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Theoretical Underpinnings of Media Research in Tobacco Control and Tobacco Promotion

The media have played a key role in historical trends in tobacco use and its impact on human health and are involved in subsequent efforts to promote health and control tobacco use. This chapter examines the theoretical base for media studies (both protobacco and antitobacco) within the context of three research frameworks.

- ***Individual-level framework.*** *This includes the effects of media and mass communications on individuals, including expectancy-value theories of behavior change based on attitudes and beliefs, social cognitive theory and its related construct of modeling beliefs and behavior, and information-processing models.*
- ***Social network/organizational-level framework.*** *A higher system-level approach in which groups of actors, including the media, advertisers, and other stakeholders, interact with the defined and targeted characteristics of an audience, driven by feedback such as readership or ratings. Such models break down further into areas such as specific organizational roles within the media, the overall flow of information, and the larger political, economic, and cultural contexts.*
- ***Societal-level framework.*** *This approach envisions the media as a product of forces in society, serving in turn as agents for social conflict and social change or as advocates of emerging social movements. Concepts such as media advocacy, framing, and communications inequality all have their roots in this societal view of the role of the media.*

Each of these three frameworks provides a backdrop to the theoretical assumptions informing the work reviewed throughout this monograph to study the media and tobacco, ranging from studies of individual message recall or attitude change, to the effect of protobacco and antitobacco media messages on tobacco use, to the social or political impact of media interventions. Each of these efforts, in turn, contributes to a broader and continually evolving understanding of the impact of media on smoking behavior and public health.

Introduction

This chapter presents an overview of the history of media-effects research, abiding issues and concerns that have driven the research, and three broad frameworks (levels of analysis) that inform communications science, discussed here in the context of their relevance to tobacco use and tobacco control.

Mass media are among the most powerful socializing agents of our time. The media influence how we think and what we think about. They daily shape our collective perceptions of "normative" and "normal," of "important" and "insignificant," of "good" and "bad," of "success" and "failure," of "cool" and "uncool," and much more. The importance of media communications is woven deeply into the fabric of postindustrial societies such as the United States and, increasingly, the industrial and developing world. The media's roles and functions have grown complex over time, reflecting the postindustrial world's own growth and complexity as well as its paradoxes and contradictions. This is nowhere more evident than in the media's variable impact on human health.[1]

Although tobacco has been commercially exploited since the sixteenth century,[2] the convergence of historical forces that created the Industrial Revolution set the stage for tobacco's global diffusion and its devastation of human health. The 20/20 hindsight of this century makes it possible to see that energy-harnessing technologies made mass production of tobacco and other products possible but also transformed economic models. Technology sped up production, reduced per unit production costs, and permitted the manufacture of mass supplies of products. While there must have been some demand for tobacco to start with, mass supply required mass demand, sales, and consumption to complete the equation. How did manufacturers drive demand leading to mass sales and consumption of tobacco?

The Industrial Revolution also provided a unique part of the answer: modern means of media communications. The combination of mass production and mass communications (e.g., advertising), in essence, created the modern market economy.[3] In the case of tobacco and the instruments of communications, conditions converged, beginning in the nineteenth century, to create the "perfect storm" that has been affecting human health ever since.

Key to understanding the interaction of media communications and tobacco is the recognition that both are industries—that is, formal organizations with rationalized goals and objectives, differentiated functions, and established routines to accomplish their work. Arguably, the media are the more complex of the two, if only because they are not composed of a single industry with a single goal, but many industries with many goals. They also play multiple roles and functions in society that are frequently contradictory.

For example, while modern advertising, marketing, and communications are used every day to propel sales and consumption of tobacco and other products, the same strategies are used to promote health and prevention. While entertainment media intentionally or unwittingly shape youthful perceptions of smoking as cool and sexy, leading to increased initiation of teen smoking, the same media may be used to promote pro-health changes through powerful drama and narratives.[4] Advocates of both tobacco control and the tobacco industry have dueled in the arena of the news media, attempting to interpret tobacco's role in causing cancer and other illnesses.

These contradictions, coupled with the perceived power of the media, have endowed the study of media in tobacco promotion and tobacco control with the substantive interest of scholars, policymakers, tobacco

control advocates, and the tobacco industry. The controversy associated with mass media's role in tobacco has garnered funding to study media effects on tobacco use, with equally substantive interest in shaping the debate on media effects themselves. This voluminous body of work, while providing deep insights into the role of the media, has also created a fog of misunderstanding through both over- and underestimation of media effects.

The arrival of the digital information epoch, characterized by profound transformation in communications and biomedical innovation,[1] is a good time to take stock of the literature on the role of mass media in tobacco promotion and tobacco control, especially to define media impact with greater precision. A systematic and intensive examination, informed by research frameworks at multiple levels, may serve several functions for the future of tobacco control: identify lessons learned, discern gaps in research, call attention to implications for public communications, and highlight pointers for public health and communication policies. Finally, this examination may better prepare us to study and understand how new media technologies may be harnessed for tobacco control and the general improvement of public health.

History of Media-Effects Research

The history of communications research is rich in multiple perspectives and can be traced back at least 100 years to near the turn of the twentieth century. While space limitations prevent doing justice to this rich history, many erudite accounts of its development exist.[5–9] Briefly, however, communications research has developed along five distinct dimensions:[7] the study of communications in politics, political process, and institutions; communications in social life; psychology and social psychology of communications; communications in education; and sponsored communications research.

