health; Reference to economic aspects; Article slant	100% double coded; Cohen's K = 0.85 for health, 0.85 for economic, and 0.62 for slant	No H listed for nature or volume of content; No statistical test for content variables; Correlation and linear regression analyses to test relationships between exposure to content and support for ban
Wakefield, M.A., Brennan, E., Durkin, S.J., et al., 2012 [77]	Australia, 2004 to 2007	Aim 1: Quantify the presence of tobacco control advocacy groups as sources in newspaper content; Aim 2: Identify characteristics of articles more/less likely to mention advocacy	Cross-sectional	12 (all) national and state papers	N=4,387	Type; Prominence; Topic; Event impact (event slant); Opinion orientation (opinion slant); Presence of advocacy groups (sources)	Every 3 months; random subset (no % given); Cohen's K (0.93)	No H listed, however, expectations identified; X^2 tests to examine relationships between variables

		organizations						
Bach, L.E., Shelton, S.C., Moreland-Russell, S., Israel, K., 2013 [57]	MO, US, 9/15/2010 – 4/3/2011	Descriptive content analysis of coverage of MO smoke-free workplace ballot initiative	Descriptive	9 newspapers covering 3 MO communities	N=181	Newspaper name; Publication location; Publication date; Article type; Overall position of the article (slant); Dominant frame; Use of evidence; Source of quotes	10 article random sample to develop codebook; each article double coded; percentage agreement and free-marginal multirater kappa	No H listed; No statistical analyses
He, S., Shen, Q., Yin, X., et al., 2013 [82]	China, 1/1/2008-6/30/2011	RQ1: What was the proportion of coverage for each tobacco-related theme, especially tobacco farming and industry themes? RQ2: Are article volumes, slants, themes, and use of fear appeals related to the type of newspaper (e.g. local versus party)?	Cross-sectional	31 newspapers in 17 Chinese cities (50% local, 50% party papers)	N=4,821	Article descriptors; Prominence; Themes (topics); Slant, Fear appeals (e.g. severity of threat, susceptibility to threat, response efficacy, self efficacy)	10% of articles randomly double coded; Cohen's K median 0.93 (range 0.61-0.98)	No H listed; X^2 tests to assess difference between party and local newspapers
Kuiper, N.M., Frantz, K.E., Cotant, M., et al., 2013 [69]	MI, US, 4/1/2010-6/1/2010	Descriptive analysis of newspaper coverage of Michigan Smoke-Free Law around implementation of law;	Descriptive	65 Michigan print and online newspapers via (1) Lexis Nexis, (2) clipping service, (3) digest of	N=303	Tone; Source; Proportion of positive and negative messages; Theme (Frame/Topic hybrid)	10% of sample (n=30) double coded; K = 0.65 – 1.0	No H listed; No statistical analyses

Citation	Sample location; time frame	Purpose; RQ	Study Design	Newspaper sampling frame	Sample size	Measured variables	Intercoder reliability	Hypothesis testing
		RQ1: Tone, RQ2: Positive messages by health partners, RQ3: Negative messages by opponents		coverage from MI Campaign for Smokefree Air, (4) local newspaper articles by local grantees/ contractors				
Moshrefzadeh, A., Rice, W., Pederson, Al, Okoli, C.T., 2013 [67]	Vancouver, BC, Canada, 1/1/2010 – 12/31/2011	Descriptive analysis of newspaper coverage of smoke-free parks and beaches law	Descriptive	4 popular local and provincial newspapers	N=90	Smoking focus; Geographic focus; Slant; Primary story approach; Theme; Topic	20% of sample; Cohen's K (0.768)	No H listed; No statistical analyses
Nelson, D.E., Pederson, L.L., Mowery, P., et al., 2013 [100]	US, 1/1/2004-12/31/2010	RQ1: Volume of coverage of tobacco by channel; change over time? RQ2: Major themes, by channel; change over time? RQ3: Prominence of tobacco coverage in TV?	Longitudinal	10 newspapers, 2 newswires, 10 TV stations	N=7401 newspaper, N=10,236 newswire, N=2319 TV	Main Theme I, Main Theme II, Prominence	10% random sample, K =0.76-0.79	No H listed; X^2 tests, linear regression for rends in proportion of stories by theme; logistic regression to control for time – differences as ORs with 95% CIs
Citation	**Sample location; time frame**	**Purpose; RQ**	**Study Design**	**Newspaper sampling frame**	**Sample size**	**Measured variables**	**Intercoder reliability**	**Hypothesis testing**
Wackowski, O.A., Lewis, M.J., Delnevo, C.D., Ling, P.M., 2013 [78]	US, 2006 - 2010	Characterize news media content about smokeless tobacco in US newspapers and newswires	Cross-sectional	Top 3 daily newspapers, and top 2-4 daily circulating newspapers in each state	N= 877	Main SLT topic; SLT risk references; Slant of opinion articles	10% from each year double coded; Kappa (0.65 – 1.0)	No H listed; X^2 tests to examine relationships between content variables

				(126 newspapers and 3 news wires)				
McDaniel, P.A., Offen, N., Yerger, V.B., Malone, R.E., 2014 [72]	US, 1995-2011	Describe news media coverage of retailer abandonment of tobacco sales	Descriptive	3 online databases: Lexis Nexis, Proquest, Access World News, with search terms	N=429 local and national news items (newspaper, newswires, magazines, trade pubs, broadcast TV, web-based)	Article descriptors (source, type, date, photo, page number, word length); Retailers' reasons for ending tobacco sales; Potential impacts of doing so; Responses to decision; Mention/portrayal of tobacco use; Mention/portrayal of tobacco industry; Mention of policy as un/conventional	21% of items (n=91) double coded in multistep process; Kappa 0.83); variables with low K were thrown out (e.g. slant)	No H listed; No statistical analyses
Thrasher, J.F., Kim, S., Rose, I., et al., 2014 [18]	SC, US, 1/1/2006-6/30/2010	Characterize volume and content of SC media coverage of 4 failed and 1 successful tobacco tax initiatives	Longitudinal*	4 daily, highest circulating newspapers in South Carolina	N=346	Article type; Arguments in support of and against raising cigarette taxes; Overall slant towards tax	N=42 (~12%) of articles double coded; Krippendorf's alpha (corrected for agreement by chance) used to test Inter-Rater reliability (0.90 to 1.0)	All 11 H listed; X^2 and t-tests to test hypotheses; *Trends over time investigated with chi-square tests

Appendix B. Summary of 'frame' and other conceptually similar measures in past tobacco control content analyses.

Citation	Variable Name	Response Categories		
Menashe & Seigel, 1998	Frame	*Tobacco interest frames*		*Tobacco control frames*
		• Positive economic force		• Drug delivery device
		• Concerned about youth		• Killer
		• Just doing business		• Corporate liability
		• A pleasurable experience		• Costs of smoking
		• Health vs. wealth		• David vs. Goliath
		• Big government/civil liberties		• Outside intruder
		• Moralizing/hostility/prohibition		• Smokers at risk
		• Manipulation of science		• Deceit/manipulation
		• Accommodation		• Kids
		• Choice		• Nonsmokers' rights
		• Free speech/legal product		
Lima, J.C. & Seigel, M., 1999	Tobacco control frame: the way the articles defined the problem of tobacco, adopted from Menashe & Seigel, 1998	• Kids • Killer/corporate liability • Drug delivery device • Costs of smoking • David V. Goliath • Outside intruder • Smokers at risk • Deceit/manipulation • Non-smokers' rights		
Magzamen, S., Charlesworth, A., Glantz, S.A., 2001	Framing categories; theme	*Theme*	*Tobacco industry frame*	*Health groups frame*
		Economic	Hurts business; Decreasing revenues and tips	No negative effects/good for business
		Choice	Smokers' rights; adult choice	Non-smokers' rights; public supports the law
		Enforcement	Inconsistent/no enforcement	Enforcement is going well/being worked out
		Government role	Government	Government role

			interference	to protect employees
		Ventilation	Need to create state standards	No standards would be sufficient
		Legislation	Bills to repeal or delay law	Attempts to uphold law
		Tactics	Attack academic/economic studies	Attacking tobacco industry credibility
		Civil disobedience	Purposefully disobeying law	-
		Patron habits	Drinking and smoking go together	-
		Workplace hazards	Employees should accept workplace hazards	Employees should not be subject to workplace hazards
Champion, D. & Chapman, S.	Frame (note each frame can conceivably be positive, negative or neutral for tobacco control objectives)	- Health: health issues, ETS exposure, health risks - Economic: economic consequences of smoke free venues - Cultural/ideological: public support or opposition, rights, political - Practical: implementation and timing practicalities - General: no value laden comments of support or opposition		
Clegg Smith, K. & Wakefield, M., 2005	Framing Argument	- Policy intervention - System cynicism - Evil industry - Youth vulnerability - Individual rights - Smoking portrayed as a societal problem - Greedy government - Tobacco as a legitimate business - Smokers portrayed as acting on free will - Smoking portrayed as risky - Smoking portrayed as socially unacceptable - Acceptable vice - Tobacco portrayed as the underdog - Tobacco portrayed as a dinosaur		
Harris, J.K.,	Dominant	1. Economic		

Shelton, S.C., Moreland-Russell, S., Luke, D., 2010	Theme, with Argument	• Tax will pay for other health-related programmes • The tax will pay for tobacco prevention and cessation programmes • The tax will raise general revenue for the state • State don't spend enough money on tobacco control… • The tax will recover medical expenses associated with tobacco-related diseases • The tax money may not go where its intended • The revenue from the tax will not be enough to cover the promised services • A smoking ban hurts/will hurt business • The tax will hurt business • Should tax those who smoke 2. Health • Tobacco use leads to negative health consequences • Concerned about secondhand smoke • Increasing the cig tax is a way to decrease tobacco use • The tax will increase prevention/cessation among youth • Tobacco use by individual or family member/friend • Tobacco use is addictive; people cannot help it • Raising taxes will have no effect on tobacco use 3. Political • Tobacco use is a personal choice/freedom • The tobacco industry deceived us • It's not fair to tax a certain group of people • Taxes are high enough; taxes in general should not be increased • It's a regressive tax • There are problems that need to be addressed other than tobacco use • Tobacco use is legal • Should not punish people who are addicted to tobacco	

Wackowski, O.A., Lewis, M.J., Hrywna, M., 2011	Frame	*Frames supporting/justifying exempting casinos from smoking ban*	*Frames opposed to exempting casinos from smoking ban*
		• Economic	• Unfair
		• Compromise	• Protect health
		• Close loophole later	• Inconsistent w/ overall ban
		• Smoking & gambling go together	• "Big Casino"/"Big Politics"
		• Other	• Unnecessary/counter-economic

			• Alternatives won't work
			• Implementation issues
			• Other
Fahy, D., Trench, B., Clancy, L., 2012	Frame	• Democracy: democratic rights/civil liberties • Economics: impact on hospitality trade, economy • Health: health effects on individuals and society • Technical: legal and legislative issues, scope, implementation, enforcement • Politics: political story with emphases on political actors, lobbying • Society: societal change and cultural habits	
Moshrefzadeh, A., Rice, W., Pederson, A., Okoli, C.T.C., 2013	Primary Approach taken to tell the story	• Social: social issues related to smoking, nuisance, social modeling • Environmental: environmental implications of smoking/the bylaw • Health: health-related issues of smoking/the bylaw Rights: right to smoke, right to not be exposed to smoke • Factual • Regulation: creation of bylaws, regulations • Other	
Bach, L.E., Shelton, S.C., Moreland-Russell, S., Israel, K., 2013	Dominant frame	• No clear frame • Economic: monetary reasons for or against smoke free work-place policies, particularly at the societal level • Health: general health consequences of tobacco use or SHS exposure, the addictive nature of tobacco, or the behavioral effect of smoke-free workplace policies on tobacco use • Political: ideological reasons for or against smoke-free workplace policies • Rights: conveyed messages regarding an individual's free liberties (e.g., as a smoker, nonsmoker, worker, patron or business owner)	

APPENDIX C CONTENT ANALYSIS CODEBOOK

What's new in this codebook?

