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Diffusion of Clean Indoor Air Ordinances in the Southwestern United States

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The authors investigate the process through which clean indoor air ordinances were considered in 10 communities in the southwestern United States and key factors that influenced diffusion and adoption. Clean indoor air ordinances, which ban smoking in public places, were adopted in approximately 1,409 U.S. communities from 1986 to April 2004. The authors gathered data from 10 communities in New Mexico and Texas by means of face-to-face interview, e-mail, and telephone interviews and by analyzing archival materials. Important influences on the adoption or rejection of clean indoor air ordinances were (a) personal experiences of policy champions, (b) local framing of the ordinance as a public health issue versus as an economic/business or an individual rights issue, and (c) interpersonal networks connecting a community to previously adopting communities. The policies that were adopted ranged in comprehensiveness, with each community of study reinventing model policies obtained from other communities.

Keywords: *diffusion; Clean Indoor Air Ordinance; tobacco control; secondhand smoke*

This project investigated how local communities decided to adopt or reject clean indoor air policies and traced the intercommunity networks through which clean indoor air ordinances diffused and were often reinvented. Policies are laws, regulations, rules, and understandings adopted by a collectivity (such as a community) to change individual and collective behavior. The study focused primarily on clean indoor air ordinances adopted/rejected by U.S. communities.

Although most diffusion of innovations studies concern individuals' adoption/rejection of technological innovations, we examine the adoption/rejection of a policy innovation by a system/community. The present research is also theoretically grounded in agenda setting, the process through which an issue rises to priority attention in a system. Most agenda-setting studies are conducted at the national level, however, rather than in a local community. Accordingly, the present study advances understanding of both diffusion and agenda-setting theories by illuminating how clean indoor air policies

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*This article is the last among the articles to which Dr. Everett M. Rogers contributed before he passed away in 2004, and it is a revision of an earlier article on which he was first author. For these reasons, we are honoring his contributions by maintaining his name as first author.

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diffuse and are adopted and how they enable U.S. communities to protect residents from the dangerous effects of secondhand smoke.

BACKGROUND

We ground our research in two theoretical perspectives: (a) the diffusion of innovations, the process through which an idea perceived as new spreads via communication channels over time among the members of a system (Rogers, 2003) and (b) agenda setting (Dearing & Rogers, 1996), the process through which an issue climbs to priority attention in a system. Almost all of the more than 5,200 extant studies of the diffusion of innovations (Rogers, 2003) concerned the diffusion of technological—rather than policy—innovations and examine individuals units (e.g., farmers or physicians), rather than system/community units, of adoption. Similarly, the vast majority of the 357 studies of the agenda-setting process focus on the national agenda, rather than on how an issue climbs the agenda in a local community (Dearing & Rogers, 1996).

Numerous states and local communities have recently adopted clean indoor air policies aimed at restricting smoking in workplaces and public places (Bartosch & Pope, 2002; Jacobson, Wasserman, & Raube, 1993; Menashe & Siegel, 1998; Norman, Ribisi, Howard-Pitney, Howard, & Unger, 2000; Pippert et al., 1995). Such community ordinances can lead to reductions in smoking prevalence (Fichtenberg & Glantz, 2000). Clean indoor air ordinances are more likely to succeed at the community level, where tobacco industry influence is minimal, than at the state level (Samuels & Glantz, 1991). However, little research has investigated the process through which these ordinances diffuse from one community to another and the key factors that influence the diffusion and adoption/rejection of such ordinances.

The present investigation addresses the gap (Lamb, Greenwich, & McCarty, 1998) between what is known from scientific research (e.g., the harmful effects of secondhand smoke) versus the use of such research findings in policy (by U.S. communities in the present investigation). Glantz and Balbach (2000) concluded,

The network of local tobacco control advocates that [the 1989] Proposition 99 [in California] created lit the afterburners on the nonsmokers' rights movement. Communities started passing clean indoor air and other tobacco control ordinances so fast that it was hard to keep track of them all. (p. 5)

Adoption of a clean indoor air ordinance represents one effort to change community norms on smoking, a social change facilitated by the 1998 Master Settlement Agreement and by state policies on clean indoor air. The number of U.S. communities adopting clean indoor air policies increased from 191 in 1986, to 1,513 in October 2002 (see Figure 1). Why do some communities adopt earlier and others later? Do the former influence the latter?

Evidence indicates that secondhand smoke threatens nonsmokers. Extensive biomedical research on the effects of secondhand smoke was synthesized in two influential government reports by the U.S. Surgeon General (1986) and by the National Academy of Sciences (1986), respectively. A U.S. Environmental Protection Agency 1992 report classified secondhand smoke as “a known human carcinogen.” These government syntheses of the scientific research literature concluded,