A narrow reading of the history of mass communications research could convey the mistaken impression that it has emphasized media effects on individuals primarily to cater to the interests of the industry, such as audience research, and to the interests of the government for propaganda. Yet, earlier accounts[7–9] have pointed out that mass communications research has been driven quite extensively by public concerns about media's power to promote certain ideas and world views and their impact on the social order, particularly on more vulnerable audiences such as children.[9] Conventionally, such research has focused on three broad areas, though not necessarily with the same degree of emphasis: (1) media effects on public opinion, public attitudes, beliefs, knowledge, and behavior; (2) the roles of the press in society, including immigrant socialization and community integration; and (3) media production processes, including organizational determinants and professional practices of reporters and producers.

The research literature on mass media and children, including effects of mass communications (e.g., advertising and television among others), may also be applicable to adults. The literature suggests the following:[9]

- The appearance of each new mass medium triggered similar research questions on media effects.
- The primary interest has been the effects of media on the moral development and behavior of children.
- The research questions were shaped by public controversies and debates about the new media.
- Most research programs, in general, concluded that the effects of media are

subject to the influence of a number of conditions, including interpersonal influences, and are mediated by a set of individual, situational, parental, and societal factors.

- Earlier programs of research have set the agenda for subsequent programs of research on media effects.
- Some of the media research, especially on youth, was influenced by the social reform movements of the twentieth century, such as women's rights, civil rights, and the peace movements, among others.

The relevance of this history for the study of media effects in tobacco-related communications is important given the driving concern about the impact of tobacco-related content in media. This history includes media such as advertising and movies; the impact on the public in general and children in particular; and the use of mass media to reduce, if not eliminate, tobacco use among the American public through education and policy advocacy campaigns. The extensive body of work in tobacco-related communications research spans the spectrum of tobacco industry and tobacco control advocates' influence on the production of media messages in advertising, news, and entertainment and the effects of such messages on individuals, groups, institutions, and policymakers.

The context of tobacco-related communications research is critical to understanding this work. Typical of earlier stages in the history of communications research, both the tobacco industry and the government took an abiding interest in examining the impact of communications on tobacco use, though for different reasons. Each new finding was subject to different interpretation—social action and policymaking thus generating fodder for continuing controversy. This charged context provides the backdrop for this monograph, which examines the theory, evidence, and significance of communications research for tobacco use and control.

Levels of Theory and Analysis

Media studies in tobacco may be organized along three broad levels of analysis: individual, social network/organizational, and societal.[10]

This framework is not intended to be fully comprehensive of media studies; it is a way of organizing the vast body of research that is relevant to tobacco use and tobacco control. At the same time, this framework is not without consequences. A researcher's selection of a unit and level of analysis conveys the importance of understanding a problem at that particular level. More critically, perhaps, the level of analysis is consequential to how findings are used to shape social action for prevention and control or, for that matter, how best to market tobacco and smoking to particular audiences. Invariably, the level of analysis in all research determines the framing and importance of the problem of interest, in this case, tobacco.

Some research cuts across levels of analysis. For example, a particular study may focus on how mass communication campaigns change social norms associated with secondhand smoke among individuals. The study may discover subsequent changes, not only in social norms among individuals, but also in social policies, such as restriction of smoking in public places (e.g., in bars and restaurants). In other words, communications focused on changes in social norms around tobacco among individuals may either directly or indirectly contribute to social policies on restricting tobacco use in public places. From this example, it could be argued that organizing tobacco-related communications research

along levels of analysis could provide a more holistic understanding of the impact of communications on tobacco use and control for individuals, groups, institutions, and the broader society. Similarly, tobacco companies may promote the idea that any restrictions on smoking in public are an infringement on individual rights and potentially reduce support for public policies to regulate smoking. In the interpretation of research, findings seldom divide neatly and exclusively along discrete levels.

In the sections that follow, research in media studies is discussed along the three levels of analysis/frameworks: individual, social network/organizational,* and societal. Examples are drawn from tobacco-related research.

Individual-Level Analyses and Tobacco-Related Communications

Understanding the effects of communications on individuals has been the most common and dominant level of analysis in media studies. Analysis at this level has been dominant because two of the earliest and longest-sustained contributions to communications research emerged from (1) work on the study of the negative effects of propaganda during World War II and subsequent work carried out at Yale University in the 1950s that led to a focus on the study of a persuasion approach in communication studies[8,11] and (2) work on the negative effects of communications on children.[9] Both approaches have influenced subsequent work in tobacco-related communications.

This work had considerable influence on understanding the mechanisms that could explain the effects of media in promoting or preventing tobacco use through commercial advertising or public health communication campaigns or tobacco-related content in mass media. For example, tobacco advertising and the presence of tobacco in movies may frame the use of tobacco as "cool" and "liberating," and tobacco use as "satisfying," thus focusing on the individual's affect (see part 2, especially chapters 3–5). Similarly, most mass media interventions in tobacco control also focused on changing the cognitions, affect, and behaviors of individuals (chapters 11 and 12). Media interventions can promote smoking cessation by either increasing smokers' motivation to quit or increasing their chance of success on any given attempt.[12,13] Media interventions can also promote adoption of policies such as clean air legislation that reduces both the population's exposure to secondhand smoke and the visibility of smokers.[14] Media campaigns can reduce smoking initiation among youth by deglamorizing smoking and framing it as a deviant and undesirable behavior.[15] Specifying the psychological mechanisms by which mass media can contribute to tobacco promotion or tobacco control depends on the theory of attitude and behavior change as well as on how media messages are processed and retained in the minds of the audience.