⇒ The Qualtrics survey has a "Back" button.
⇒ Shifted guidance/greater clarity on the 'THEMES' screening question (e.g., Youth Access, Federal, POS).
⇒ New guidance on "Wire" versus "Local" origin question.
⇒ Added links to the POS Reports to the Nation, which will likely be helpful for context, and you can read them while clocked in!
⇒ Clarifying notes on frame and dominant frame.
⇒ Clarifying notes on neutral versus mixed slant.
⇒ Please re-read media advocacy strategies.
⇒ Lots of nuance!

Introduction to the Study

This study, "Analysis of US Newspaper Coverage of Tobacco Control Issues Related to the Retail Environment," uses a carefully designed content analysis to describe, for the first time, a broad set of characteristics of mass media content related specifically to POS tobacco control policy in national and state-level newspapers.

The pages that follow explain how to code newspaper articles for the study.

Study Aims
1. Describe, using content analysis methods, the volume and characteristics (e.g., frame, source presence and type, evidence structure, degree of localization, slant) of a sample of US print newspaper content related specifically to POS tobacco control programming and policies from January 1, 2007 to December 31, 2014 in national and state level newspapers.
2. Determine whether the use of specific strategic communication elements (e.g., frame, source presence and type, evidence structure, degree of localization) in news articles is associated with overall article slant (pro-tobacco control, anti-tobacco control, mixed or neutral).

Method
Characteristics of newspaper content will be qualitatively evaluated and coded into discrete variable responses that can be quantitatively analyzed. Content analysis allows for the systematic categorization and analysis of themes, messages and meanings in communication text, according to rules and definitions. Analysis should be based on content only and free from coder bias and personal opinion.

Coding Procedure
The pages that follow offer specific coding instructions and operational definitions of key variables relevant to this study. This structured codebook and measures are informed by content analyses in the fields of tobacco control [57, 67, 77, 83, 90, 105] and health

promotion [50]. Special attention has been paid to studies of newspaper coverage of tobacco tax and smoke-free indoor air policy initiatives. Measures have been adapted from past work done by Drs. Moreland-Russell and Ribisl on my dissertation committee.

General Instructions

Articles for coding will come to you, the coder, in paper copy form with a unique article ID number. Only code one article at a time. First, look at the article and identify the ID number. Next, scan the article to identify the publication date and location, name of the newspaper, headline, and article type, circling or highlighting these pieces of information as you see them. During this scan, you might also circle or underline words or phrases that you know are or could be relevant to the inclusion and exclusion criteria and the measures in this study (e.g., sources, presentation of evidence, frames). Finally, read the article thoroughly and respond to the questions below. Continue to highlight relevant parts of the article when answering the questions. Coders should carefully follow the instructions provided when responding to each question to ensure reliability across coders.

Following are the steps of the coding process:
1. A structured codebook will be developed to give rules and definitions for study inclusion/exclusion and for coding content of included articles
2. A first draft of the codebook will be pilot tested by Allison and members of the committee
3. Codebook will be revised based on piloting and results of inter-rater reliability (IRR) calculations
4. Coders will be trained on the protocol and a random sample of 6 articles will be used for inclusion training
5. Coders will meet to compare coding and resolve differences; the codebook will be revised as needed until the protocol for inclusion is clear
6. AEM will duplicate code articles randomly and check IRR throughout

Coding Procedures

This is the Qualtrics link, be sure to bookmark it:

https://unc.az1.qualtrics.com/SE/?SID=SV_1yL1yYnP77JR9aZ

Article Demographics

D1. Coder ID

Select your name/initials from the list below.

[Qualtrics has a list]

D2. Article ID Number

Each article will have an assigned identification number between 4 and 6 digits in length, consisting of the state or national paper letter abbreviation, and a three-digit number. Write the number as it appears on the article. [_ _ _ _]

Coding for Inclusion or Exclusion [Screening]

Articles will be screened for inclusion into the study according to four variables:
1. Words present in the headline
2. Amount of tobacco content in the article
3. Inclusion of one or more main POS themes
4. Type of article

S1. Article Name/Headline

Type in the full title (the headline) of the article:

_____

[Double check you have entered the complete headline; double check for misspellings.]

S2. Headline Inclusion

To be included in the study, the article headline must include some variant of the words smoke, smoking, cigar, cigarette, electronic cigarette or tobacco. Select Yes or No for each.

Which of the following key words are present in the headline in one form or another?
S2A. Cigarette – Yes | No
S2B. Cigar, Little Cigar or Cigarillo – Yes | No
S2C. Tobacco – Yes | No
S2D. Smoke or smoking or smoker(s) – Yes | No
S2E. Electronic cigarette, e-cigarette, vaping device or variant – Yes | No
S2F. Snus, snuff, chewing tobacco, chew, dip or variant? – Yes | No
S2G. Other tobacco product not listed here (hookah) – Yes | No

[If "NO" for all S2A-S2G, then STOP & EXCLUDE; if "YES" for any S2A-S2G, then CONTINUE]

S3. Tobacco Content in Text Inclusion

The article must have one solid paragraph (at least four sentences) of tobacco-related content rather than simply a passing reference [17, 75].

0. No -- Article does not have ≥ 4 sentences/one full paragraph [STOP; EXCLUDE]
1. Yes -- Article has ≥ 4 sentences/one full paragraph of tobacco-related content [CONTINUE]

EDIT 6/1/2015: What does it mean to be "tobacco-related"?

Really, it means it needs to be related to tobacco control and prevention as a project of public health people.

What is NOT tobacco-related?
  ⇒ A crime, burglary or robbery story that happened at a tobacco retailer is… a crime story.
  ⇒ Smoked Ribs at Chili's Restaurant is about Chili's Restaurant
  ⇒ A story about drug paraphernalia that is supposedly "used for tobacco", in the absence of real talk about tobacco prevention and control, is a drug paraphernalia story

What IS tobacco-related?
  ⇒ E-cigarettes, hookah, shisha ARE tobacco products.
  ⇒ Code each article knowing that the vaping device, cig-alike, hookah, etc., is a tobacco product. When in doubt, replace the mention of the e-cigarette with "Cigarette" and code the article that way.

S4. Main Article Theme (Tobacco Issue Covered)

Only articles with certain "themes" will be included in this study. To be included in the study, articles must include one or more main point-of-sale (POS) themes.

We are screening articles for inclusion according to a commonly used [8] coding scheme developed by Clegg Smith and colleagues [90]. We have adapted it to include "POS themes", such as: tobacco retailer density, advertising, product placement, health warnings, non-tax approaches to raising price, or other POS policies (e.g. age of sale, flavor restrictions, or minimum package size requirements). Articles with a POS theme discuss tobacco product sales or marketing (e.g., price, product, placement, promotion) in the retail environment, or public health policy, systems or environmental interventions affecting the sales and marketing of tobacco products in the retail environment.

The themes you will encounter in articles are defined below. The article theme is the specific topic featured in the article related to tobacco. For it to be a "theme", it should be in *more than one paragraph* unless the article has only one paragraph. You can choose more than one theme.

	Theme	Definition for this Study
A	Negative health consequences of tobacco product use	Adverse health outcomes (e.g., cancer, heart disease, emphysema, COPD) associated with tobacco use or exposure to second- or thirdhand smoke; includes e-cigarettes and other electronic nicotine delivery systems (ENDS). ☐EDIT 6/1/2015: This is an article about "how bad tobacco is".
B	Epidemiology: Tobacco products or product use	Tobacco product introduction and or consumption trends and reports on usage; includes e-cigarettes and other electronic nicotine delivery systems (ENDS). This can be epidemiologic articles for the national, state or local levels; likely more national in scope, though. Example: CDC reporting trends. ☐EDIT 6/1/2015: This is an article about who is using how much of what tobacco product.
C	Clean Indoor Air/Smoke-free Policies	Legislative action or discussion or legal guidelines prohibiting the use of tobacco within a community or organization (e.g., outdoor smoking restrictions, adding electronic cigarettes to existing smoke free policies). Smoke free policies are implemented at the state or local level. E.g., "Tobacco Free Schools" ☐EDIT 6/1/2015: This is an article about passing a smoke free air law.
D	Excise Tax Policies	Legislative action or discussion or legal guidelines about raising the cost of tobacco products, including electronic cigarettes, through excise taxes. Excise tax policies are implemented at the federal, state, or local level. This category is for articles about excise taxes ONLY; this does not include *non-tax* approaches to raising price. Tax evasion is about crime, not about passing a new tax policy. Articles about a federal excise tax require 'YES' for D (Tax) and for H (Fed). ☐EDIT 6/1/2015: This is an article about raising the tax.
E	Youth Access/Age-Based Policies	Legislative action or discussion or legal guidelines about age requirements for the purchase and sale

		of tobacco products. This also includes stings and enforcement.
		☐EDIT 6/1/2015: This is an article about enforcing the current 18 and over tobacco sales/age of purchase law, with stings, etc. This is also an article about raising the required age of purchase/sale to 19 or 21.
		To clarify: Many states/localities are doing POS work, and adding "Tobacco 21" as part of it. If that is the case, code for 'YES' for E (Age) and 'YES' for F (POS). If the article is only about enforcement (e.g., "stings" or "compliance checks") with current age laws, that is not a POS themed article.
F	Point of Sale Policies	Tobacco retailer licensing policies; reducing or restricting the number, location, density and type of tobacco retail outlets (e.g., restricting tobacco sales near schools, in pharmacies); restricting point of sale advertising; restricting product placement; implementing point of sale health warnings; raising tobacco prices through *non-tax* approaches (minimum price, restricting price promotions, coupon redemption ban); flavor, product or package restrictions; other policies related to the sales and marketing of tobacco products in the retail setting (e.g., raising the minimum legal sales age to 21). Graphic health warnings on the actual tobacco package or plain packaging can be included here and also with 'Other' for outside the US.
		☐EDIT 6/1/2015: These are the policy domains and options that I really care about, for the purposes of this study. If you don't see something from the list in the article you're coding, it's likely that I'm not interested (for this study). The line between what is interesting and not interesting also has to do with the data I have that tracks policy implementation in each of 50 states.
G	Non-Policy Tobacco use Prevention/Cessation/Education Activities	Individual-level counseling, media campaigns, events, and associated with preventing or ending current and future tobacco use; includes e-cigarettes or ENDS. Articles about the Truth

		campaign, TIPS campaign, education programs, Quitlines, state spending on tobacco prevention, community cessation programs, etc.
H	Federal policy/regulation of any type (e.g., Family Smoking Prevention and Tobacco Control Act)	Articles that discuss Federal-level regulations, for example, the 2009 passage of the Family Smoking Prevention and Tobacco Control Act, or any Food and Drug Administration (FDA) regulation of tobacco at the federal level. Federal level is key here. Anything FEDERAL goes here – this includes articles related to the military or other areas of the federal government (ie: banning tobacco sales on US Navy/Marines bases and ships). Articles about a federal excise tax require 'YES' for D (Tax) and for H (Fed). Note some Federal policies have POS aspects; they are still Federal policies and you may check YES for both. ☐EDIT 6/1/2015: This will pertain mostly to articles in the June 2009-era, as that is when the Family Smoking Prevention and Tobacco Control Act (FSPTCA or Tobacco Control Act or TCA) was ultimately signed by President Obama. Check both FEDERAL and POS if the retail-specific provisions are discussed, and they likely will be. For example, provisions of the Tobacco Control Act include: banning modified risk labeling such as "light" or "mild" or "low-tar", new FDA power to restrict marketing, ban candy or fruit flavored cigarettes and smokeless tobacco (but not flavored/candy other tobacco products like cigarillos). When you find these articles and need to code them, this is what to do: Check Federal and POS at the initial screening 'Theme' stage. When it asks you about POS policy domains, simply click "Federal". That's all you need to do. It will be rare to see other POS policy domains discussed with the FSPTCA. If you're confused, send me an email. Articles about a federal excise tax require 'YES' for D (Tax) and for H (Fed).
I	Other	Articles that do not match any other themes or do not have to do with the United States (e.g., graphic health warning or plain packaging policy in Australia). Will include tobacco industry news;

		tobacco industry litigation/settlement; unintended tobacco product use damage from fire, litter or accidents; addiction/addictiveness (which is just about addiction and not about ultimate health outcomes such as cancer deaths or about epidemiologic data, e.g., the addictiveness of new tobacco products); farming/trade with tobacco as a crop; economics/monetary costs of smoking; articles about tobacco industry or companies.