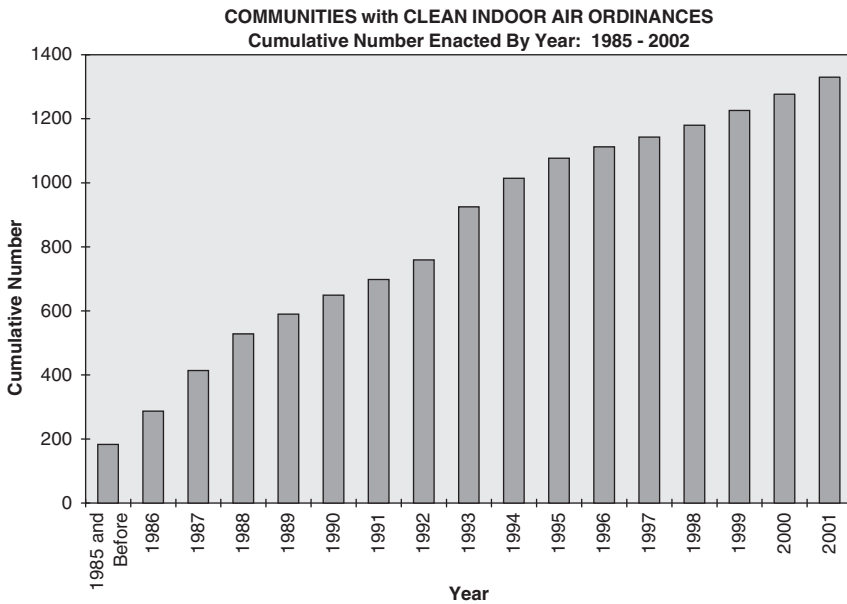


Figure 1. Cumulative rate of adoption of clean indoor air ordinances in the United States. SOURCE: Americans for Nonsmokers' Rights Foundation (2002). Reprinted with credit to American Nonsmokers' Rights Foundation, © 2002.

Among children, exposure to environmental tobacco smoke (ETS) is associated with increased risk of lower respiratory tract infections, decreased pulmonary function, and increased frequency and severity of asthma symptoms; among adult nonsmokers, ETS exposure is associated with increased risk of heart disease and lung cancer. (Norman et al., 2000, p. 81)

A recent synthesis of research concluded that secondhand smoke increased the risk of cardiac death or morbidity by about 30% (Glantz & Parmley, 2001). The documented links between secondhand smoke and severe health problems undoubtedly contributed to the adoption of a rapidly growing number of municipal clean indoor air ordinances (see Figure 1). Such ordinances not only protect nonsmokers from the toxins in secondhand smoke, but they also create environments that help smokers cut down or stop smoking by changing community norms on smoking (Glantz & Balbach, 2000; Hopkins et al., 2001; Magzamen & Glantz, 2001). One result is an increasing percentage of voluntary home and car smoking bans, recently estimated in California at 78% and 67%, respectively (Rohrbach et al., 2002).

The 1989 California Tobacco Control Program, which stimulated community tobacco control policies, reduced per-capita cigarette consumption 52% faster (from 9.7 packs per person per month to 6.5 packs in 1993) in California than in the rest of the United States, although the initial effect of the California Program did not persist in a later period (Pierce et al., 1998). The California Tobacco Control Program was associated with 33,300 fewer deaths from heart disease between 1989 and 1997 (Fichtenberg & Glantz, 2000). This evidence indicates that secondhand smoke is an important U.S. health problem. Community adoption of clean indoor air ordinances is an important means of decreasing public exposure to secondhand smoke.

Changing Community Norms on Smoking

Local communities have become the policy-making venues in which tobacco control advocates are most active. Most smokers have accepted clean indoor air policies in their communities (e.g., only 11 citations were issued to violators of the Las Cruces clean indoor air ordinance from 1995 to 2002). Among the prominent external-change agencies in diffusing clean indoor air policies are the Americans for Nonsmokers' Rights (ANR) Foundation, whose model ordinance is the starting point for many local communities; the American Cancer Society (ACS); the American Heart Association (AHA); and the American Lung Association (ALA). Local and state health authorities often provide backing for clean indoor air coalitions in communities, establishing a local coalition in some cases. Staff members of these change agencies acted as trainers and advisors to clean indoor air coalitions in the southwestern U.S. communities of study.

Clean indoor air ordinances spread from community to community through diffusion networks that link similarly sized and geographically proximate communities. Essentially, this diffusion process occurs in a network of interconnected communities that exchange information, forming a kind of aggregate learning system. Once opinion-leader communities spark this process, further diffusion eventually becomes self-sustaining. We believe that the diffusion of clean indoor air ordinances among U.S. communities is approaching a critical mass and has probably passed it in many states.

Although the present study examines the diffusion and adoption of clean indoor air ordinances at the community level, national- and state-level policies also influence these community-level policy decisions. For example, the 1998 Master Settlement Agreement between tobacco companies and the states helped change community norms on smoking by establishing that cigarette manufacturers were liable for smoking-related injury and death. Several state laws in the 1970s and 1980s established no-smoking sections in restaurants but little further restriction on smoking behavior. After the mid-1980s, most tobacco control policies for clean indoor air (and policies to restrict youth access to tobacco products) were implemented at the community level. However, by 2004, 21 states had preemption laws that set low state standards for tobacco control and prevent local governments from adopting any policy stronger than the state law (Vinzant, Hays, & Hays, 2002). For example, North Carolina adopted a preemptive state law in mid-1993 that went into effect 3 months later. During this period, the number of counties and larger municipalities with clean indoor air requirements in workplaces increased from 16 to 105 (Conlisk, Siegel, Lengerich, MacKenzie, & Ericksen, 1995). Here, the state law served as a focusing event for the agenda-setting process.

In 1998, many U.S. communities with relatively comprehensive clean indoor air ordinances were concentrated in California, where a 1984 state law banned smoking in all indoor workplaces, except bars, taverns, and casinos, statewide, and in 1998, smoking was banned in all bars and restaurants. This 1998 California state law largely confirmed already-existing community ordinances on clean indoor air. The general pattern of diffusion in California was for smaller-sized suburban communities to adopt tobacco-control policies initially, followed by San Diego and other larger cities. Some 300 municipalities in Massachusetts have clean indoor air ordinances of varying comprehensiveness. The state of Kentucky resisted any tobacco-control policy, other than policies affecting pregnant women and children. Rigotti and Pashos (1991) found that states and larger cities that adopted tobacco-control laws and ordinances tended to be in the western United States and were larger in population size, whereas such policies were less common in tobacco-producing states and in the South. However, at the time of their study (in mid-1989), few state policies were comprehensive (e.g., banning smoking in public places, restaurants, and in workplaces).