Early persuasion models that focused on individual effects suggested that advertisements brought about behavior changes through a hierarchy or chain of contingent conditions.[16] For example, McGuire[17] suggests that to be influenced by a message, an audience must be exposed to it, pay attention to and understand it, and develop a cognitive or affective response. These models assume that a break in the chain of contingency or a reduced outcome at any of the steps will lead to little or no response to the advertising. Many of

*Another approach is to examine the social-network and organizational levels separately. They are combined here for the sake of simplicity.

these models also assume that attitudes and behaviors in response to persuasive messages are developed consciously and rationally,[18] though it is equally conceivable that the processes that McGuire and others postulate operate at an automatic or unconscious level.

Expectancy-Value Theories of Attitude and Behavior Change

Like these early models, expectancy-value models implicitly assume that individuals have control over their choices and that they base their choices on information available to them. The expectancy-value models include two components as predictors of attitudes, or in the case of decision models, behavioral choice. The two components are an *expectancy*—the likelihood that the decision is associated with a particular outcome—and a *value,* that is, the positive or negative valence associated with that outcome. Introduced in various forms but dating back to early psychological research (e.g., behavioral decision theory[19] and subjective probability theory[20]), the core assumption of expectancy-value models is that people strive to maximize the perceived benefits and minimize the perceived costs associated with performing a behavior. In health behavior research, a number of these expectancy-value models (and variants) have been popular.

One of the more influential models in the health area is the Health Belief Model (HBM), which proposes that the cognitive activities in response to messages pertain to formulating beliefs about health risks and the health-protective qualities of certain behaviors. To preserve one's health, modification of behavior may take place.[21,22] The HBM assumes that self-destructive behavior, such as smoking, occurs when individuals (1) do not have adequate information about the health risks posed by their behavior, (2) fail to understand their vulnerability to the consequences of their behavior, (3) fail to understand that avoiding the behavior will reduce health risks, or (4) encounter other informational barriers to behavior change. To promote smoking cessation, for example, the HBM, and expectancy-value models in general, suggest strengthening the individual's perception of the risk and severity of the consequences of smoking and of their physical vulnerability to those consequences. At the same time, a persuasive message should try to reduce the perceived benefits of continued smoking as well as the barriers to changing the behavior, perhaps by increasing necessary skills to quit or perceived self-efficacy that quitting is possible and beneficial.

Like the HBM, the theory of reasoned action (TRA)[23,24] and the theory of planned behavior (TPB)[25] both argue that health behavior choices are reasoned and are based on the information available to the individual who is making the behavioral choice. According to these theories, an individual's intention to act is the single best predictor of behavior (TRA), as long as the individual perceives that he or she has volitional control over the behavior (TPB). This intention to act is, in turn, influenced by one or both of two components: (1) attitudes toward performing the behavior, or one's overall feeling of favorability toward performing the behavior, and/or (2) subjective norms, or the degree to which salient important referents are perceived to endorse (or not endorse) the behavior. Attitudes and norms are, in turn, influenced by underlying beliefs driving those attitudes and norms. For different groups of people, different consequences of performing the behavior may be salient and may be held with different belief strengths. As a result, the consequences driving the behavior for one group (e.g., teens) may differ considerably for another group (e.g., adults). Similarly, health communications may increase the salience and the strength of a belief

that drives behavior. An assessment of the American Legacy Foundation's "truth" campaign found that exposure to anti-industry messaging resulted in negative beliefs about industry practices and, accordingly, negative attitudes toward the tobacco industry. The increase in negative attitudes is linked to decreased progression toward intention to smoke and actual smoking behavior.[15]

Fishbein and colleagues[26,27] extended the TRA and TPB by bringing together a number of different theoretical perspectives. They proposed the Integrative Model of Behavior (Integrative Model), arguing that there are only a finite number of determinants that lead to behavior change. The Integrative Model incorporates the construct of self-efficacy, originally proposed by Bandura in his social cognitive theory.[28] Self-efficacy is the feeling of confidence one has in performing a recommended action. In the Integrative Model, the role of environmental factors, as well as skills and abilities of the individual to perform the behavior, are described as influencing the extent to which an individual's intentions to perform the behavior will predict behavior. Intentions, in turn, are determined by attitudes toward the behavior, the perceived norms concerning the behavior, and self-efficacy in performing the behavior. Attitudes, perceived norms, and self-efficacy are functions of underlying beliefs associated with each of them. According to the Integrative Model, media messages should primarily target those beliefs that are associated strongly with behavioral intentions and determined by formative research. For example, an adolescent's perceived norms toward smoking (e.g., whether friends or family think he or she should smoke) may influence the intention to smoke, in which case campaign messages may aim to change those norms. On the other hand, a smoker could have intentions to quit smoking but may lack the self-efficacy that would enable such behavior. Campaigns, in turn, may target self-efficacy.