Select Yes or No for the presence of each theme:

      S4A. Negative health consequences of tobacco product use – Yes | No
      S4B. Tobacco products or product use epidemiology – Yes | No
      S4C. Clean Indoor Air/Smoke-free Policies – Yes | No
      S4D. Excise Tax Policies [Price increase through taxes Only] – Yes | No
      S4E. Youth Access/Age-Based Policies – Yes | No
      S4F. Point of Sale/Retail Policies – Yes | No – [If 'No' for S4F, STOP & EXCLUDE]
      S4G. Non-Policy Tobacco use Prevention/Cessation/Education Activities – Yes | No
      S4H. Federal policy/regulation of any type (e.g., FSPTCA)– Yes | No
      S4I. Other – Yes | No

      [If "NO" for S4F, then STOP & EXCLUDE; if "YES" for S4F, then CONTINUE]

S5. Article Type

Note: For Aim 1 (descriptive coding of characteristics of content), included article types are news/feature stories, LTEs and editorials. For Aim 2 (analysis of relationship between characteristics of content), only news articles are included. Classify the type of article according to the following choices:

    1. <u>News article</u>. A news article provides information or facts about a topic or event. News articles need to have a byline in order to be coded. The byline gives the name, and often the position, of the writer of the article. News articles are factual accounts. You will know this content is 'news' if it includes a 'BYLINE' with the name of an author.

    2. <u>Editorial</u>. A statement or article <u>written by a news organization</u> that expresses the opinion of the <u>editor</u>, <u>editorial board</u>, or <u>publisher</u>. An editorial is the opinion of the newspaper. As a collective, the newspaper management, led by the news department, makes a determination about forming an opinion about issues in the community. Editorials will NOT have a byline – if an individual is listed as the author (or signs their name), it is most likely a Letter to the Editor (see below).

    3. <u>Letter to the Editor</u>. Letter to the editor- A <u>letter</u> sent to a <u>publication</u> typically by written a member of the community or organization about issues of concern to its

readers. It will be formatted as a letter, and signed by a person or organization. Note, some articles are categorized as "editorial" or "opinion" but are written by community members/local experts - not the newspaper itself – these are categorized as Letters to the Editor in this study, for consistency.

4. Other content type or duplicate. Other content is not included in this study. For example: industry stock or earnings reports, cartoons, photos without text content, or duplicates. If it's a duplicate, make a note and email Allison with the ID numbers of the duplicate articles. Duplicate means same paper, same headline day, same byline, everything. If the headline is a little bit different, but the article text/ newspaper / author / publishing date are all the same, it's okay to count as a duplicate. I will do searches/sorting by headline at the end of data collection to clean this up as needed. Still send me a note about situations like this. – STOP & EXCLUDE

What is the type of the article?
1. News
2. Editorial
3. Letter to the Editor
4. Other or Duplicate – [If 'other', STOP & EXCLUDE]

★□If "Other" for S5, then STOP & EXCLUDE; only News, Editorials and LTEs are

included. ★

[Created skip patterns in Qualtrics to exclude articles appropriately. INCLUDE ONLY articles with appropriate headline, sufficient tobacco-related content, appropriate type, has one or more main POS themes.]

Coding for Included Articles

D3A. Publication State (location/newspaper origin) and Newspaper

Select the state where the newspaper was published. Note five of the newspapers in the sample are considered to be "National" in scope, without regard to publication location (e.g., The Wall Street Journal, USA Today, New York Times, Los Angeles Times, NY Daily News).

Response categories are listed here:

Natl_WSJ		Natl_USAToday		Natl_NYTimes		Natl_LATimes		Natl_NYDailyNews	
AL	AK	AZ	AR	CA	CO	CT	DE	FL	GA
HI	ID	IL	IN	IA	KS	KY	LA	ME	MD
MA	MI	MN	MS	MO	MT	NE	NV	NH	NJ
NM	NY	NC	ND	OH	OK	OR	PA	RI	SC
SD	TN	TX	UT	VT	VA	WA	WV	WI	WY

For reference, see a list of states and abbreviations at
http://www.50states.com/abbreviations.htm

D3B. Newspaper ID

Select the newspaper where the article is published from the list below.

[Qualtrics programming or skip pattern here to present only the newspapers that are a part of that state, or to auto-populate the national newspaper name.]

D4. Issue Date/Date of Publication

The date of the article should be coded with a two-digit month, two-digit date and four-digit year. For example, January 3, 2008 should be coded as 01/03/2008 (mm/dd/yyyy).

[__ __ / __ __ / __ __ __ __]
Month/Day/Year

Q3. Wire Content/Article Origin

Classify the origin of the article according to the following choices:
1. National Wire Service Duplicate – The article is used without any modification from a national wire service (Associated Press, UPI, Reuters)
2. National Wire Service Modified – The article has a lot of lifted content from a wire article, with some modification by the local publisher (note phrase such as "AP contributed to this report")
3. Local – The article is written by a local journalist with byline
4. Cannot Determine – Cannot determine if the article comes from a wire service or is local

EDIT 6/1/2015: Wire Content/Origin. It is very difficult to determine the difference between "National Wire Service Duplicate" and "National Wire Service Modified". Those two categories will likely be collapsed in the final analysis — SO, as you are coding, only use "Cannot Determine" if you cannot determine whether it is "local" or shows at least some evidence of Wire Service. Note AP is a wire service — you are looking for AP or Associated Press or Bloomberg News somewhere on the article, in the byline, or in the descriptive/cataloging text at the bottom of the article. If you don't see those markers, AND see an author with Byline and newspaper name, and Copyright to the local paper at the bottom of the article, it's probably local. **If you have an article that seems to give some credit to the Associated Press, or another wire service, but you can't tell if it's wire duplicate or wire modified, choose wire duplicate.

Q4A. POS Policy <u>Domains</u> Present

This item asks you to code the different policies that are discussed in the article. First you will choose the POS policy domains that are discussed. Second, you will choose specific POS policy options covered under the domain. See "<u>Point-of-Sale Strategies: A Tobacco Control Guide</u>" for more information about each policy.

EDIT 6/1/2015: If you haven't read the POS Strategies report, linked above, go ahead and do that (on the clock). The POS Reports to the Nation (<u>Find them here.</u>) may also be helpful and give this study context.

Note whether the policy domain is present in the article headline or body text. (Yes | No)

1. Tobacco retailer licensing, locations and density – Yes | No
2. Advertising – Yes | No
3. Product placement – Yes | No
4. POS health warnings – Yes | No
5. Non-tax price approaches – Yes | No
6. Other POS policy – Yes | No
7. Federal Law (e.g., FSPTCA) – Yes | No

[SKIP/Display logic in Qualtrics: If <u>domain</u> is not present in Q4A, policy <u>options</u> are not presented in Q4B.]

Q4B1-6. POS Policy <u>Options</u> Present

Note whether the policy option is present in the article headline or body text. (Yes | No)

Q4B1. Tobacco retailer licensing, locations and density
   A. Establishing or strengthening tobacco retailer licensing regulations (Density) -- Yes | No
   B. Limiting or capping the total number of licenses in a specific area (e.g., on <u>specific</u> military bases or in Westminster, Mass) (Density) -- Yes | No
   C. Establishing or increasing licensing fees (Density) -- Yes | No
   D. Prohibiting tobacco sales in locations youth frequent (e.g., near schools or parks) (Density) -- Yes | No
   E. Restricting retailers operating within a certain distance of other tobacco sellers (Density) -- Yes | No
   F. Restricting retailers in certain zones (e.g., banning retailers in residential zones) (Density) -- Yes | No
   G. Prohibiting the sale of tobacco products at certain establishment types (e.g., pharmacies, restaurants, prisons, military bases/ships) (Density) [Note this includes CVS voluntary policy decision to stop selling tobacco in pharmacies]-- Yes | No
   H. Limiting number of hours or days in which tobacco can be sold (Density) -- Yes | No

Q4B2. Advertising
   I.   Limiting the times during which advertising is permitted (e.g., after school hours on weekdays) (Advertising) -- Yes | No
   J.   Limiting the placement of advertisements at certain store locations (e.g., within 1,000 feet of schools) (Advertising) -- Yes | No
   K.   Limiting the placement of advertisements within the store (e.g., near cash register) (Advertising) -- Yes | No
   L.   Limiting placement of outdoor store advertisements (Advertising) -- Yes | No
   M.   Limiting manner of retail advertising by banning certain types of tobacco advertisements (e.g., outdoor sandwich board style ads) (Advertising) -- Yes | No
   N.   Banning all types of ads regardless of content (e.g., sign codes that restrict ads to 15% of window space) (Advertising) -- Yes | No

Q4B3. Product placement
   O.   Banning product displays/requiring retailers to store tobacco products out of view (e.g., under counter or behind opaque shelving) (Product Placement) -- Yes | No
   P.   Banning self-service displays for other (non-cigarette) tobacco products or all tobacco products (Product Placement) -- Yes | No
   Q.   Restricting the number of products that can be displayed (e.g., only allow retailers to display one sample of each tobacco product for sale) or the amount to square footage dedicated to tobacco products (Product Placement) -- Yes | No
   R.   Limiting times during which products are visible (e.g., after school hours on weekdays) (Product Placement) -- Yes | No

Q4B4. POS health warnings
   S.   Requiring graphic warnings at the point of sale (Health Warnings) -- Yes | No
   T.   Requiring the posting of Quitline information in tobacco retail stores (Health Warnings) – Yes | No

Q4B5. Non-tax price approaches
   U.   Establishing cigarette minimum price laws (Non-Tax Price Approaches) -- Yes | No
   V.   Banning price discounting/multi-pack options (Non-Tax Price Approaches) -- Yes | No
   W.   Banning *distribution* or *redemption* of coupons (Non-Tax Price Approaches) -- Yes | No
   X.   Establishing mitigation feels (e.g., a fee to clean up cigarette litter) (Non-Tax Price Approaches) -- Yes | No
   Y.   Requiring disclosure or Sunshine Law for manufacturer incentives given to retailers (Non-Tax Price Approaches) -- Yes | No

Q4B6. Other POS policies
   Z.   Banning flavored other tobacco products (Note this is not cigarettes/smokeless as in FSPTCA) (Other) -- Yes | No
   AA.   Requiring minimum pack size for other tobacco products (Other) -- Yes | No
   BB.   Raising the minimum legal sale age (MLSA) to buy tobacco products (Note 18 for E-cigs or Tobacco 21)(Other) – Yes | No

CC.   Other policy not listed here -- Yes | No

Examples of "Other POS Policies" and "CC. Other policy not listed here." that have been found so far in coding:
- Banning tobacco/alcohol self-checkout sales in OR
- Banning free tobacco product samples/free distribution in OR
- Ban on vending machines that sell cigarettes in OR (From AEM: Understandable to want to put this in licensing domain; establishment types policy option but I prefer 'other; other' because it will be rare – since it is a Federal law to ban sales in vending machines currently.)

Q5. Frame

A news frame is a theme or central organizing idea within an article. News frames involve selection and emphasis of certain aspects of an issue and provide context for the reader regarding the issue.

EDIT 6/1/2015: Underlining existing text in codebook, below, to draw attention to "there must be a minimum of two to three sentences on the topic for it to be considered a frame". Keep doing what you're doing, though, IRR is high.

For the purposes of this study, there must be a minimum of two to three sentences on the topic for it to be considered a frame. There can be more than one frame in an article. Frames can also be positive, negative or neutral for tobacco control objectives.

Please select each frame that is presented based on the definitions below. If you choose "Other," please write what you determine the frame to be in the space provided.