Obviously, state laws influence the diffusion and adoption of clean indoor air policies at the community level. For example, by 2004, Duluth was the only community in Minnesota with an ordinance requiring 100% smoke-free workplaces. In contrast, 114 California communities required 100% smoke-free workplaces. Clearly, where a community is located affects its decision to adopt a clean indoor air policy. One key factor is a community's geographical and social proximity to other communities that have previously adopted.

RESEARCH QUESTIONS AND RESULTS

We first conducted an in-depth case study of the 1995 Las Cruces decision to adopt an ordinance banning smoking in public places as part of a project at the University of New Mexico funded by the Centers for Disease Control and Prevention (CDC), which dealt with the process through which community health programs or policies use health research findings. This case study traced the research utilization process through which scientific research findings about secondhand smoke were translated and implemented as a community policy on clean indoor air.

Next, during 2002, with the support of a faculty grant from the University of New Mexico, and using data from the ANR database, we conducted case studies of similar processes in 10 communities in the southwestern United States. The 10 sites included one large city (El Paso, Texas, with a population of half a million), one medium-sized city (Lubbock, Texas, with 200,000 people), two smaller-sized cities (Las Cruces, New Mexico, with 74,000; and Santa Fe, New Mexico, with 60,000), and several towns (Silver City, Deming, Mesilla, Alamogordo, and Carlsbad, all in New Mexico, with populations ranging from 10,000 to 35,000), and one county (Doña Ana, New Mexico, with a population of 100,000). These communities included most of those that considered a clean indoor air policy by 2003. We interviewed knowledgeable individuals in face-to-face interviews, by telephone, and/or by e-mail. We reviewed online newspapers, published reports, and internal documents provided by our interviewees along with related archival material (including a copy of the ordinance adopted in each community) from the ANR for the period from 1995 to 2002. Finally, we content analyzed 173 newspaper articles and editorials from the various communities, finding that the number of pro-ordinance articles or editorials (73/173 or 42%) did not substantially outnumber antiordinance (58/173 or 34%) and neutral (42/173 or 24%) pieces.

Using these methods, we examined six specific research questions (RQs) guided by diffusion of innovation theory and agenda-setting theory.

RQ1: How Important Are the Experiences of Other Communities With a Clean Indoor Air Ordinance in Influencing a Community to Adopt Such a Policy? Innovation attributes are the perceived characteristics of a new idea that influence its rate of adoption: (a) relative advantage, the degree to which a new idea is perceived as better than the idea it supercedes; (b) compatibility, the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters; (c) complexity, the degree to which an innovation is perceived as difficult to understand and use; (d) trialability, the degree to which an innovation can be experimented with on a limited basis; and (e) observability, the degree to which the results of an innovation are visible to others (Rogers, 2003).

As originally defined, these attributes referred to technological innovations (Rogers, 2003), but they are also applicable to a policy innovation such as a clean indoor air ordinance. For example, communities such as Carlsbad, Mesilla, Silver City, and Doña Ana

County in New Mexico, and El Paso in Texas, adapted a version of the Las Cruces ordinance. These later-adopting communities were able to infer the relative advantage of a clean indoor air ordinance (compared to previous nonexistent or weak ordinances), evaluate its complexity (by receiving training from, and consulting with, the Tobacco Free Las Cruces Coalition, who had already implemented such an ordinance), and gauge its compatibility with the community's readiness (e.g., by adopting the ANR model ordinance or ordinances from other communities).

Communities that opted for incremental implementation of a less-comprehensive clean indoor air ordinance, such as Las Cruces, New Mexico, and Lubbock, Texas, essentially tried out the innovation. Las Cruces's initial clean indoor air ordinance was a trial, with the City Council then gradually tightening the existing loopholes in this 1991 ordinance. A *comprehensive* clean indoor air ordinance bans smoking in all public places without exceptions. Such an ordinance was passed in Las Cruces in October 2002. Closing ordinance loopholes in Las Cruces from 1991 to 2002 was difficult and time consuming. Communities that initially adopted more comprehensive clean indoor air ordinances (e.g., El Paso, Texas; Doña Ana County, New Mexico) adopted their policy without first trying it, relying instead on the experience of a previous incremental adopter: Las Cruces. ANR recommends that a community adjust the comprehensiveness of its proposed ordinance on the basis of the level of readiness of the community and its policy makers.

Prior to 1986, only 191 U.S. communities had eliminated smoking in restaurants, workplaces, or other public places. By 2002, more than 1,513 U.S. communities had adopted some type of clean indoor air ordinance (see Figure 1). This rapid diffusion of clean indoor air policies spread nationally and was mirrored in the southwestern United States. Las Cruces pioneered adopting a clean indoor air ordinance in 1991 that banned smoking in city buildings and a more comprehensive 1995 ordinance that banned smoking in all public places, with the exception of bars, truck stops, bowling alleys, and bingo parlors. Since 1999, Las Cruces influenced 7 other communities to adopt a similar policy. Combined, these communities total more than 1 million people who are now largely protected from the hazards of involuntary exposure to secondhand smoke. Deming and Alamogordo, both in New Mexico, were also influenced by the Las Cruces experience but were unsuccessful in adopting a clean indoor air ordinance in 2002.