Another theory that focuses on the individual's perceptions of health consequences and self-efficacy is the protection motivation theory.[22] This model emphasizes that whether one will change a health-damaging behavior such as smoking depends on the perceived severity of a threatened event (e.g., heart disease, lung cancer, emphysema), the perceived probability of the event, the efficacy of the recommended preventive behavior (the perceived response efficacy), and the perceived self-efficacy (i.e., the level of confidence in one's ability to undertake the recommended preventive behavior). A 2006 study[29] based on this theory found that adolescents' intention to smoke decreased more as a result of advertising that showed the disease and suffering of tobacco users than by anti-industry advertising. The key finding was that evoking empathy for those suffering from health problems caused by tobacco was an effective driver of reduced intention to smoke.[29]

Programs and strategies that encourage and support people to quit or not to initiate smoking, including antitobacco advertising, reflect many aspects of these expectancy-value models of health behavior change. For example, advertising may seek to highlight the increased risks posed by smoking, to stress the severity of conditions caused by tobacco or the personal probability of being affected, to communicate the health and other benefits of quitting smoking, to alert smokers of smoking cessation services that may help them quit, or to build smokers' confidence to make quit attempts and keep trying to quit (trial behavior). According to the Integrative Model, provision of new message information can increase the salience of a new belief underlying attitudes, thereby affecting attitude change. Also, if intentions are determined by subjective

norms, then making salient key referents would be useful.

Another important theoretical framework for understanding individual behavior change, particularly regarding tobacco, is the Transtheoretical Model (TTM).[30] As the name suggests, this model is the result of a review and synthesis of leading behavior change theories and focuses on the idea that behavior change is a process that occurs in stages. The concept of stages of change (individuals need different information and face different barriers while in different stages) is extremely popular and is often used for matching participants to intervention components. The TTM was developed with a focus on understanding smoking cessation patterns and has been used often in this context. A 2002 review of 148 studies revealed that the evidence for use of the TTM with smoking was growing but not conclusive.[31]

Social Cognitive Theory

Social cognitive theory[28] provides a dynamic model of learning in which people are viewed as engaging in proactive and self-regulating processes that enable them to adapt and change to their environment. Human behavior is viewed as a dynamic interplay among personal factors, behavioral factors, and environmental influences. One of the core methods for acquiring knowledge and skills, according to this theory, is by learning through observation and imitation of others. Learning is facilitated when individuals observe the behavior of others who are similar along key dimensions. Particularly relevant to the area of health communications is the role of *symbolic modeling,* in which the medium of observation is through mass media (such as television or movies) rather than face-to-face observation (such as parent and child). In fact, symbolic modeling has potential for magnified impact because of the number of people that it can reach in diverse regions and because the attributes of certain role models (e.g., celebrities) may render them especially persuasive.

While social cognitive theory accords an influential role for mass media, audiences are conceived of as complex and active agents in the person-media relationship. People will not automatically mimic whatever is modeled. The prevalence, salience, accessibility, and functional value of modeled behavior are predicted to influence the audience's attention. Model characteristics such as prestige or similarity to the audience member may also attract attention. The audience members may then retain knowledge and thoughts about the modeled behavior, or they may forget them. They may then go on to carry out modeled behaviors, or they may not. Motivational processes may play a role in reinforcing or averting the behavior. If the person receives material, social, or self-evaluative incentives for the behavior, or observes others benefiting from the behavior, he or she may be motivated to engage in similar conduct in the future. If negative consequences are observed to occur in response to modeled behaviors, the observer will be reluctant to follow suit. Learning is also a function of whether the individual feels capable of performing a behavior (self-efficacy).

A review of how social cognitive theory may help explain the impact of depiction of smoking in movies on adolescent experimentation is discussed in chapter 10.

Dual Process Models of Attitude and Persuasion

Increasingly, researchers have recognized that in making health choices, consumers do not always conduct a systematic review of relevant information. Psychological models of persuasion called *dual process models* argue that one route to persuasion is effortful, systematic, and focused on

persuasive arguments, but that a different route to persuasion is not effortful, and instead, is based on heuristics, peripheral cues, and experiential or affective processing. Early dual process models, and the ones most influential in psychology, marketing, and health communications during the past 20 years, include the Elaboration Likelihood Model (ELM) and the Heuristic-Systematic Model (HSM).[32,33] The ELM suggests that attitude change can occur via a central route (based on purposeful information-processing activity aimed at uncovering the central merits of an issue) or via a peripheral route (based on low-effort attitude change). The route used depends on level of motivation and ability to assess the central merits of a message. Thus, when motivation or ability to process a message is low, attitudes are more likely to be changed by relatively simple associations, such as classical conditioning or heuristics retrieved from memory. Attitudes formed by this route are hypothesized to be less enduring and less likely to lead to long-term behavior change. As shown by Petty and Cacioppo,[33] people exposed under low-motivation conditions agree with a message more if there are more arguments, whereas people under high-motivation conditions agree with a message more if the arguments are more compelling. Thus, at the low-motivation end of the elaboration continuum, it is the quantity and/or type of cues that affects the degree of persuasion; at the high motivation end of the continuum, it is the quality of the message arguments and the relevance of other cues to the message that affect persuasion.