Frame: the perspective from which the argument is presented. Choices are:
A. **Health**. Health effects on individuals and society; general behaviors and health consequences of tobacco use; addictive nature of products. Health issues, ETS exposure, health risks. – Yes | No
B. **Economic**. Impact/consequences on economy, retailers, hospitality trade; monetary reasons for or against tobacco control policies/interventions, for example impacts on business profits or healthcare costs (societal level) – Yes | No
C. **Political/Rights**. Political story with emphasis on political actors, lobbying; ideological reasons for or against tobacco control. Democratic rights/civil liberties; right to smoke, right to not be exposed to smoke or tobacco marketing; individual's free liberties as a smoker, nonsmoker, worker, patron, business owner/retailer – Yes | No
D. **Regulation**. Creation of bylaws, regulation, ordinances, or policy implementation is emphasized in the article, as a way to solve/not solve the problem.
E. **No clear frame**/not applicable. – Yes | No
F. **Other** [Write in; this category will be used a lot during pilot testing. See Appendix; options could be technical/legal; society/societal change, norms, social modeling and cultural habits]. – Yes | No

Q6. Dominant Frame

EDIT 6/1/2015: IRR is moderate on this variable. Remember to default to the headline and first paragraph about which frame is "dominant". If you still cannot tell what is "dominant" based on the headline and first paragraph, how many times does the frame repeat through the article? That is also a good clue. If it seems like there are two <u>dominant</u> frames, choose 1 based on the headline, lead paragraph, and number of times the subject repeats throughout the article.

Indicate the frame predominant or most frequently mentioned frame in the article; this is the dominant frame. <u>The dominant frame may be evident in the headline or lead paragraph</u>, but you must read the entire article before determining the dominant frame. If you have questions or cannot determine frames, please mark the article and we will clarify later.

[SKIP/Display logic in Qualtrics: If frame is not present in Q5, cannot be 'Dominant' in Q6.]

1. Health
2. Economic
3. Political/Rights
4. Regulation
5. No clear frame
6. Other

Q7A. Sources Present

You are coding the number and types of sources present in the article. Sources include any individual or organization that is directly quoted in articles; they do not have to mention tobacco.

      Are direct quotes present in the article? Yes | No

      [SKIP/Display logic in Qualtrics: If no sources are identified, do not display Q7B.]

Q7B. Source Number and Type

Sources include any individual or organization that is directly quoted in articles. However, if an individual or organization is listed or noted because they are part of the story, but not necessarily because they provided information for the story, they should not be counted as a source. For example, in an article that says the CDC is involved in a research study, but does not provide information directly from the CDC or quote someone from the CDC, the CDC should not be considered a source.

Please write YES or NO; list the <u>number of sources directly quoted</u> as they fit into each of the categories below.

Note: No matter how many times the source speaks, it still is 1 source if it speaks more than one time. In this study, we are coding the presence of varying types of sources, rather than the volume of content any one source provides in the article. That is a different study.

EDIT 6/1/2015: Drawing attention to this existing coding note about CVS. They are either a tobacco retailer or a health care provider, depending on what is happening at the time of the article. Also note clarity on source definitions.

Note: About CVS, a "former tobacco retailer". For this study, code CVS as a tobacco retailer if they were selling tobacco at the time of the article. CVS sold tobacco until September/October 2014 – that means you will likely code them as a tobacco retailer unless the article was published after October 1, 2014 and before December 31, 2014 when this study period ended.

Q7B1. Community member/concerned citizen (e.g., local person or labor group or business analyst/person)
Q7B2. Educational institutions staff/faculty/spokesperson (e.g., PhD at university, research institute, school district)
Q7B3. Government or law enforcement (e.g., County Council, State Legislature, City Commissioner, Police Chief, except health department)
Q7B4. Health department officials/staff (city, county, state, national)
Q7B5. Hospital/Healthcare provider staff/representative/attorney/consultant/spokesperson (e.g., MD, Dr., hospital staff; health care analyst)
Q7B6. Hospitality: restaurant, bar, casino
Q7B7. Public health advocacy or outreach/nonprofit group/coalition (e.g., Tobacco-Free Missouri, American Lung Association, Campaign for Tobacco Free Kids, CounterTobacco.org, Coalition for Health…)
Q7B8. Smoker/vaper/tobacco user (individual)
Q7B9. Tobacco industry or their representative/spokesperson
Q7B10. Tobacco retailer or retailer association (e.g., convenience store owner or NATO) or their representative/spokesperson
Q7B11. Tobacco users association/smokers rights advocacy group (e.g. Vaper's association) or their representative/spokesperson

Q8A. Evidence Structure

Research evidence structure will be coded according to a measure adapted from two previous studies [35, 43]. By "evidence", we are looking for data (statistics/numbers) or personal anecdotes (stories or narratives) within the article.

Code the article according to the following schema:

1. **No evidence at all.** No data or statistics are present; no personal anecdotes or stories (narratives) are present.

2. **Data/statistics only**. Data or statistics are presented (e.g., according to the Texas state tobacco survey, 25% of Texans are smokers). The data presented do not necessarily have to be numbers. That is, it can be a textual description (e.g., "Revenues are down since the policy was implemented; casinos in Illinois are losing business." Or "Twenty five stores will be affected.").

3. **Story/narrative/personal anecdote only**. Personal anecdotes or narrative stories are present in the article. This is a specific experience, real-life event or problem recounted in the article. It is one person's story (or a family) and is NOT broadly defined. For example, a concerned citizen talks about daily exposure to tobacco advertisements, or a tobacco retailer is concerned about his or her business closing down because of potential regulation. [Inherently sourced.]

EDIT 6/1/2015: Remember that a personal narrative is like a testimonial. It's compelling, like an "authentic voice" in media advocacy, and the person is telling a real life story — not hypothesizing or projecting what could happen in the future, but rather recounting a real life experience. There is no threshold for length with the anecdote/narrative, but likely two sentences (or one very robust, good sentence) is about the minimum.

4. **Both data and story.** Both data/statistics and a story are present in the article.

[SKIP/Display logic in Qualtrics: If 'data/statistics only' in Q8A, display Q8B to identify sourced versus not sourced.]

Q8B. Data Source

"Yes" means that sources of data are identified in the article (e.g., according to Missouri state youth tobacco survey, 17% of Missouri youth are smokers). If several pieces of data are presented, but not all have associated sources, still choose YES. The fact that at least one source is given lends more credibility to the author than if no sources are given.

Q8B. Is at least one source clearly identified for the data?

Yes, at least one source for the data is identified
No, no source is identified

Q9A. Degree of Localization - Quotes

Q9A. Does the article contain local quotes attributed to a specific person who is identified by name and/or position and from the state in which the newspaper is published (or representing an organization based in the state)?

Q9A. Yes | No

Q9B. Degree of Localization - Angle

Q9B. Without regard to sources present, does the article contain a <u>local angle</u> -- meaning a story, information or statistics about a local (to the state) problem, individual or organization?

Q9B. Yes| No

Q10. Overall Slant

Select one 'slant' for the article. Articles that support further education, regulation or restriction are in favor of tobacco control. Articles where the tobacco or e-cigarette/vaping industry is upheld, or regulations are overturned are coded as against tobacco control. Clear statements must be present in content to justify coding a slant as positive or negative. Mixed articles include both sets of opinions or news, or consequence for tobacco control is not clear. It is also possible that no slant is specified; this is neutral.

Select the slant:
1. <u>Anti-tobacco control</u>: information that <u>opposes</u> tobacco cessation and prevention efforts.
2. <u>Neutral</u>: the item does not express an opinion
3. <u>Mixed</u>: the item provides both points of view
4. <u>Pro-tobacco control</u>: information that <u>supports</u> tobacco cessation and prevention efforts

EDIT 6/1/2015: Remember that mixed expresses both opinions clearly — and you should be able to draw out text to support pro-tobacco control and anti-tobacco control. Neutral is just that. Note these two categories may end up collapsing in the analysis (based on my hypotheses) but it's still very important to get it right. Mark an article as mixed when you find quotes both PRO and ANTI. Neutral will be rare because it truly offers no opinion at all, rather reporting generic news without any for or against. Neutral also (often) comes with no quotes or anything to add 'spice' to the article. Just the facts. Boring. It is true that quotes may make the article more PRO or more ANTI.

Q11. Newsworthy/Media Advocacy Elements

What makes this story newsworthy? For each "Yes" selection, you should be able to identify verbatim applicable text.

Q11A. **Controversy/Conflict.** Are there adversaries or other tensions in the story? – Yes | No
Q11B. **Broad interest.** Does this story affect a lot of people? – Yes | No [Code NO if relates to special group.]
Q11C. **Injustice or Irony.** Are there basic inequalities or unfair circumstances, or something ironic or unusual being presented? Is hypocrisy revealed? – Yes | No
Q11D. **Local peg.** Is this story made to be important or meaningful to local (to the state) residents? – Yes | No
Q11E. **Authentic voice.** Is there a person with direct experience with the issue who is providing an authentic voice in the story? – Yes | No

Q11F. **Breakthrough.** Does this story mark and important historical "first" or other event? – Yes | No

Q11G. **Anniversary peg.** Is this story linked to the anniversary of a local, national, or topical historical milestone? – Yes | No

Q11H. **Seasonal peg.** Is this story attached to a holiday or seasonal event? – Yes | No

Q11I. **Celebrity.** Is there a celebrity involved with the issue? – Yes | No

Q11J. **Social Math.** Are large numbers translated to become comprehensible and compelling, by placing them in a social context that provides meaning? – Yes | No

Q12. Specific Populations mentioned in the article

Select whether the population(s) below are specifically identified in the article. The population(s) should be featured in 2 or more paragraphs.
A. Youth/young adults (e.g., under 18, 18-25 years, minors, kids) – Yes | No
B. Race/ethnicity (e.g., Hispanic, Asian, African-American) – Yes | No
C. Socioeconomic status (e.g., Medicaid recipients, blue collar workers) – Yes | No
D. Sex (e.g., males versus female) – Yes | No
E. Sexual Orientation/Gender ID (e.g., gay, lesbian, transgender) – Yes | No

	Newspaper	Publication City	M-F Circulation
US National Papers	1. The Wall Street Journal (PQ)	New York, NY	2,293,798
	2. USA Today (PQ)	McLean, VA	1,713,833
	3. The New York Times	New York, NY	1,613,865
	4. Los Angeles Times (PQ)	Los Angeles, CA	641,369
	5. NY Daily News (AN)	New York, NY	535,875
Alabama	6. The Birmingham News (AN)	Birmingham	91,868
	7. Press-Register (AN)	Mobile	62,466
	8. The Huntsville Times (AN)	Huntsville	39,941
	9. The Dothan Eagle (AN)	Dothan	25,984
	10. Decatur Daily (AN)	Decatur	18,890
	Population 4,779,736	Sample reach (%)	239,149 (5.0%)
Alaska	11. Anchorage Daily News (AN)	Anchorage	41,684
	12. Fairbanks Daily News-Miner (AN)	Fairbanks	12,275
	Population 710,231	Sample reach (%)	53,959 (7.5%)
Arizona	13. Arizona Daily Star (AN)	Tucson	82,305
	14. Yuma Sun (AN)	Yuma	11,430
	15. Arizona Daily Sun (AN)	Flagstaff	9,246
	16. Mohave Valley Daily News (AN @ DUKE)	Bullhead City	7,478
	17. Casa Grande Dispatch (AN @ DUKE)	Casa Grande	6,935
	18. Sierra Vista Herald (AN @ DUKE)	Sierra Vista	6,912
	19. Douglas Dispatch (AN @ DUKE)	Douglas	1,567
	Population 6,392,017	Sample reach (%)	125,873 (2.0%)
Arkansas	20. Democrat Gazette (AN @ DUKE)	Little Rock	163,933
	21. Benton County Daily Record (AN @ DUKE)	Bentonville	17,975
	Population 2,915,918	Sample reach (%)	181,908 (6.2%)
California	22. San Francisco Chronicle (AN)	San Francisco	212,550
	23. U-T San Diego (AN)	San Diego	195,102
	24. The Sacramento Bee (AN)	Sacramento	186,153
	25. The Orange County Register (AN)	Santa Ana	175,851
	26. San Jose Mercury News (AN)	San Jose	167,906
	27. The Press-Enterprise (AN)	Riverside	126,585
	28. The Fresno Bee (AN)	Fresno	96,093
	29. Daily News of Los Angeles (AN)	Woodland Hills	81,266
	30. Daily Breeze (AN)	Torrence	67,397
	31. The Modesto Bee (AN)	Modesto	57,306