In sum, obtaining information from other communities shaped the perceived attributes of a clean indoor air policy and thus influenced a community's decision to adopt a policy.

RQ2. How Important Are Proinnovation Champions and Anti-Innovation Champions in the Community-Level Agenda-Setting Process for Clean Indoor Air Policies? We define *champions* as charismatic individuals who throw their weight behind a policy to help overcome indifference or resistance (Rogers, 2003). These policy entrepreneurs (Mintrom, 1997) play a leadership role in actively promoting a new policy in a system by linking individuals and organizations and by acting as positive advocates for the new policy. Initial research on organizational and community champions indicated that they were characterized by considerable power and by high status, but recent research shows that champions are unique in having extensive social contacts and negotiating skills and that they may be found at various levels of status in an organization or community (Goodman & Steckler, 1989; Rogers, 2003). We found that a proinnovation champion was on the city council in seven of our eight communities that adopted a clean indoor air ordinance. However, champions for these ordinances are not necessarily powerful, high-status individuals, as indicated by the important role of youthful champions. The

City Council of Lubbock, Texas, enacted a comprehensive clean indoor air ordinance in July 2001 by a 4-3 vote as the result of a process initiated by a 10-year-old sixth-grader who suffered from asthma and who organized STIR (Stop Tobacco in Restaurants).

Silver City, New Mexico, owes its clean indoor air ordinance to the efforts of a then 15-year-old girl who lobbied City Council members to support the ordinance. In 2001, the council voted for a strong ordinance that banned smoking in all restaurants, day-care facilities, adult and assisted living facilities, and all city-owned public places in Silver City. The teenager then moved from Silver City to Albuquerque when her mother changed jobs. Consequently, the teenager led a campaign for a comprehensive clean indoor air ordinance in Albuquerque. She was elected chair of MASCOT (Multicultural Advocates for Social Change on Tobacco), a tobacco-control coalition in Albuquerque. The 17-year-old, who was home schooled, spent an estimated 40 hours per week on tobacco-control activities. In 2003, Albuquerque adopted a clean indoor air ordinance that banned smoking in restaurants but not in bars.

Champions (both pro- and anti-innovation) were particularly important in framing the clean indoor air issue in each community that we studied.

The tobacco industry has not been content to let public health advocates dictate the terms of the debate. The industry attempted to reframe tobacco control policies so that they are perceived by the public and policy makers as violating important core values, such as freedom, independence, autonomy, fairness, economic opportunity, and free enterprise. (Menashe & Siegel, 1998, p. 322)

Many pro-ordinance champions in our study passionately oppose tobacco use. The champions in our 10 communities included city council members and ordinary citizens, schoolteachers and housewives, both youth and adult. For example, a schoolteacher launched Deming's unsuccessful campaign. A Las Cruces City Council member who strongly and personally opposed smoking initiated the adoption of a clean indoor air policy in that city in 1991 and 1995. These champions had directly experienced the hazardous effects of tobacco or had lost loved ones to tobacco-related causes.

Although anti-innovation champions have been largely ignored in the literature, we found that they also played an important role in the adoption/rejection process. Anti-innovation champions included business owners who feared that a clean indoor air ordinance would diminish their business volume and civil libertarians who argued that an ordinance infringed on individual rights. Anti-innovation champions in our 2002 study included the owner/proprietor of a chain of restaurants (the Village Inns and Applebee's restaurants in Las Cruces and El Paso), who also served as chair of the New Mexico Restaurant Association. In Carlsbad, New Mexico, a City Council member and his sister (a tobacco company employee) in 1996 campaigned successfully against a clean indoor air ordinance. In 2001, however, after their links to the tobacco industry were exposed, these anti-innovation champions failed to prevent passage of the ordinance.

Certain businesses, especially those in the hospitality industry, are strong opponents of community-level clean indoor air policies. Often, these businesses and their trade associations (i.e., state restaurant associations) frame tobacco-control ordinances as an individual rights issue. Critics contend that these businesses and their associations are often fronts for the tobacco industry. Dearlove, Bialous, and Glantz (2002) concluded, "The tobacco industry has effectively turned the hospitality industry into its de facto lobbying arm on clean indoor air" (p. 101). For example, during Lubbock's 2001 campaign

to pass a clean indoor air ordinance, the Smokeless Lubbock Coalition released to local newspapers a series of e-mail messages between the Lubbock Restaurant Association and an advertising agency employed by Philip Morris.

Facing mounting criticism from tobacco-control advocates and a huge 1998 court settlement to states for damages from its products, the tobacco industry mounted its own counterattacks to prevent local communities from enacting clean indoor air ordinances. The tobacco industry attempted to reframe tobacco policy issues as violating important core values (Menashe & Siegel, 1998). Jacobson and colleagues (1993) found that the tobacco industry "attempted to shift the nature of the debate from the credibility of the scientific evidence to personal freedoms" (p. 800) and that "anti-smoking forces fare better when public health issues dominate and the tobacco industry benefits when personal freedoms arguments are predominant. . . . Once the debate shifted to personal freedoms, statewide anti-smoking legislation stalled" (p. 801).

Each community's policy decision about clean indoor air involved a conflict between proinnovation and anti-innovation champions, as each side struggled to frame the issue favorably to their position. Clean indoor air ordinances often elicit passionate responses in communities, both for and against adoption of the policy. During the 1994 (unsuccessful) attempt to pass a no-smoking ordinance in El Paso, the then-director of the City/County Department of Health and Environment reported that he received several death threats. Our study revealed the important role that champions play in the community-level agenda-setting process for clean indoor air policies. One such role is that of framing the clean indoor air issue.