Other dual process models focus more explicitly on affective, sensory cues (such as visual imagery) and/or experiential processes as the alternative to the systematic, effortful route to persuasion. These cues are relevant in the present context, as tobacco promotions often use symbolic imagery that could be highly persuasive under low-motivation conditions (chapters 3 and 4).

For example, in observing how individuals respond to advertising messages and other information in the environment, Hibbard and Peters[34] describe two modes of thinking that can determine judgments and decision making: one is analytic and logical; the other is emotional and intuitive. The former, termed *rational,* is a conscious mode that takes a relatively longer time to occur and, the authors argue, has developed rather late in human evolutionary development. The latter mode, termed *experiential,* is less than conscious, occurs rapidly, and is hardwired because of its survival value. The role of emotion, mood, and other affective and experiential responses in decision making has increased in research importance over the past decade. Emotional states guide both decisions and perception of information[35] and can function as information in and of themselves (i.e., if it feels good, it is probably good for me; if it feels bad, I should stay away).

Using multiple pathways to changing attitudes was also emphasized in research in social and consumer psychology[36] published in 2006. While the traditional view of attitudes is that an attitude is an enduring evaluative summary that guides behavioral choices (an assumption underlying many expectancy-value models), later evidence suggests that attitudes are less stable across time, situations, and environmental contexts than previously thought.[37] The enduring nature of attitudes may depend on whether they have been formed as a result of "central" or peripheral reasoning. Attitudes may be constructed on the spot on the basis of the information available in the context in which the attitude is reported.[37] Furthermore, researchers have argued that individuals may have two types of attitudes: an explicit attitude based on reported cognitions and an implicit attitude based on more automatic stored affective responses.[38–40] An individual may also experience ambivalent attitudes,[41] such that, for example, a teenager's former (implicit)

attitude toward smoking may have been positive, but with increasing antismoking messages received, two types of attitudes (one positive implicit attitude and one negative explicit attitude) may form. Over time, if the positive (but not the negative) associations with smoking are rejected, the formerly positive implicit attitude may be replaced with a negative implicit attitude.

Media, Message Structure, and Information Processing

Studies in the psychology of communication may draw on physiological and biological processes that mediate audience reactions to mass media communications.[42–45] According to this approach, people's reactions to media messages, a form of environmental stimuli, are subject to both their capacity and their motivation to process the information. For example, the Limited Capacity Model of Motivated Mediated Message Processing argues that people have a limited capacity to process information and allocate cognitive resources selectively to encode, store, and retrieve information.[45] Drawing on an evolutionary approach, these studies suggest that the mechanisms for encoding, storage, and retrieval of information depend on motivation for either survival or avoiding danger. In fact, the relationship between mass mediated messages and underlying cognitive and motivational systems is dynamic and interactive and is subject to the nature of the medium and the structure of the message. This means that some media and certain messages elicit different responses in different individuals, phenomena that must be taken into account in designing persuasive communications. Messages can be designed so they are novel (sensation seeking),[46] indicate importance, or are motivationally salient, and to reassure the audience in its motivation for survival or to avoid danger. These theories have been applied to examine campaign effects on stemming illicit drug use and smoking.

Media-Message Effects, Information Processing, and Behavior Change

The effects of mass media on health outcomes such as tobacco use are influenced by both the channels in which the media messages are placed, as well as the construction of the message, including its format and content. The theories discussed so far address (1) the routes to behavior change by identifying determinants of behavioral intentions or behaviors by focusing on beliefs, affect, and/or experiential processes that need to be targeted to promote change and (2) information processing theories that examine the psychological processes that influence exposure, attention, encoding, and acceptance of messages.[47] Work on message-effects theories adds to the understanding of the impact of mass mediated messages on health outcomes by addressing more explicitly executional elements of a message. Message-effects theories explain which features of the messages are likely to lead to certain health outcomes, and in combination with information processing and behavior change theories, connect media messages with behavioral outcomes.[47] Message-effects theories provide a way to understand how mass media messages could break through the clutter of the information environment to reach and influence the target audience.[48]

Researchers have identified numerous message features and executional approaches that may be important in advertising and persuasive communications: emotional appeals,[49] tailoring,[50] narratives,[51] frames,[52] and exemplars,[53] to name just a few. Like dual process models,[33] these characteristics of messages are postulated to work through the motivation and ability of the intended audience; affect their exposure, attention, and recall; and finally, determine if the audience member has accepted the message or not. As Viswanath and Emmons[48] point out, these individual-level cognitive and

affective factors that mediate message effects with behavior change are also influenced by social determinants such as culture, class, race, and ethnicity.

Media Messages and Neural Marketing

An emerging practice of using brain imaging through functional magnetic resonance imaging or positron emission tomography scanning to understand people's responses to external stimuli such as advertising messages has begun to attract the attention of advertisers and marketers, bioethicists, and consumer advocates. This practice, sometimes called *neural marketing,* draws from the latest developments in cognitive neuroscience[54] and the growing availability of neural imaging facilities. Neural marketing claims that a person's response to favorite commercial brands or images and responses to stimuli such as advertising messages can be mapped through brain imaging.[55]

Advertisers and marketers are reported to have spent an estimated $6.8 billion in 2002 on such market research tools as focus groups and surveys to understand audience perceptions of and reactions to product promotions.[55] Brain imaging technology offers yet another tool, with a scientific imprimatur, to understand how audiences react to marketing communications. Despite debate over its utility in communications practice, proponents of this approach argue that imaging of neural activity in the brain reveals unconscious preferences or underlying predilections of the audience when exposed to stimuli.[56]

For example, when subjects in an experiment viewed their favorite brands, the parts of the brain associated with rewards were activated compared with portions of the brain that deal with reasoning.[57] In other words, seeing favorite brands may reduce more-conscious reasoning, a possible effect of exposure to years of advertising. Schaefer and Rotte[58] speculate that such unconscious associations could potentially influence behavior by biasing product choice based on brands.