	32. Ventura County Star (AN)	Camarillo	53,571
	33. The Press Democrat (AN)	Santa Rosa	51,925
	34. Inland Valley Daily Bulletin (AN)	Ontario	49,966
	35. Valley Times (AN)	Pleasanton	44,354
	36. The Bakersfield Californian (AN)	Bakersfield	39,422
	37. Pasadena Star-News (AN)	West Covina	36,097
	38. The Tribune (AN)	San Luis Obispo	33,104
	39. West County Times (AN)	Richmond	32,263
	40. Tri-Valley Herald/San Ramon Valley Herald (AN)	Pleasanton	31,317
	41. The Daily Review (AN)	Hayward	31,183
	42. The Record (AN)	Stockton	30,663
	43. Santa Barbara News-Press (AN)	Santa Barbara	27,421
	44. The Argus (AN)	Fremont	26,619
	45. Marin Independent Journal (AN)	San Rafael	26,548
	Population 37,253,956	Sample reach (%)	1,880,662 (5.0%)
Colorado	46. The Denver Post (AN)	Denver	402,564
	47. The Gazette (AN)	Colorado Springs	64,394
	Population 5,029,196	Sample reach (%)	466,958 (9.3%)
Connecticut	48. The Hartford Courant (AN)	Hartford	131,564
	49. New Haven Register (AN)	New Haven	44,651
	50. Connecticut Post (AN)	Bridgeport	43,490
	Population 3,574,097	Sample reach (%)	219,705 (6.1%)
Delaware	51. Delaware State News, Maryland State News (AN @ DUKE)	Dover	12,498
	Population 897,934	Sample reach (%)	12,498 (1.4%)
Florida	52. Tampa Bay Times (AN)	St. Petersburg	240,024
	53. Orlando Sentinel (AN)	Orlando	162,636
	54. The Miami Herald (AN)	Miami	135,533
	55. The Tampa Tribune (AN)	Tampa	110,540
	56. The Florida Times-Union (AN)	Jacksonville	91,549
	57. The Palm Beach Post (AN)	West Palm Beach	88,231
	58. Daytona Beach News-Journal (AN)	Daytona Beach	62,002
	59. Sarasota Herald-Tribune (AN)	Sarasota	60,141
	Population 18,801,310	Sample reach (%)	950,656 (5.1%)
Georgia	60. Atlanta Journal-Constitution (AN)	Atlanta	154,823
	61. Gwinnett Daily Post (AN)	Lawrenceville	61,567
	62. The Augusta Chronicle (AN)	Augusta	55,103
	63. The Macon Telegraph (AN)	Macon	39,343
	64. Savannah Morning News (AN)	Savannah	33,137
	65. Ledger-Enquirer (AN)	Columbus	29,487
	66. Athens Banner Herald (AN)	Athens	18,977

	67. The Brunswick News (AN)	Brunswick	17,800
	68. Marietta Daily Journal (AN @ DUKE)	Marietta	15,117
	69. LaGrange Daily News (AN)	Lagrange	13,400
	70. The Albany Herald (AN @ DUKE)	Albany	13,237
	71. Valdosta Daily Times (AN @ DUKE)	Valdosta	12,006
	72. The Daily Citizen (AN @ DUKE)	Dalton	11,040
	73. The Times-Herald (AN @ DUKE)	Newnan	10,990
	74. Waycross Journal-Herald (AN)	Waycross	9,304
	Population 9,687,653	Sample reach (%)	495,331 (5.1%)
Hawaii	75. Honolulu Star-Advertiser (AN)	Honolulu	155,654
	76. Hawaii Tribune Herald (AN @ DUKE)	Hilo	15,774
	Population 1,360,301	Sample reach (%)	171,428 (12.6%)
Idaho	77. The Idaho Statesman (AN)	Boise	46,054
	78. Coeur D'Alene Press (AN)	Coeur D'Alene	21,340
	79. Lewiston Morning Tribune (AN)	Lewiston	20,626
	Population 1,567,582	Sample reach (%)	88,020 (5.6%)
Illinois	80. Chicago Sun-Times (AN)	Chicago	263,292
	81. Daily Herald (AN)	Arlington Heights	96,073
	82. Peoria Journal Star (AN)	Peoria	57,819
	83. Belleville News-Democrat (AN)	Belleville	43,401
	84. Rockford Register Star (AN)	Rockford	42,923
	85. The State Journal-Register (AN)	Springfield	37,476
	86. The Herald News (AN)	Joliet	35,757
	87. SouthtownStar (AN)	Tinley Park	34,746
	88. The Pantagraph (AN)	Bloomington	33,080
	Population 12,830,632	Sample reach (%)	644,567 (5.0%)
Indiana	89. The Times (AN)	Munster	86,841
	90. Evansville Courier & Press (AN)	Evansville	55,923
	91. Post Tribune (AN)	Merrillville	52,106
	92. The Journal Gazette (AN)	Fort Wayne	49,173
	93. Herald -Times (AN)	Bloomington	25,732
	94. Kokomo Tribune (AN)	Kokomo	20,100
	95. News-Sentinel (AN)	Fort Wayne	15,737
	96. Chronicle-Tribune (AN)	Marion	11,793
	97. The Herald (AN)	Jasper	11,317
	Population 6,483,802	Sample reach (%)	328,722 (5.1%)
	98. The Gazette (AN)	Cedar Rapids	44,566
	99. Waterloo Courier Cedar Falls (AN)	Waterloo	32,247
	100. Sioux City Journal (AN @ Duke)	Sioux City	30,997
	101. Telegraph Herald (AN)	Dubuque	24,916
	102. The Hawk Eye (AN)	Burlington	16,135
	103. Creston News Advertiser (AN)	Creston	5,492

	104. Atlantic News Telegraph (AN)	Atlantic	3,398
	Population 3,046,355	Sample reach (%)	157,751 (5.2%)
Kansas	105. The Wichita Eagle (AN)	Wichita	63,673
	106. The Topeka Capital-Journal (AN)	Topeka	32,819
	107. Lawrence Journal-World (AN)	Lawrence	26,238
	108. The Hutchinson News (AN)	Hutchinson	25,749
	Population 2,853,118	Sample reach (%)	148,479 (5.2%)
Kentucky	109. Lexington Herald-Leader (AN)	Lexington	82,537
	110. Owensboro Messenger-Inquirer (AN)	Owensboro	20,613
	111. Paducan Sun (AN)	Paducah	19,618
	112. Daily News (AN)	Bowling Green	18,834
	113. The Daily Independent (AN @ DUKE)	Ashland	13,124
	114. The Commonwealth-Journal (AN @ DUKE)	Somerset	9,741
	115. The Gleaner (AN)	Henderson	8,846
	116. The News Enterprise (AN @ DUKE)	Elizabethtown	8,214
	117. The Messenger (AN @ DUKE)	Madisonville	7,422
	118. The Winchester Sun (AN @ DUKE)	Winchester	7,209
	119. Harland Daily Enterprise (AN)	Harlan	6,904
	120. The Ledger Independent (AN @ DUKE)	Maysville	6,315
	121. Times-Tribune (AN @ DUKE)	Corbin	6,166
	122. Glasgow Daily Times (AN @ DUKE)	Glasgow	5,957
	Population 4,339,367	Sample reach (%)	221,550 (5.1%)
Louisiana	123. The Times Picayune (AN)	New Orleans	127,760
	124. The Advocate (AN)	Baton Rouge	79,238
	125. American Press (AN)	Lake Charles	28,202
	Population 4,533,372	Sample reach (%)	235,200 (5.2%)
Maine	126. Portland Press Herald/Maine Sunday Telegram (AN)	Portland	46,371
	127. Bangor Daily News (AN)	Bangor	44,288
	Population 1,328,361	Sample reach (%)	90,659 (6.8%)
Maryland	128. The Baltimore Sun (AN @ DUKE)	Baltimore	152,397
	129. The Capital (AN)	Annapolis	32,121
	130. The Frederick News-Post (AN)	Frederick	30,367
	131. The Herald-Mail (AN @ DUKE)	Hagerstown	24,776
	132. The Cumberland Times-News (AN @ DUKE)	Cumberland	22,496
	133. The Star-Democrat (AN)	Easton	15,284
	134. Cecil Whig (AN @ DUKE)	Elkton	12,163
	Population 5,773,552	Sample reach (%)	289,604 (5.0%)
Massachusetts	135. The Boston Globe (Factiva)	Boston	230,351
	136. The Boston Herald (AN)	Boston	96,860
	137. The Republican (AN)	Springfield	53,273

		Population 6,547,629	Sample reach (%)	380,484 (5.8%)
Michigan	138. Detroit News/Detroit Free Press (AN)	Detroit		215,401
	139. The Grand Rapids Press (AN)	Grand Rapids		66,800
	140. The Flint Journal (AN)	Flint		44,686
	141. The Saginaw News (AN)	Saginaw		33,183
	142. Kalamazoo Gazette (AN)	Kalamazoo		26,137
	143. The Bay City Times (AN)	Bay City		17,834
	144. The Muskegon Chronicle (AN)	Muskegon		16,460
	145. The Argus-Press (AN @ DUKE)	Owoso		11,249
	146. Midland Daily News (AN)	Midland		10,991
	147. Jackson Citizen Patriot (AN)	Jackson		10,437
	148. Morning Sun (AN)	Mount Pleasant		8,316
	149. Hillsdale Daily News (AN)	Hillsdale		7,285
	150. Ludington Daily News (AN)	Ludington		6,780
	151. The Evening News (AN @DUKE)	Sault Ste. Marie		6,772
	152. Huron Daily Tribune (AN)	Bad Axe		6,461
	153. The Pioneer (AN)	Big Rapids		5,221
	154. Manistee News Advocate (AN)	Manistee		4,928
		Population 9,883,640	Sample reach (%)	498,941 (5.0%)
Minnesota	155. Star Tribune: Newspaper of the Twin Cities (AN)	Minneapolis		300,277
	156. St. Paul Pioneer Press (AN)	Saint Paul		195,333
		Population 5,303,925	Sample reach (%)	495,610 (9.3%)
Mississippi	157. Northeast Mississippi Daily Journal (AN)	Tupelo		32,772
	158. The Sun Herald (AN)	Gulfport		30,064
	159. The Mississippi Press (AN)	Pascagoula		15,050
	160. The Commercial Dispatch (AN)	Columbus		13,338
	161. The Meridian Star (AN @ DUKE)	Meridian		10,500
	162. Enterprise-Journal (AN @ DUKE)	McComb		8,832
	163. The Natchez Democrat (AN @ DUKE)	Natchez		8,428
	164. Laurel Leader-Call (AN @ DUKE)	Laurel		7,100
	165. Starkville Daily News (AN @ DUKE)	Starkville		7,071
	166. The Bolivar Commercial (AN @ DUKE)	Cleveland		6,205
	167. The Daily Corinthian (AN @ DUKE)	Corinth		6,113
	168. Delta Democrat Times (AN)	Greenville		6,078
		Population 2,967,297	Sample reach (%)	151,551 (5.1%)
Missouri	169. St. Louis Post-Dispatch (AN)	Saint Louis		178,801
	170. The Kansas City Star (AN)	Kansas City		183,307
		Population 5,988,927	Sample reach (%)	362,108 (6.0%)
Montana	171. Billings Gazette (AN)	Billings		38,901
	172. Bozeman Daily Chronicle (AN)	Bozeman		13,060
		Population 989,415	Sample reach (%)	51,961 (5.2%)