RQ3: How Does the Framing of a No-Smoking Ordinance Impact Its Adoption or Rejection? Framing is the process through which advocates or the mass media position certain meanings of an issue to shape perceptions of that issue (Wallack, Dorfman, Jernigan, & Themba, 1993). Little scientific evidence shows that clean indoor air ordinances have a detrimental effect on restaurant sales. However, the 2001 Lubbock clean indoor air ordinance involved a confrontation between champions who perceived secondhand smoke in restaurants as a public health issue and those who saw it as an economic/business and individual rights issue.

For this study, we obtained press clippings related to the clean indoor air issue in the 10 communities from 1995 to 2002 from the ANR database. ANR regularly monitors tobacco-related news via Internet searches, primarily using Alta Vista and Google search engines and by visiting regional and local newspapers' Web sites and other interest sites, including the bulletin board system at tobacco.org and bizjournals.com. A combination of search terms was used such as "smoke-free," "smokefree," "smoking," "smoke," "smokers," "nonsmoking," "ban," and "restrictions." The term "ordinance" was not used because so few newspapers use the word. For the present study, ANR provided us with 173 clippings that fit our search parameters.

Initially, two coders reviewed a set of 20 newspaper clippings and together coded them for "issue frame" and "issue slant." Disagreements were resolved by reviewing the problem clipping together to determine the reason for the disagreement. Then, each coder independently coded 20 additional clippings. There was 90% preintercoder agreement for coding of issue slant and 85% agreement for issue frame. Both coders then coded the entire set of clippings. Intercoder reliability for the entire data set, indicated by Scott's Pi, was .80 for issue slant and .77 for issue frame. The frame expressed in each newspaper clipping, by community, is shown in Table 1.

Table 1. Types of Issue Frames Attributed to Analyzed Newspaper Clippings

City	Total No. of Clippings	Health Frame		Economic Frame		Individual Rights Frame		Neutral Frame	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Las Cruces, NM	38	10	26.3	4	10.5	19	50.0	5	13.2
Dona Ana County, NM	1	1	100.0	NA	NA	NA	NA	NA	NA
Mesilla, NM	4	1	25.0	2	50.0	NA	NA	1	25
Santa Fe, NM	17	5	29.4	1	5.9	5	29.4	6	35.3
Alamogordo, NM	5	1	20.0	1	20.0	NA	NA	3	60.0
Carlsbad, NM	35	10	28.6	9	25.7	12	34.3	4	11.4
Lubbock, TX	59	33	55.9	6	10.2	11	18.6	9	15.3
El Paso, TX	14	4	28.6	6	42.9	1	7.1	3	21.4
Totals	173	65	37.6	29	16.8	48	27.7	31	17.9

Public health frames did not dominate the policy decision in Alamogordo (in Deming, New Mexico, adequate data were not available). In both cases, attempts to pass a clean indoor air ordinance failed. The Alamogordo City Council rejected the policy, and then in September 2002, the proposed ordinance was defeated in a public referendum. In 2002, Deming eventually tabled the proposed ordinance indefinitely because of inadequate organization and planning.

Ordinance opponents in Las Cruces (1995) and Lubbock (2001) used the individual rights frame to force concessions from clean indoor air ordinance advocates. In Las Cruces, the concession in 1995 was to exempt truck stops, bowling alleys, and bingo parlors from the clean indoor air ordinance passed (this ordinance was replaced in 2002 by a more comprehensive ordinance). In Lubbock, stand-alone bars, restaurant-bars, and private members' clubs were exempted from the 2002 clean indoor air ordinance.

In the eight communities that adopted clean indoor air ordinances (the New Mexican cities of Las Cruces, Silver City, Carlsbad, Mesilla, Santa Fe, and Doña Ana County; and El Paso and Lubbock in Texas), clean indoor air coalitions persuaded their respective communities that secondhand smoke was a critical public health issue. Conversely, clean indoor air ordinances were unsuccessful in situations (e.g., Alamogordo) in which opponents framed the policy as an individual rights—and, to some extent, an economic/business—issue. We conclude that how a clean indoor air ordinance is framed has an important impact on its adoption or rejection.

RQ4: What Role Do Formal Coalition Organizations Play in the Adoption, Maintenance, and Diffusion of the Ordinance? A coalition can coordinate the efforts of individual champions for clean indoor air policies. We found that the Tobacco Free Las Cruces Coalition (a) was crucial in tightening that city's clean indoor air ordinance through four amendments from 1995 to 2002, when a very comprehensive ordinance was adopted; and (b) in disseminating their lessons learned to other communities in New Mexico and West Texas.

The diffusion process from an opinion-leader community like Las Cruces to other cities was initiated by the Tobacco Free Las Cruces Coalition (TFLCC), which also led tobacco control forces in Las Cruces through four amendments (in 1997, 1998, 2000,