The reliance on neurocognitive science is a response, in part, to the dual process theories discussed earlier. For example, research has shown that attitude change as a result of messages that engender central or systematic processing is effective when consumers' attitudes are strong and enduring, relative to messages that rely on more superficial or peripheral cues.[32,33] Work is now under way to understand if these different routes of persuasion could lead to neural activities in different parts of the brain. In addition to understanding persuasion to promote product use, work in neurocognitive science may also be helpful in understanding how different messages and images could lead to more systematic processing by observing neural activities in the brain. The field of neural marketing is just beginning to attract attention by scholars and practitioners alike and bears watching.

Mass Media and Addiction

While the literature suggests that media have a strong role to play in tobacco prevention, the role of media in cessation is also critical (chapters 11 and 12). Highly arousing media messages could result in central processing and lead to quitting smoking as Biener and colleagues report in their study.[59] More research is needed to determine how the impact of media on tobacco prevention and cessation may vary among persons at different levels of tobacco dependence.

Mass Media Messages and Interpersonal Communication

Most media-effects theories focus on psychological or intra-individual factors associated with message or campaign

effectiveness. In contrast, diffusion of innovations theory[60] has also incorporated interpersonal and sociological factors such as cultural compatibility, interpersonal persuasion, and social networks. Few researchers have attempted to combine studies of media influence with studies of interpersonal influence on behavior. The lack of research on this topic stems from a long-standing divide in the field of communications between interpersonal communication scholars, typically located in departments of speech communication, and those interested in media effects, who are typically trained in many other disciplines (e.g., psychology, sociology, political science) but housed in departments of communications and/or journalism.[61,62] Yet, mass media and campaign influences do not happen in a vacuum; they are filtered by peer networks, peer groups, and cultural attitudes.

The one model developed from communication studies that combined media and peer influence is the two-step flow hypothesis. This hypothesis of communication effects proposes that the media influence opinion leaders, and these leaders in turn influence others in their community or social networks.[63,64] To be effective, the media need influence only leaders, who are expected to spread the media's messages to other members of the community. Research on the two-step flow hypothesis has been scant in the past few decades. This is partly because few scholars study both mass and interpersonal sources of influence on behavior and partly because sophisticated tools for the study of social network analysis have been slow in developing. There is some evidence to support the two-step flow model,[65] and researchers have proposed variants and extensions that broaden its theoretical contribution.[66]

While this review of individual-level processes is necessarily brief and cannot capture all of the numerous theories of health cognition, affect, and behavior, it shows the range of psychological processes that have been studied to understand the effects of mass media on an individual's health choices. They also provide an idea on how to understand the effects of media on tobacco control and tobacco promotion. The next section discusses the structure of communication organizations and how organizational processes and the occupational practices of professional communicators influence both the production of media products and the effects of media on different target audiences.

Organization-Level Analyses and Tobacco-Related Communications

Ettema and Whitney[67] argue for an institutional conception of mass media in contrast to earlier approaches that focused on direct transfer of messages between the sender and the receiver. In this conception, the media, including the people who work within them, are a part of the larger industrial and cultural systems wherein audiences are one element of many agencies, groups, companies, and professionals who interact with each other.

For example, a market research agency may collect data on the readership of a local newspaper, including the consumer products that readers use. Tobacco products could be an example: data may be gathered on use patterns or the potential for tobacco use among newspaper readers, and those data may, in turn, be shared with advertisers (tobacco companies) and advertising agencies for the tobacco companies. Agencies may then construct and disseminate messages promoting tobacco use targeted at readers of the newspaper.

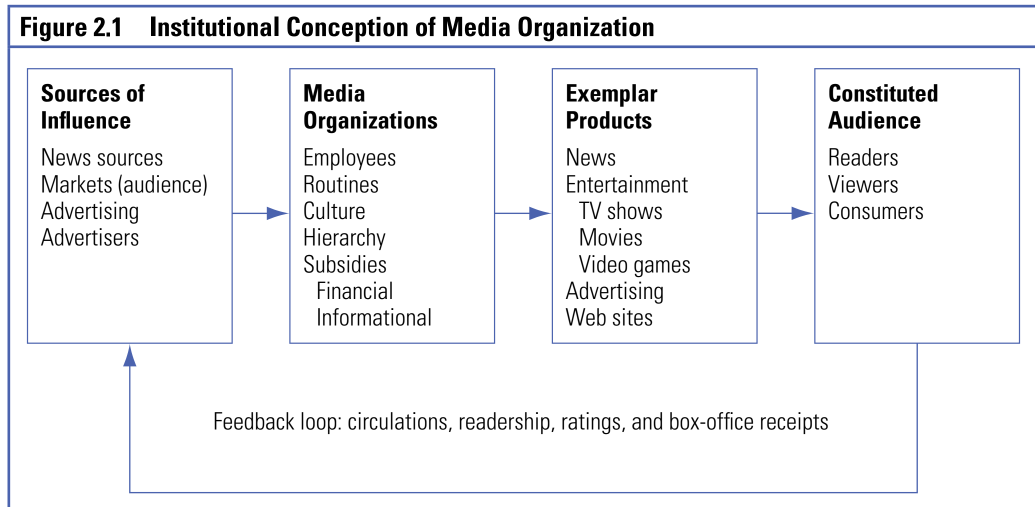
In this conception, the clients (advertisers), the advertising agency, and the media