Nebraska	173. Omaha World-Herald (AN)	Omaha	130,932
	174. Lincoln Journal Star (AN)	Lincoln	50,171
	Population 1,826,341	Sample reach (%)	181,103 (9.9%)
Nevada	175. Las Vegas Review-Journal (AN)	Las Vegas	142,775
	176. Nevada Appeal (AN @ DUKE)	Carson City	9,082
	Population 2,700,551	Sample reach (%)	151,857 (5.6%)
New Hampshire	177. New Hampshire Union Leader/Sunday News (AN)	Manchester	43,397
	178. The Telegraph (AN)	Hudson	20,745
	179. Concord Monitor (AN)	Concord	13,085
	Population 1,316,470	Sample reach (%)	77,227 (5.9%)
New Jersey	180. The Star-Ledger (AN)	Newark	311,904
	181. The Record, Herald News (AN)	Woodland Park	128,081
	Population 8,791,894	Sample reach (%)	439,985 (5.0%)
New Mexico	182. Albuquerque Journal (AN)	Albuquerque	79,810
	183. Las Cruces Sun-News (AN)	Las Cruces	21,739
	184. The Santa Fe New Mexican (AN)	Santa Fe	18,633
	Population 2,059,179	Sample reach (%)	120,182 (5.8%)
New York	185. New York Post (AN)	New York	522,868
	186. The Buffalo News (AN)	Buffalo	142,750
	187. The Post-Standard (AN)	Syracuse	73,311
	188. The Daily Gazette (AN)	Schenectady	54,847
	189. The New York Sun (AN)	New York	45,763
	190. Staten Island Advance (AN)	Staten Island	34,439
	191. Times Union (AN)	Albany	65,255
	192. Observer Dispatch (AN)	Utica	30,165
	193. The Post-Star (AN)	Glens Falls	25,651
	Population 19,378,102	Sample reach (%)	995,049 (5.1%)
North Carolina	194. The Charlotte Observer (AN)	Charlotte	137,379
	195. The News & Observer (AN)	Raleigh	121,484
	196. News & Record (AN)	Greensboro	54,789
	197. Winston-Salem Journal (AN)	Winston Salem	52,816
	198. The Fayetteville Observer (AN)	Fayetteville	45,832
	199. Star-News (AN)	Wilmington	41,229
	200. The Daily Reflector (AN)	Greenville	20,177
	201. The Herald-Sun (AN)	Durham	19,555
	Population 9,535,483	Sample reach (%)	493,261 (5.2%)
North Dakota	202. Grand Forks Herald (AN)	Grand Forks	23,520
	203. The Bismarck Tribune (AN)	Bismarck	24,769
	Population 672,591	Sample reach (%)	48,289 (7.2%)
Ohio	204. The Plain Dealer (AN)	Cleveland	293,139

	205. The Columbus Dispatch (AN)	Columbus	129,737
	206. The Blade (AN)	Toledo	94,215
	207. Dayton Daily News (AN)	Dayton	88,489
	Population 11,536,504	Sample reach (%)	605,580 (5.2%)
Oklahoma	208. The Oklahoman (AN)	Oklahoma City	121,128
	209. Tulsa World (AN)	Tulsa	95,003
	Population 3,751,351	Sample reach (%)	216,131 (5.8%)
Oregon	210. The Oregonian (AN)	Portland	226,406
	211. The Register-Guard (AN)	Eugene	51,040
	Population 3,831,074	Sample reach (%)	277,446 (7.2%)
Pennsylvania	212. The Philadelphia Inquirer (AN)	Philadelphia	236,953
	213. The Philadelphia Daily News (AN)	Philadelphia	97,694
	214. Pittsburgh Post-Gazette (AN)	Pittsburgh	147,389
	215. Tribune-Review (AN)	Pittsburgh	106,044
	216. The Morning Call (AN)	Allentown	83,654
	Population 12,702,379	Sample reach (%)	671,734 (5.3%)
Rhode Island	217. The Providence Journal (AN)	Providence	85,131
	218. The Westerly Sun (AN)	Westerly	Not available
	Population 1,052,567	Sample reach (%)	>85,131 (>8.1%)
South Carolina	219. The Post and Courier (AN)	Charleston	82,266
	220. The State (AN)	Columbia	64,456
	221. The Sun News (AN)	Myrtle Beach	32,771
	222. Herald-Journal (AN)	Spartanburg	30,357
	223. Anderson Independent-Mail (AN)	Anderson	21,925
	Population 4,625,364	Sample reach (%)	231,775 (5.0%)
South Dakota	224. Rapid City Journal (AN @ DUKE)	Rapid City	23,202
	225. Aberdeen American News (AN)	Aberdeen	14,958
	226. Daily Republic (AN @ DUKE)	Mitchell	11,568
	Population 814,180	Sample reach (%)	49,728 (6.1%)
Tennessee	227. The Commercial Appeal (AN)	Memphis	97,431
	228. Knoxville News Sentinel (AN)	Knoxville	78,763
	229. Chattanooga Times Free Press (AN)	Chattanooga	69,947
	230. The Daily Times (AN)	Maryville	15,848
	231. The Greeneville Sun (AN)	Greeneville	13,851
	232. Cleveland Daily Banner (AN @ DUKE)	Cleveland	11,427
	233. Daily Post Athenian (AN @ DUKE)	Athens	10,000
	234. The Herald-Citizen (AN @ DUKE)	Cookeville	9,352
	235. Columbia Daily Herald (AN @ DUKE)	Columbia	9,091
	236. The Oak Ridger (AN)	Oak Ridge	7,554
	Population 6,346,105	Sample reach (%)	323,264 (5.1%)

Texas	237. Houston Chronicle (AN)	Houston	325,814
	238. The Dallas Morning News (AN)	Dallas	257,133
	239. Fort Worth Star-Telegram (AN)	Fort Worth	136,093
	240. San Antonio Express-News (AN)	San Antonio	127,487
	241. Austin American-Statesmen (AN)	Austin	107,883
	242. El Paso Times (AN)	El Paso	66,005
	243. Corpus Christi Caller-Times (AN)	Corpus Christi	41,412
	244. Lubbock Avalanche-Journal (AN)	Lubbock	32,390
	245. Waco Tribune-Herald (AN)	Waco	31,492
	246. Amarillo Globe-News (AN)	Amarillo	30,070
	247. The Monitor (AN)	McAllen	24,786
	248. Victoria Advocate (AN)	Victoria	24,730
	249. Tyler Morning Telegraph (AN)	Tyler	23,766
	250. Abilene Reporter-News (AN)	Abilene	21,677
	251. Wichita Falls Time Record News (AN)	Wichita Falls	21,508
	Population 25,145,561	Sample reach (%)	1,272,246 (5.1%)
Utah	252. The Salt Lake Tribune (AN)	Salt Lake City	102,691
	253. Deseret News (AN)	Salt Lake City	91,639
	Population 2,763,885	Sample reach (%)	194,330 (7.0%)
Vermont	254. Rutland Herald (AN)	Rutland	11,877
	255. Brattleboro Reformer	Brattleboro	7,036
	256. The Times Argus	Barre	6,771
	257. St. Albans Messenger	St. Albans	5,695
	258. Bennington Banner	Bennington	5,345
	Population 625,741	Sample reach (%)	36,724 (5.9%)
Virginia	259. The Virginian-Pilot (AN)	Norfolk	132,590
	260. Richmond Times-Dispatch (AN)	Richmond	104,666
	261. The Roanoke Times (AN)	Roanoke	69,883
	262. Daily Press (AN)	Newport News	57,456
	263. The Free Lance-Star (AN)	Fredericksburg	39,447
	Population 8,001,024	Sample reach (%)	404,042 (5.0%)
Washington	264. Seattle Post Intelligencer/Seattle Times (AN)	Seattle	221,665
	265. The News Tribune (AN)	Tacoma	74,050
	266. The Spokesman-Review (AN)	Spokane	65,799
	Population 6,724,540	Sample reach (%)	361,514 (5.3%)
West Virginia	267. The Charleston Gazette (AN)	Charleston	51,600
	268. The Herald-Dispatch (AN)	Huntington	23,084
	269. The Dominion Post (AN)	Morganton	19,529
	Population 1,852,994	Sample reach (%)	94,213 (5.1%)
Wisconsin	270. Milwaukee Journal Sentinel (AN)	Milwaukee	205,258
	271. Wisconsin State Journal (AN)	Madison	81,228

		Population 5,686,986	Sample reach (%)	286,486 (5.0%)
Wyoming	272. Casper Star-Tribune (AN @ DUKE)	Casper		23,513
	273. Wyoming Tribune-Eagle (AN)	Cheyenne		13,864
		Population 563,626	Sample reach (%)	37,377 (6.6%)

APPENDIX E STUDY TWO DATA ANALYSIS TABLES

Table E.1. First full model, run as proposed in the dissertation proposal. Hierarchical linear regression of Time 1/2012 POS Policy Implementation Index (POSPII) score, policy environment contextual factors, POS-tobacco-related newspaper content characteristics (2012-2014) and Time 2/2014 POS PII score among 42 US states, with pairwise deletion of missing data.

Steps	Independent variable	Unstandardized coefficient		Standardized coefficient	p	F	R^2	ΔR^2
		B	SE	β				
1	--	--	--	--	--	37.575***	.497	--
	Constant	3.936	1.466	--	.011			
	Time 1 POSPII, 2012	.862	.141	.705	.000			
2	--	--	--	--	--	5.326***	.538	0.41
	Constant	9.165	10.716	--	.399			
	Time 1 POSPII, 2012	.760	.200	.622	.001			
	Population, 2012	.000	.000	-.182	.348			
	Tobacco control funding, 2012 ($)	.000	.000	.121	.531			
	Amount of excise tax, 2012 ($)	.728	1.236	.093	.560			
	Adult smoking prevalence, 2012 (%)	-.274	.341	-.134	.428			
	Secondhand smoke exposure, 2012 (%)	.009	.191	.006	.961			
	Amount tobacco grown, 2012 (pounds)	.000	.000	.063	.621			
3	--	--	--	--	--	3.019**	.602	.063
	Constant	12.533	12.151	--	.312			
	Time 1 POSPII, 2012	.679	.222	.556	.005			
	Population, 2012	.000	.000	-.108	.646			
	Tobacco control funding, 2012 ($)	.000	.000	-.027	.909			
	Amount of excise tax, 2012 ($)	.414	1.600	.053	.798			
	Adult smoking prevalence, 2012 (%)	-.259	.362	-.127	.482			
	Secondhand smoke exposure, 2012 (%)	-.033	.216	-.023	.878			
	Amount tobacco grown, 2012 (pounds)	.000	.000	-.007	.966			
	POS-related news content volume, 2012-2014	-.041	.895	-.034	.964			
	Health frame present, 2012-2014	-.503	1.154	-.206	.666			
	Public health source present, 2012-2014	1.421	1.067	.657	.195			
	Data or narrative evidence present, 2012-2014	-.480	1.152	-.255	.680			
	Both local angle and quote present, 2012-2014	-.620	.764	-.306	.424			
	Pro-tobacco-control slant, 2012-2014	.507	.687	.289	.467			

B, unstandardized beta; SE, standard error; β, standardized beta; p, significance level; F, F statistic; R^2, variance ; ΔR^2, change in variance.

*** $p < 0.001$; ** $p < .01$

Table E.2. Correlation matrix. Pearson correlation, 2-tailed significance. ** Correlation is significant at the 0.01 level; * at 0.05 level.