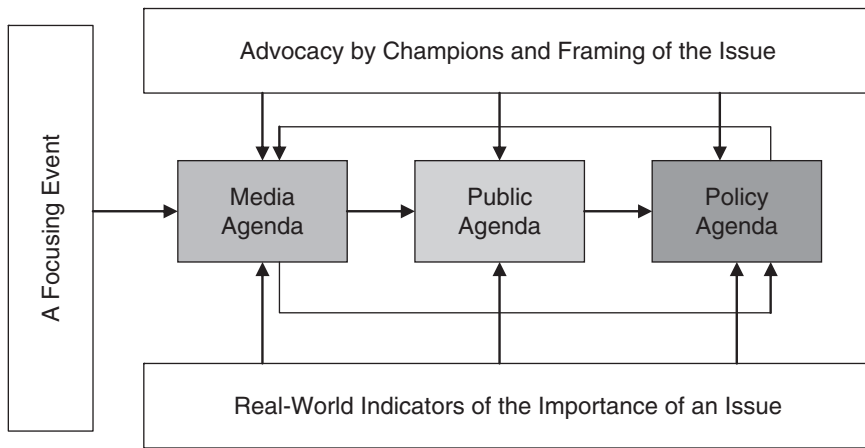


Figure 2. The agenda-setting process for an issue like a clean indoor air policy in a community. SOURCE: Based on Dearing and Rogers (1996).

and 2001) to strengthen the city's 1995 ordinance, culminating in a very comprehensive ordinance adopted in 2002 (which bans smoking in all public places, without exception). As the Las Cruces case suggests, adoption of a no-smoking policy often is a continuous process over several years of implementing, strengthening, and enforcing a basic policy to encourage clean indoor air. The continuous nature of policy making for a clean indoor air ordinance is one reason why a formal organization like the TFLCC played such a crucial role in the policy process, both in Las Cruces and in the nine other southwestern communities of study.

RQ5: How Important Are "Real-World Indicators" (Variables That Objectively Measure the Severity of a Social Problem, Like Smoking Prevalence) Versus "Focusing Events" in the Policy Process of Adopting Clean Indoor Air Ordinances in Communities? Biomedical research results on the health effects of secondhand smoke were used in policy making about clean indoor air ordinances in our communities of study, mainly through the role of champions and coalitions. Agenda-setting research indicates that a real-world indicator is relatively unimportant in initiating the agenda-setting process, compared to a focusing event, defined as a crisis, disaster, or tragic event that draws a community's attention to an existing social problem (Dearing & Rogers, 1996). Agenda setting is the process through which an issue rises to priority attention in a system (see Figure 2). A focusing event initially draws attention to the issue so that it receives news coverage (and climbs the media agenda). Then many individuals in a community feel that the issue is important (the public agenda), leading it up the policy agenda.

The media agenda in a community represents (a) the amount of news coverage of the clean indoor air ordinance and (b) the slant of this news coverage (Stillman, Cronin, Evans, & Ulasevich, 2001). The public agenda in each community represents the percentage of community members favorable to the clean indoor air ordinance. Conventional wisdom among policy advocates holds that approximately 70% of the public (measured by a community survey) must be favorable toward a clean indoor air ordinance before

Table 2. Opinion Poll Results

City	% in Support of Ordinance
Las Cruces, NM	74.0
Santa Fe, NM	68.0 ^a
Alamogordo, NM	55.0 ^b
Carlsbad, NM	70.3
Lubbock, TX	69.0 ^c
El Paso, TX	69.0 ^d

a. Sixty-eight percent of the public surveyed favored making public places smoke free, with 56% favoring smoke-free restaurants.

b. This number reflects the 55% in favor of a 100% ban, whereas 35% opposed the comprehensive ordinance.

c. A Scripps Howard survey of Texans (May, 2001) found that 45% would choose to make all restaurants smoke free, 49% felt that restaurateurs should decide for themselves, and 4% felt that there should be no restrictions.

d. A poll by the *El Paso Times* (2/27/02) also found that 44% of those surveyed stated that they would patronize restaurants and bars more frequently now that they were smoke free, 7% would go out less frequently, and 49% said that they would not change their current habits.

policy makers will approve it. Our review of articles and editorials revealed that in 6 of the 10 communities, local media outlets polled public opinion on the issue of adoption or rejection of clean indoor air ordinances. Because reliability measures of these opinion poll data are not available, caution regarding the findings is warranted. Nevertheless, these data indicate some relevance for this 70% threshold. Table 2 shows that only Alamogordo, the one city of the six that did not adopt, was the only case in which public support of the ordinances substantially fell below 70%.

Clean indoor air policies are diffusing rapidly across the United States (Conlisk et al., 1995; Jacobson et al., 1993; Pippert et al., 1995; Rigotti & Pashos, 1991; Samuels & Glantz, 1991; see Figure 1). Currently, one U.S. community is adopting a clean indoor air ordinance approximately every day. As a result, many U.S. communities have banned all workplace smoking, and it is increasingly difficult to find an office, shop, theater, or means of public transportation in which smoking is permitted. Workplace smoking restrictions lead to reduced cigarette consumption, with little evidence of compensatory smoking outside the workplace. Smokers have come to accept these restrictions, with many either choosing to forego smoking while they are at work or to smoke in designated and ventilated areas, or outdoors (Emmons & Thompson, 2000; Willemsen & Meijer, 1999).

Consistent with past research on agenda setting (Dearing & Rogers, 1996), we found that a focusing event often triggered the agenda-setting process. This focusing event might consist of a health crisis for a youthful champion, as in Lubbock, or the election of a pro-ordinance advocate to the City Council, as in Las Cruces. Data on possible real-world indicators of the secondhand smoking problem (i.e., the percentage of adults who smoked or the severity of asthma) were not available in the 10 communities of study.

RQ6: To What Extent Is an Existing Clean Indoor Ordinance Reinvented When Adopted by a Community? Past research suggests that reinvention contributes to a more rapid rate of adoption (Rogers, 2003). A policy innovation that is modified and customized to suit the conditions of each system diffuses more rapidly and may be sustained longer. When communities consider a clean indoor air ordinance, they face a great deal of uncertainty.