"constitute" the audience in that they have economic or some other meaning to the industry, a process that Ettema and Whitney[67] term *audience-making*. In this process, audience tastes, interests, user styles, and preferences are tracked, measured, packaged, and used to offer services and products. In short, the media production process occurs within the context of complex organizations set in larger social, cultural, and economic milieus. The advantage of such a conception of media organizations is that the focus goes beyond the exchange of messages between the sender and the receiver to a view of components of a broader ecology of media: producers, advertisers, agencies, and sources of news, among others (figure 2.1). Such a conception may also influence how an audience is viewed.[67] The tobacco companies may visualize the audience for its advertising and promotions as "consumers," whereas tobacco control advocates may see the audience in this case as "victims." While the audience may try to influence the medium through subscription or viewership, there is, in general, asymmetry in power between the medium and audience, given the complex media ecology. More specifically, an action such as the cancellation of a subscription by an individual audience member is unlikely to have an influence on a medium that is in complex relationship with other media organizations such as public relations and advertising agencies.

The structure and organization of the media industry, therefore, are critical to understanding the functions of mass media and their products. The products that emanate from mass media—news, advertising, and entertainment—are very much influenced by how the media industry is structured, the competing sources of influence, and the nature of subsidy that sustains media organizations. Mass media institutions are bureaucracies in which organizational functions, hierarchy, roles, and culture are well defined (figure 2.1).

Given this description, even though there are differences among media industries on how message and media production are organized, there are several commonalities that characterize the contemporary media industry. These may be discussed along the following lines: (1) specialization of structure, functions, and content; (2) a methodical approach to occupational practices; (3) a demand for information and a reliance on information subsidies; and (4) reliance on social science.

Figure 2.1 Institutional Conception of Media Organization



Specialization of Structure, Function, and Content

As proposed earlier, media organizations are typical of many complex organizations. Even though the nature of a product—advertisement, news story, movie, television show, or music—may involve creativity and symbol manipulation, media institutions are structured and organized to generate their products efficiently, predictably, and routinely. The degree of specialization depends on the size of the organization, but there are similarities in organizational structures of the media.

Newspapers, for example, are organized along editorial and business lines with separation of functions and reporting authority. The news side, for example, is usually protected from the advertising side to foster a sense of independence and objectivity, though there are always tensions between the two.[68–70]

Television separates its entertainment, news, and business functions. Strategic communications agencies such as public relations and advertising have departments that oversee client services, media planning, and message development.

This separation of functions and structure does not mean that there are not occasional breaches or, in some cases, greater interaction among different departments. The degree of separation varies by medium, with the editorial side of a news medium enjoying greater autonomy compared with departments in a typical advertising or public relations agency.

Systematic Approach to Occupational Practices

The media production process is systematic and organized even though it may appear random to an untrained eye. The occupational practices of professional communicators are structured to generate the product efficiently and expeditiously.

Journalism, for example, is divided along two broad lines: editorial and reporting. The editorial side usually oversees the selection, presentation, and placement of news stories. The editorial side may also present different positions on a subject to reflect broader opinion among significant publics. Thus, the editorial/opinion side of the newspaper may present contrasting positions on regulating secondhand smoke in public places and may even take a formal position on supporting or opposing such regulations.

Reporters follow a well-designed set of informal rules, occupational practices, and news values in selecting and reporting stories. For example, to structure the world to make news gathering efficient, media organizations often organize news gathering into "beats."[71,72] Beats may be organized along geopolitical lines such as the activities of various governmental bodies; along topics or subjects such as business, health, entertainment, or the environment; or along a combination of both geopolitical and topical lines such as Wall Street. Reporters and editors also follow a set of well-defined news values[73] in selecting, developing, and writing stories. News sources—human contacts such as legislators, policymakers, spokespersons, public relations personnel, and activists, among others—often influence reporters and editors in this enterprise.

Tobacco companies and tobacco control advocates, respectively, have been able to use this knowledge to aggressively promote tobacco use or frame news to communicate the risk associated with tobacco use (chapters 4 and 9).

A similar systematic approach is also practiced in other media industries, such as public relations and advertising, as has

been well investigated in the case of tobacco (see chapters 4 and 6).