			Policy Score		2012 Policy Context Control Variables						2012-2014 POS News Content Variables					
			POSPII 2012	POSPII 2014	Population	Program Funding	SHS Exposure	Excise Tax	Adult Smoke Prev.	Pounds Tobacco Grown	Volume	Pro Tob Control Slant	Health Frame Present	Any PH Source	Any Evidence	Local Quote & Angle
Policy Score	POSPII 2012	Corr.	1	.705**	.368*	.387*	-.238	.507**	-.545**	-.244	.420**	.400*	.284	.447**	.400*	.451**
		Sig.		.000	.019	.014	.140	.001	.000	.130	.007	.011	.076	.004	.010	.003
		N	40	40	40	40	40	40	40	40	40	40	40	40	40	40
	POSPII 2014	**Corr.**	**.705****	**1**	**.179**	**.268**	**-.220**	**.469****	**-.499****	**-.147**	**.348***	**.334***	**.170**	**.442****	**.287**	**.409****
		Sig.	**.000**		**.256**	**.086**	**.162**	**.002**	**.001**	**.352**	**.024**	**.030**	**.282**	**.003**	**.065**	**.007**
		N	**40**	**42**	**42**	**42**	**42**	**42**	**42**	**42**	**42**	**42**	**42**	**42**	**42**	**42**
2012 Policy Context Control Variables	Population	Corr.	.368*	.179	1	.764**	.100	.035	-.254	.037	.691**	.641**	.646**	.563**	.663**	.516**
		Sig.	.019	.256		.000	.530	.824	.104	.817	.000	.000	.000	.000	.000	.000
		N	40	42	42	42	42	42	42	42	42	42	42	42	42	42
	Program Funding	Corr.	.387*	.268	.764**	1	.048	.070	-.292	.000	.687**	.573**	.525**	.627**	.592**	.564**
		Sig.	.014	.086	.000		.764	.661	.061	1.000	.000	.000	.000	.000	.000	.000
		N	40	42	42	42	42	42	42	42	42	42	42	42	42	42
	SHS Exposure	Corr.	-.238	-.220	.100	.048	1	-.256	.362*	.096	.027	.060	.134	.069	.098	.006
		Sig.	.140	.162	.530	.764		.102	.018	.546	.864	.706	.397	.664	.536	.972
		N	40	42	42	42	42	42	42	42	42	42	42	42	42	42
	Excise Tax	Corr.	.507**	.469**	.035	.070	-.256	1	-.568**	-.254	.240	.318*	.273	.305*	.223	.362*
		Sig.	.001	.002	.824	.661	.102		.000	.105	.126	.040	.081	.050	.156	.019
		N	40	42	42	42	42	42	42	42	42	42	42	42	42	42
	Adult Smoke Prev.	Corr.	-.545**	-.499**	-.254	-.292	.362*	-.568**	1	.218	-.347*	-.327*	-.253	-.345*	-.275	-.400**
		Sig.	.000	.001	.104	.061	.018	.000		.166	.024	.034	.106	.025	.078	.009
		N	40	42	42	42	42	42	42	42	42	42	42	42	42	42
	Pounds Tobacco Grown	Corr.	-.244	-.147	.037	.000	.096	-.254	.218	1	.210	.146	.184	.160	.109	.104
		Sig.	.130	.352	.817	1.000	.546	.105	.166		.183	.358	.244	.313	.493	.513
		N	40	42	42	42	42	42	42	42	42	42	42	42	42	42
2012-2014 POS News Content Variables	Volume	Corr.	.420**	.348*	.691**	.687**	.027	.240	-.347*	.210	1	.921**	.866**	.931**	.944**	.889**
		Sig.	.007	.024	.000	.000	.864	.126	.024	.183		.000	.000	.000	.000	.000
		N	40	42	42	42	42	42	42	42	42	42	42	42	42	42
	Pro Tob Control Slant	Corr.	.400*	.334*	.641**	.573**	.060	.318*	-.327*	.146	.921**	1	.884**	.851**	.915**	.852**
		Sig.	.011	.030	.000	.000	.706	.040	.034	.358	.000		.000	.000	.000	.000
		N	40	42	42	42	42	42	42	42	42	42	42	42	42	42
	Health Frame Present	Corr.	.284	.170	.646**	.525**	.134	.273	-.253	.184	.866**	.884**	1	.733**	.916**	.700**
		Sig.	.076	.282	.000	.000	.397	.081	.106	.244	.000	.000		.000	.000	.000
		N	40	42	42	42	42	42	42	42	42	42	42	42	42	42
	Any PH Source	Corr.	.447**	.442**	.563**	.627**	.069	.305*	-.345*	.160	.931**	.851**	.733**	1	.876**	.924**
		Sig.	.004	.003	.000	.000	.664	.050	.025	.313	.000	.000	.000		.000	.000
		N	40	42	42	42	42	42	42	42	42	42	42	42	42	42
	Any Evidence	Corr.	.400*	.287	.663**	.592**	.098	.223	-.275	.109	.944**	.915**	.916**	.876**	1	.836**
		Sig.	.010	.065	.000	.000	.536	.156	.078	.493	.000	.000	.000	.000		.000
		N	40	42	42	42	42	42	42	42	42	42	42	42	42	42

			.451**	.409**	.516**	.564**	.006	.362*	-.400**	.104	.889**	.852**	.700**	.924**	.836**	1
	Local	Corr.														
	Quote &	Sig.	.003	.007	.000	.000	.972	.019	.009	.513	.000	.000	.000	.000	.000	
	Angle	N	40	42	42	42	42	42	42	42	42	42	42	42	42	42

Table E.3. Characteristics of states (n=42) included in the longitudinal analysis. News content published in the two years between measurement of POS score at Time 1 and Time 2.

	N	Mean (Std. Error)	SD	Min	Max	Skewness (Std. Error)	Kurtosis (Std. Error)	Statistic	df	Sig.
					Descriptives			Shapiro-Wilk (W) Test of Normality		
Point of Sale Policy Implementation Index										
Time 1 (2012)	40	8.23 (1.03)	6.49	0	25	.746 (.374)	.204 (.733)	.931	40	.017
Time 2 (2014) (DV)	42	11.02 (1.22)	7.94	0	31	.621 (.365)	-.036 (.717)	.945	42	.042
Policy environment contextual factors, 2012										
Population (M)	42	7.06 (1.13)	7.33	0.63	38.04	2.511 (.365)	7.659 (.717)	.732	42	.000
Tobacco control funding ($M)	42	13.79 (2.57)	16.70	1.37	85.02	3.107 (.365)	10.103 (.717)	.592	42	.000
Amount of excise tax ($)	42	1.46 (.16)	1.01	.17	4.35	.973 (.365)	.400 (.717)	.913	42	.004
Adult smoking prevalence (%)	42	19.85 (.60)	3.88	10.6	28.3	.140 (.365)	-.067 (.717)	.972	42	.387
Secondhand smoke exposure (%)	42	47.20 (.85)	5.53	39.1	67.4	1.244 (.365)	3.236 (.717)	.921	42	.007
Pounds of tobacco grown (M)	42	18.21 (10.23)	66.32	0	391.71	4.963 (.365)	26.277 (.717)	.305	42	.000
POS-related newspaper content characteristics, 2012-2014										
Volume	42	6.64 (1.00)	6.51	1	36	2.606 (.365)	9.259 (.717)	.734	42	.000
Health frame present	42	4.21 (.50)	3.25	0	15	1.862 (.365)	4.308 (.717)	.819	42	.000
Any public health source present	42	3.05 (.57)	3.67	0	18	2.238 (.365)	6.201 (.717)	.755	42	.000
Any data or narr. evidence present	42	5.10 (.65)	4.22	0	23	2.241 (.365)	7.349 (.717)	.808	42	.000
Both local angle and quote present	42	2.67 (.60)	3.91	0	18	2.353 (.365)	6.066 (.717)	.696	42	.000
Pro-tobacco control slant present	42	4.31 (.70)	4.52	0	21	2.051 (.365)	4.616 (.717)	.777	42	.000

APPENDIX F STUDY THREE EXPERIMENTAL QUESTIONNAIRE

News Content Factors and Public Support for POS Tobacco Control Policies: A Messaging Experiment

A. Screening Questions

A1. What is your age in yearsHow old are you?

    [<18 SCREEN OUT]
    [≥18 SCREEN IN; CONTINUE]
    [IF REFUSED, SCREEN OUT]

A2. In the past 10 years, have you <u>voted</u> in a presidential, state or local election?

    0=No [SCREEN OUT]
    1=Yes
    8=Don't know/Not sure [SCREEN OUT]
    9=Refused to say [SCREEN OUT]

A3. In which US state do you currently reside?

    [DROP DOWN MENU OF ALL 50 US STATES]
    [DO NOT CURRENTLY LIVE IN A US STATE; SCREEN OUT]

B. Message and Manipulation Check

B1. Please read the following news article carefully. Next, we will ask you about it, in a series of follow up questions.

[INSERT MESSAGE; RESPONDENT RANDOMLY ASSIGNED 1 OF 8 UNIQUE MESSAGES]

B2. In your opinion, what is the frame, or argument, that was present in the message you just read? A frame is the way a story is presented or packaged. Please choose the best answer.

[Programming note: force 1 choice, checking for face validity. Consider disallowing a 'back' button for B2 and B3.]

    1=Health
    2=Economic
    3=Regulation
    4=Rights
    8=Don't know/not sure

B3. Would you say the news story you read was local, or not local, to where you live?
    1=Local

2=Not local
8=Don't know/not sure

B4. After reading this news article, did you feel more positive, more negative or no different about tobacco products?
1=More positive
2=More negative
3=No different
8=Don't know/not sure
9=Refuse

C. POS Support

In the next section you will see a number of policy solutions related to the sales and marketing of tobacco products in retail stores. Retail stores include any brick and mortar location where tobacco is sold, like a grocery store or convenience store. Tobacco products include cigarettes, any size cigars, smokeless tobacco or SNUS, or electronic or vaping products.

For the following policy solutions, please indicate if you oppose or support the following policy solutions. Please respond using a scale of 1 to 4, where 1 is strongly oppose and 4 is strongly support.

[Programming note: Here are response categories.]
1=Strongly oppose
2=Oppose
3=Support
4=Strongly Support

[Programming note: Made sure each statement had the word "tobacco" in it.]

Licensing and fees
C1. Requiring store owners to pay for a license to sell tobacco products (as is done for alcoholic beverages)
C2. Taking away (revoking) the license of store owners who violate license rules

Tobacco retailer density
C3. Limiting or capping the total number of tobacco retail licenses in a given area (as is done for alcoholic beverages)
C4. Prohibiting tobacco sales in locations near where youth frequent, such as in stores located near schools or parks
C5. Restricting tobacco retailers in locations where there are already many other tobacco retailers
C6. Prohibiting pharmacies from selling tobacco products
C7. Requiring that tobacco be sold only in stores that sell tobacco products and nothing else

<u>Advertising</u>
C8. Limiting the placement of advertisements only to certain areas within the store (e.g. only near the cash register)
C9. Limiting the placement of advertisements outside the store such as in the parking lot or on the building
C10. Prohibiting the placement of advertisements within 1000 feet (about three blocks) of schools, children's parks or playgrounds and daycare facilities

<u>Product placement</u>
C11. Requiring retailers to store tobacco products out of customers' view, such as under the counter or behind opaque shelving
C12. Requiring that the clerk assist with all tobacco purchases, limiting self-service to tobacco products
C13. Restricting the number of products of each type that can be displayed (e.g. only allow retailers to display one sample of each tobacco product for sale)
C14. Restricting the total amount of square footage dedicated to displaying tobacco products

<u>Health warnings</u>
C15. Requiring graphic, or picture-based, health warnings at the point of sale

<u>Non-tax approaches to price</u>
C16. Establishing minimum price laws or "floor" prices on each type of tobacco product
C17. Banning price discounts such as 2-for-1 deals or $1.00 off
C18. Banning the use of coupons
C19. Requiring minimum package sizes for all tobacco products, such as requiring a 20-pack of cigarettes

<u>Other POS policies</u>
C20. Raising the minimum age to purchase tobacco products from 18 to 21
C21. Banning candy or fruit flavored tobacco products
C22. Banning menthol flavored tobacco products

D. Demographic & Other Variables

The following questions will be used for classification purposes. There are no right or wrong answers.

D1. What is your gender?
    0=Male
    1=Female
    9=Refused

D2. Which one or more of the following would you say is your race?
    1=White
    2=Black or African-American
    3=Asian

4=Hispanic or Latino
5=Native Hawaiian or Other Pacific Islander
6=American Indian or Alaska Native
7=Other (specify)_____
9=Refused

D3. Are you Hispanic or Latino?
0=No
1=Yes
8=Don't Know/Not Sure
9=Refused

D4. What is your annual household income?
1=Less than $50,000
2=$50,000-$99,999
3=$100,000 or greater

[PAGE BREAK]

It is important for us to know if you have a relationship with people who manufacture or sell tobacco products.

D5. Do you, a member of your immediate family, or a close friend work in a convenience store or gas station store?
0=No
1=Yes
8=Don't know/not sure
9=Refuse to say

D6. Do you, a member of your immediate family, or a close friend work for the tobacco industry, including with e-cigarettes or nicotine/vaping devices?
0=No
1=Yes
8=Don't know/not sure
9=Refuse to say

[PAGE BREAK]

Please answer the following questions about tobacco use.