A community coalition does not know the strength of the opposition, how to frame the issue, or whether it will pass. Community champions typically borrow and adapt clean indoor air ordinances from other communities like them that have implemented an ordinance and may visit other communities to learn from them about advocacy strategies.

As discussed previously, all clean indoor air ordinances are not the same. For example, ANR data show that 87% of the 1,513 U.S. communities with a clean indoor air ordinance include workplaces and 73% cover restaurants, but only 15% cover bars. The ordinances in the 10 communities we studied ranged widely in their degree of comprehensiveness.

Reinvention refers to purposeful changes that adopters make in an innovation as it diffuses. Most research on reinvention deals with technological innovations (Rogers, 2003), but the policy reinvention process may have certain parallels. All 10 southwestern communities of study started with the ANR model ordinance and with clean indoor air ordinances borrowed from other, previously adopting communities and then modified the provisions of these ordinances to suit their local conditions. No community drafted its clean indoor air ordinance from scratch.

We found that reinvention was essential to diffusion of clean indoor air ordinances. The main dimension of reinvention for clean indoor air ordinances was their degree of comprehensiveness. For example, in Albuquerque a policy that initially included banning smoking in bars and restaurants was debated in 2003, but strong resistance led to limiting the policy to restaurants.

CONCLUSION

The present investigation advances our understanding of the diffusion of policy innovations and the agenda-setting process in a number of ways. In general, we found many parallels between the diffusion of technological innovations (the main focus of past research on diffusion) and the spread of a policy innovation. Both proinnovation and anti-innovation champions played very important roles in the diffusion of clean indoor air policies. Although previous conceptions of champions characterized them as powerful individuals of relatively high status in a system, we found that effective champions are capable negotiators and widely connected socially. Champions seldom acted alone in a community agenda-setting process; instead, most acted through community coalitions. These coalitions gave continuity to the advocacy of a clean indoor air ordinance in a community. Such continued attention was often required to (a) oppose negative champions over time and (b) tighten up an initial ordinance, eliminate loopholes, and thus make it more comprehensive.

We found that the framing of a clean indoor air ordinance in a community, often by champions and/or coalitions, was crucial in adoption or rejection of the policy. An ordinance was much more likely to be adopted if it was framed as a public health issue, rather than as an individual rights issue or as an economic/business issue.

Much reinvention of clean indoor air ordinances occurred in each community of study. Model ordinances were obtained from outside of the community and then modified to fit local conditions, especially regarding comprehensiveness of the policy.

Limitations

Because we focused on a variety of specific community-based processes and events to identify influences on the adoption or rejection of clean indoor air ordinances in a

small sample of communities in the Southwest, our study's generalizability is limited. Furthermore, we did not account for the impact that recent national and secular trends toward greater health consciousness—whether attributed to the sustained efforts of the public health movement (Susser, 1995) or the commercialization and medicalization of daily life (Barsky, 1988)—may have had on the accelerating rate of clean air regulatory enactments by multiple communities over time. We acknowledge that greater awareness of health issues leads to greater scrutiny of health policies (Barsky, 1988). However, greater awareness and scrutiny alone do not always lead to positive behavioral change. Despite these national trends, as of 2006, neither Alamogordo nor Deming, New Mexico, has adopted local clean indoor air ordinances of any kind. We believe that our study focusing on the local (rather than national) agenda-setting process increases our understanding of potentially key elements of community-based approaches to tobacco control that are an important part of a comprehensive program to reduce tobacco use (Cummings, 1999). We suggest that future study focus on comparing these key elements across multiple cases over time and hope that our study serves as an exemplar for the study of the diffusion and adoption of policy (rather than technological) innovations.

Implications for Practitioners

The present study suggests that practitioners involved in health advocacy activities may be more successful if they focus attention on champions, issue framing, health policy comprehensiveness, and other systems that previously enacted the health policy. Clean indoor air advocates should concentrate policy promotion efforts on focusing events (e.g., high-profile media events in the community), rather than relying on the persuasive impact of real-world indicators that are perceived as relatively less important in many cases (e.g., smoking prevalence in a community). We found that only 7.7% of newspaper clippings referred to public health research, yet 4.6% referred to economic research.

Policy advocates should also consider the local adaptation, or reinvention, of a clean indoor ordinance in terms of incremental versus comprehensive adoption. The ANR advocates the adoption of incrementally comprehensive ordinances that are sure to be adopted given a particular political climate. However, despite their history of incremental adoption, the TFLCC now advocates promoting initial adoption of a fully comprehensive ordinance. Future research should investigate the effectiveness of incremental versus initial-comprehensive policy-promotion strategies.

References

- Americans for Nonsmokers' Rights Foundation. (2002, March 13). *Cumulative rate of adoption of clean indoor air ordinances in the United States*. Retrieved from the ANR Foundation Local Tobacco Control Ordinance Database: <http://www.no-smoke.org/goingsmokefree.php?dp=d13lp140/>
- Barsky, A. J. (1988). The paradox of health. *New England Journal of Medicine*, 318(7), 414-418.
- Bartosch, W. J., & Pope, G. C. (2002). Local enactment of tobacco control policies in Massachusetts. *American Journal of Public Health*, 92(6), 941-943.
- Conlisk, E., Siegel, M., Lengerich, E., MacKenzie, W. M. S., & Ericksen, M. (1995). The status of local smoking regulations in North Carolina following a state preemption bill. *Journal of the American Medical Association (JAMA)*, 273(10), 805-807.
- Cummings, K. M. (1999). Community-wide interventions for tobacco control. *Nicotine & Tobacco Research*, 1, S113-S116.
- Dearing, J. W., & Rogers, E. M. (1996). *Agenda-setting*. Thousand Oaks, CA: Sage.

- Dearlove, J. V., Bialous, S. A., & Glantz, S. A. (2002). Tobacco industry manipulation of the hospitality industry to maintain smoking in public places. *Tobacco Control, 11*, 94-104.
- Emmons, K. M., & Thompson, B. (2000). The relationship between organizational characteristics and the adoption of workplace smoking policies. *Health Education & Behavior, 27*, 483-501.
- Fichtenberg, C. M., & Glantz, S. A. (2000). Association of the California Tobacco Control Program with declines in cigarette consumption and mortality from heart disease. *New England Journal of Medicine, 343*(24), 1772-1777.
- Glantz, S. A., & Balbach, E. D. (2000). *Tobacco war: Inside California battles*. Berkeley: University of California Press.
- Glantz, S. A., & Parmley, W. W. (2001). Even a little secondhand smoke is dangerous. *JAMA, 286*, 462-463.
- Goodman, R. M., & Steckler, A. (1989). A model for the institutionalization of health promotion programs. *Family and Community Health, 14*, 63-78.
- Hopkins, D. P., Briss, P. A., Ricord, C. J., Husten, C. G., Carande-Kulis, D. G., Fielding, J. E., et al. (2001). Reviews of evidence regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke. *American Journal of Preventive Medicine, 20*(2S), 16-66.
- Jacobson, P. D., Wasserman, J., & Raube, K. (1993). The politics of antismoking legislation. *Journal of Health Politics, Policy and Law, 18*(4), 787-819.
- Lamb, S., Greenwich, M. R., & McCarty, D. (Eds.). (1998). *Bridging the gap between research and practice: Forging partnerships with community-based drug and alcohol treatment*. Washington, DC: National Academy Press.
- Magzamen, S., & Glantz, S. A. (2001). The new battleground: California's experience with smoke-free bars. *American Journal of Public Health, 91*, 245-252.
- Menashe, C. L., & Siegel, M. (1998). The power of a frame: An analysis of newspaper coverage of tobacco issues: United States, 1985-1996. *Journal of Health Communication, 3*, 307-325.
- Mintrom, M. (1997). Policy entrepreneurs in the diffusion of innovations. *American Journal of Political Science, 41*, 738-770.
- National Academy of Sciences. (1986). *Environmental tobacco smoke: Measuring exposure and assessing health effects*. Washington, DC: National Research Council, Committee on Passive Smoking.
- Norman, G. J., Ribisi, K. M., Howard-Pitney, B., Howard, K. A., & Unger, J. B. (2000). The relationship between home smoking bans and exposure to state tobacco control efforts and smoking behaviors. *American Journal of Health Promotion, 15*(2), 81-88.
- Pierce, J. P., Gilpin, E. A., Emery, S. L., White, M. M., Rosbrook, B., Berry, C. C., et al. (1998). Has the California Tobacco Control Program reduced smoking? *JAMA, 280*, 893-899.
- Pippert, K., Jecha, L., Coen, S., MacDonald, P., Francisco, J., & Pickard, S. (1995). A cooperative effort to pass tobacco control ordinances in Wichita, Kansas. *Journal of Public Health Management Practice, 1*(2), 18-22.
- Rigotti, N. A., & Pashos, C. L. (1991). No-smoking laws in the United States: An analysis of state and city actions to limit smoking in public places and workplaces. *JAMA, 266*(22), 3162-3167.
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.
- Rohrbach, L. A., Howard-Pitney, B., Unger, J. B., Dent, C. W., Howard, K. A., Cruz, T. B., et al. (2002). Independent evaluation of the California Tobacco Control Program: Relationships between program exposure and outcomes, 1996-1998. *American Journal of Public Health, 92*, 975-983.
- Samuels, B., & Glantz, S. A. (1991). The politics of local tobacco control. *JAMA, 266*(15), 2110-2117.
- Stillman, F. A., Cronin, K. A., Evans, W. D., & Ulasevich, A. (2001). Can media advocacy influence newspaper coverage of tobacco: Measuring the effectiveness of the American Stop Smoking Intervention Study's advocacy strategies. *Tobacco Control, 10*, 137-144.
- Susser, M. (1995). The tribulation of trials—intervention in communities (Editorial). *American Journal of Public Health, 85*(2), 156-158.
- U.S. Environmental Protection Agency, Indoor Air Division, Office of Atmosphere and Indoor Programs, Office of Air and Radiation. (1992). *Respiratory health effects of passive smoking: Lung cancer and other disorders* (Report No. EPA/600/6-90/006F). Washington, DC: Author.

- U.S. Surgeon General. (1986) *The health consequences of involuntary smoking: A report of the Surgeon General* (Report No: CDC 87-8398). Washington, DC: U.S. Department of Health and Human Services.
- Vinzant, J. H., Hays, S. P., & Hays, C. E. (2002). *Competing issue frames and the adoption of municipal ordinances for tobacco control*. Unpublished manuscript, University of Illinois, Champagne-Urbana, Institute of Government and Public Affairs, Center for Prevention Research and Development.
- Wallack, L., Dorfman, L., Jernigan, D., & Themba, M. (1993). *Media advocacy and public health: Power for prevention*. Thousand Oaks, CA: Sage.
- Willemsen, M. C., & Meijer, A. (1999). Applying a contingency model of strategic decision making to the implementation of smoking bans: A case study. *Health Education Research, 14*, 519-531.