D7. Have you smoked at least 100 cigarettes in your entire life? (100 cigarettes = 5 packs)
0=No (=*non-smoker*) [SKIP to D9]
1=Yes [Continue to D8.]
8=Don't know/not sure

D8. Do you now smoke cigarettes every day, some days, or not at all?
    1=Every day (=*established, daily smoker*)
    2=Some days (=*established, occasional smoker*)
    3=Not at all (=*former smoker*)
    8=Don't know/Not Sure

D9. During the past 3 months, did you stop smoking cigarettes for one day or longer because you were trying to quit smoking cigarettes for good?
    0=No
    1=Yes

D10. Have you used other tobacco products, such as cigars, chewing tobacco, snuf, or snus at least 20 times in your life?
    0=No (=*non-smoker*) [SKIP to D12]
    1=Yes
    8=Don't know/not sure

D11. Do you now use other tobacco products, such as cigars, chewing tobacco, snuf, or snus every day, some days, or not at all?
    1=Every day *(if established smoker per D7 & D8, then dual-use=yes)*
    2=Some days *(if established smoker per D7 & D8, then dual-use=yes)*
    3=Not at all *(if established smoker per D7 & D8, than dual-use=no)*
    8=Don't know/Not Sure

D12. Have you ever used an e-cigarette (or personal vaporizer) such as Njoy or blu?
    0=No (=*non-smoker*) [SKIP to D14]
    1=Yes
    8=Don't know/not sure

D13. Do you now use an e-cigarette or vaporizer every day, some days, or not at all?
    1=Every day
    2=Some days
    3=Not at all
    8=Don't know/Not Sure

[PAGE BREAK]

These are the last few questions.

D14. Did you vote in the last presidential election?
    0=No
    1=Yes
    8=Don't know/not sure

D15. Did you vote in the last election that was not the presidential election?
    0=No

1=Yes
8=Don't know/not sure

D16. How would you describe your political identity?
1=Conservative
2=Moderate
3=Independent
4=Liberal
5=Not political
6=Don't know/not sure

D17. What would you say best describes your political party or affiliation?
1=Strong Republican
2=Not so strong Republican
3=Independent but leaning Republican
4=Independent
5=Independent but leaning Democrat
6=Not so strong Democrat
7=Strong Democrat
8=Other party not listed here

D18. How much <u>trust</u> do you have in the Federal government? We are asking about trust in the federal government, in general. Would you say…
1= A great deal
2= A fair amount
3= Not very much
4= None at all, or
5= No opinion
8=Don't know/not sure

D19. Have you ever heard of the CDC or Centers for Disease Control and Prevention?
0=No [SKIP to D21]
1=Yes

D20. How much <u>trust</u> do you have in the CDC, or Centers for Disease Control and Prevention?
1= A great deal
2= A fair amount
3= Not very much
4= None at all, or
5= No opinion

D21. Have you ever heard of the FDA or Food and Drug Administration?
0=No [SKIP to END]
1=Yes

D22. How much <u>trust</u> do you have in the FDA, or Food and Drug Administration?
        1= A great deal
        2= A fair amount
        3= Not very much
        4= None at all, or
        5= No opinion

[END OF QUESTIONNAIRE]

APPENDIX G STUDY THREE EXPERIMENTAL NEWS MESSAGES

Message 1. Health Frame; Local; Source = Local Coalition Members & Local Store Owner

[CITY] debates health program to license tobacco stores

[CITY] council members are considering a program that would require all stores that sell tobacco to purchase a yearly license. This licensing program would allow health officials to monitor the sales of tobacco products in every location where it is sold. The proposed program would be used to limit the number of stores that can sell tobacco and make it against the law to sell tobacco near schools or inside a pharmacy.

Smoking is the number one cause of preventable death. Each year in [STATE], smoking kills [NUMBER] people. Licensing stores that sell tobacco is expected to improve public health, by making it harder for children to get cigarettes and easier for adults to quit.
Young people who see tobacco marketing and product displays in stores are more likely to start smoking. Adults who live close to a store that sells tobacco are less likely to quit smoking, and stay quit, over the long term.

The Healthy [CITY] Coalition testified before city council about the new tobacco license program. "This license program will save lives by helping people quit smoking. We can also prevent our kids from ever starting to use tobacco." Said Mary Garcia, coalition president. "In some neighborhoods, there are tobacco outlets on every corner, by every school. How can children be healthy in a place like that? A license system can fix the problem."

Todd Meriwether owns a convenience store in [CITY] and also spoke to city council. "As a business owner, I believe in a healthy community, but I do not think this program will have a big enough health impact."

Message 2. Health Frame; Not Local; Source = Surgeon General & National Association of Convenience Stores

Congress debates health program to license tobacco stores

Congress is considering a program that would require all stores that sell tobacco to purchase a yearly license. A licensing program would allow health officials to monitor the sales of tobacco products in every location where it is sold. Licenses would also be used to limit the number of stores that can sell tobacco, or could make it against the law to sell tobacco near schools or inside a pharmacy.

Smoking is a number one cause of preventable death. Each year in the US, smoking kills 480,000 people. Licensing stores who sell tobacco is expected to improve public health by making it harder for children to get cigarettes and easier for adults to quit.
Young people who see tobacco marketing and product displays in stores are more likely to start smoking. Adults who live close to a store that sells tobacco are less likely to quit smoking, and stay quit, over the long term.

The US Surgeon General, Dr. Vivek Murthy, testified before Congress about the new tobacco license program. "This license program will save lives by helping people quit smoking. We can also prevent our kids from ever starting to use tobacco. In some neighborhoods, there are tobacco outlets on every corner, by every school. How can children be healthy in a place like that? A license system can fix the problem."

Todd Meriwether serves as President of the National Association of Convenience Stores and also testified before Congress. "As a business person, I believe in a healthy communities, but I do not think this program will have a big enough health impact."

Message 3. Economic Frame; Local; Source = Local Chamber of Commerce and Local Store Owner

[CITY] debates economic program to license tobacco stores

[CITY] council members are considering a program that would require all stores that sell tobacco to purchase a yearly license. A licensing program would allow economic officials to monitor the sales of tobacco products in every location where it is sold. Licenses would also be used to limit the number of stores that can sell tobacco, and make it against the law to sell tobacco near schools.

Licensing stores that sell tobacco is expected to save the city money by lowering health care and lost productivity costs that result from tobacco use.

According to Todd Meriwether at the [CITY] Chamber of Commerce, "The tobacco industry will spend [$AMOUNT] on marketing in [STATE] in 2016 to keep people smoking. That includes store advertisements, displays, special price discounts and coupons encouraging people to keep smoking."

In [STATE], the tobacco industry is outspending tobacco prevention funding by [RATIO]. Each year, tobacco use costs [STATE] approximately [$AMOUNT] in health care costs. That means that every household in [STATE] pays about [$AMOUNT] in taxes each year because of smoking-related illness.

[CITY] convenience store owner, Martin Garcia, testified before city council about the new tobacco license program, "I see pros and cons. This license program may save money if it actually helps people quit smoking, but it may impact my business because I may sell fewer tobacco products. I just don't think we need more taxes"

Message 4. Economic Frame; Not Local; Source = Federal Trade Commission and National Association of Convenience Stores

Congress debates economic program to license tobacco stores

Congress is considering a program that would require all stores that sell tobacco to purchase a yearly license. A licensing program would allow economic officials to monitor the sales of tobacco products in every location where it is sold. Licenses would also be used to limit the number of stores that can sell tobacco, and make it against the law to sell tobacco near schools.

Licensing stores that sell tobacco is expected to save money by lowering health care and lost productivity costs that result from tobacco use.

According to Jim Sherman, Director of the United States Federal Trade Commission, "The tobacco industry will spend more than $9.6 billion on marketing in the US in 2016. Almost all of that marketing budget will be spent in stores on advertisements, displays, special price discounts and coupons that cause people to keep smoking."

Nationwide the tobacco industry is outspending tobacco prevention funding by 20 to 1. Each year, tobacco use costs the US approximately $170 billion in health care costs, and another $150 billion in lost worker productivity.

Todd Meriwether serves as President of the National Association of Convenience Stores and also testified before Congress about the new tobacco license program, "There are pros and cons. This license program may save money if it helps people quit tobacco, but it may impact businesses because they may sell fewer tobacco products."

Message 5. Regulation Frame; Local; Source = Local Government

[CITY] debates regulations to license tobacco stores

[CITY] council members are considering a program that would require all stores that sell tobacco to purchase a yearly license. A licensing program would allow regulatory officials to monitor the sales of tobacco products in every location where it is sold. Licenses would also be used to limit the number of stores that can sell tobacco, and would make it against the law to sell tobacco near schools or inside pharmacies.

Licenses are one way to ensure compliance with local business standards, reduce youth access to tobacco, and limit the negative public health effects associated with tobacco use. Licensing stores that sell tobacco is expected to solve problems related to tobacco use.

[CITY] Mayor, Martin Garcia, testified before city council about the new tobacco license program, "There are pros and cons. This licensing policy will offer strong protections to public health, but it will cost businesses and taxpayers money. We must invest in new regulations now, that prevent more serious problems down the road, but not everyone agrees with me that regulations are the answer."

Message 6. Regulation Frame; Not Local; Source = FDA

Congress debates regulations to license tobacco stores

Congress is considering a program that would require all stores that sell tobacco to purchase a yearly license. A licensing program would allow regulatory officials to monitor the sales of tobacco products in every location where it is sold. Licenses would also be used to limit the number of stores who can sell tobacco and make it against the law to sell tobacco near schools or inside pharmacies.

Licenses are one way to ensure compliance with federal business standards, reduce youth access to tobacco, and limit the negative public health effects associated with tobacco use.

Mitch Zeller directs the Center for Tobacco Products at the Food and Drug Administration and testified before congress about the new tobacco license program, "There are pros and cons. This licensing policy will offer strong protections to public health, but it will cost businesses and taxpayers money. We must invest in new regulations now, that prevent more serious problems down the road, but not everyone agrees with me that regulations are the answer."

Message 7. Rights Frame; Local; Source = Nonsmoker/Community member

[CITY] debates license program for tobacco stores

[CITY] council members are considering a program that would require all stores that sell tobacco to purchase a yearly license. Tobacco license programs are used to grant stores the right to sell tobacco products in an organized way, with advertisements to attract customer attention, popular brands in preferred positions, and clear communication about special price discounts.

Tobacco license programs are also used to grant nonsmokers the right to be protected from persuasive tobacco advertisements by limiting the number of stores that can sell tobacco. A license can also make it against the law to sell tobacco near schools or inside a pharmacy. Licensing stores that sell tobacco is expected to secure both the right of businesses to sell tobacco, and of shoppers to be free from the influence of tobacco marketing.

Whereas tobacco is a leading cause of preventable death, killing [NUMBER] people a year in [STATE], it remains a legal product that can be sold only to adults over a set minimum age, usually 18.

Kyle Jones is a student at [CITY] High School and testified before city council about the new tobacco license program, "Children should have the freedom to not be exposed to tobacco advertisements on their walk to school. I know from science that that exposure causes kids to smoke. And for smokers who want to quit, the advertisements and cheap prices make it very difficult to quit. Businesses have a right to sell tobacco and to earn a living. But people have a right to live a life that is free from tobacco industry influence."

Message 8. Rights Frame; Not Local; Source = Centers for Disease Control

Congress debates license program for tobacco stores

Congress is considering a program that would require all stores that sell tobacco to purchase a yearly license. Tobacco license programs are used to grant stores the right to sell tobacco products in an organized way, with advertisements to attract customer attention, popular brands in preferred positions, and clear communication about special price discounts.

Tobacco license programs are also used to grant nonsmokers the right to be protected from persuasive tobacco advertisements by limiting the number of stores that can sell tobacco. A license can also make it against the law to sell tobacco near schools or inside a pharmacy. Licensing stores that sell tobacco is expected to secure both the right of businesses to sell tobacco, and of shoppers to be free from the influence of tobacco marketing.

Whereas tobacco is the leading cause of preventable death, killing 480,000 people a year in the US, it remains a legal product that can be sold only to adults over the age of18.

Dr. Sylvia Maynard directs the US Centers for Disease Control, Office of Smoking and Health, and testified before congress about the new tobacco license program, "Little children should have the freedom to not be exposed to tobacco on their walk to and from school. Science tells us that exposure influences kids to smoke. And for smokers who want to quit, the advertisements and cheap prices make it very difficult to quit. Businesses have a right to sell tobacco, to earn a living. But people have a right to live a life that is free from tobacco industry influence."

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