A Demand for Information and Reliance on Information Subsidies

It is trite but true that professional communicators are in the business of information. They gather, process, and disseminate information to different audiences. Public relations practitioners and spokespeople for agencies gather information from their "clients" either within their organization or outside the organization, massage it to make it suitable for presentation in the form of either a news release or a story idea, and pitch it to reporters or other stakeholders (see detailed discussion of the tobacco industry's public relations efforts in chapter 6). Advertisers draw extensively on market and consumer research to produce messages. Journalists rely on their sources, such as press spokespersons, the person on the street, or anonymous sources, or on nonhuman sources such as press releases,[73] databases, or Web sites to develop their stories. Such mutual reliance spawns a symbiotic relationship, particularly between the press and public relations, despite tensions between the two. The "information subsidy" provided by the sources can influence whether a story will be covered and, potentially, how it will be covered.[71,74] While reporters may rely on sources, particularly for story ideas and in developing stories, they also have some autonomy in selecting the sources and framing the stories.[75,76]

Social Science and Professional Communications

The evolution of the social sciences, particularly in the area of measurement, has had considerable influence on the development of professional communications.[8] Sophisticated audience measurement techniques, such as Nielsen's people's meters, allow for segmentation of the audience and specialization of media content that can be more effectively used by advertisers to sell their wares and by programmers to offer programs.[77] Market research has enabled advertisers to identify, assess, target, and even create markets for various products. Audience and media-effects research has enabled strategic communicators to promote causes, ideas, and services for both public good and ill. Reporters rely on such strategies as "objectivity" to distance themselves, and they communicate that distance to the audience. While objectivity is not a strict social science technique, the idea of presenting different sides to verify a story uses social science principles to achieve objectivity. Public opinion data, for example, are routinely used in news stories.

Organization-Level Analyses: Summary

Although the early history of media studies, particularly the sociology of journalism, focused on studying communications with a narrow emphasis on senders and receivers, some later research took a more institutional approach in examining the media industry within a larger political, economic, and cultural context.[67] Such an institutional approach does not ignore or deny lessons learned from earlier approaches but broadens our understanding of how media work. This approach provides a useful framework for

- Examining not only the contemporary structure of media industries but also tracking their future trajectory as media industries evolve.
- Providing a wider lens within which to examine media effects without limiting them to one genre or medium. For example, when tobacco advertisements were banned from U.S. television and radio in 1971, the tobacco industry successfully shifted its tactics to billboards, product placements,

and sponsorship. Billboards seen on sports telecasts, for example, allowed the industry to overcome the ban and still display protobacco messages and images in broadcast media.

- Exhibiting more clearly the asymmetry in power between the audience and the media industry.
- Identifying clearly the nexus of interdependence as well as conflict among different segments of the industry, providing a more dynamic view of that relationship.
- Providing a means to follow the trajectory of the evolving media industry and business models that shape the creation of demand and markets for products and behaviors.

Societal-Level Theories in Tobacco-Related Communications

Although the individual has been the most visible and dominant unit of analysis in media studies, social and societal-level concerns over the role of the media have been a subject of abiding interest among scholars. As Hardt and Carey[78] write, the sociological conceptions of mass communications emerged out of scholars' need to explain emerging social changes and growing inequalities. Social theorists including Marx, Weber, Robert Park, and others, Hardt and Carey elaborate, focused attention on the "social production of consciousness"—that is, communications or agencies that produced the consciousness. Mass communication was the essence of modern social organization and integration, Hardt and Carey opine, as the circulation and exchange of ideas were made possible by modern means of communications—books, pamphlets, and newspapers. Subsequently, the "Chicago school" of sociology, represented primarily in the work of Robert Park and his students, examined the role of community and immigrant presses in social and community integration.

This early commitment to social theories of communications became less visible because a concern stemming from resistance to World War II propaganda shifted attention to the study of attitude formation and change. This research was pursued more vigorously at Yale University after World War II.

Work at the societal level of analysis, however, was continued by such scholars as Janowitz.[79] Two developments in the 1960s and 1970s are germane to tracking the evolution of societal-level analysis and to tobacco control: (1) the evolution of the structural model with its focus on the community press, social conflict, and social change and (2) the cognitive revolution.

Social Conflict, Social Change, and the Media

The 1970s and 1980s saw the emergence of a vigorous body of work that examined (1) the role of the media as agents of social control[60,80–82] and agents of social change[83] and (2) the media's role in social movements and social conflicts.[84,85] This body of work offered considerable insight into how different institutions in the larger society interact with the mass media industry, leading to certain kinds of media content, and hence, media effects.

While individual programs of research and scholars working at this level may differ in details, in general a structural approach proposes the following:[81]

- Mass media, more often than not, are responsive to the more powerful forces in the system; that is, in general, the interests of the elite may take precedence over the interests of the less powerful. In fact, media and other powerful groups are interdependent. For example, news media may rely on advertising as a

source of revenue and are organized to meet those interests. The division of a newspaper into sections such as metro, sports, and business is a way to provide advertisers with segmented audience subgroups who have common interests, while maintaining and satisfying the interests of the readers.

- Media messages reinforce dominant values and support existing social arrangements, that is, social control. The social norm regarding smoking is a reflection of this principle in practice. Smoking has evolved from a widely accepted and even highly encouraged phenomenon to the norm that it is unacceptable to smoke given its deleterious consequences for smokers and those exposed to secondhand smoke.
- Though they are highly responsive to the common power arrangements, the media are neither "lapdogs" nor completely independent "attack dogs." They play more of a "guard dog" function wherein they may protect the system though punish individual actors who abuse or threaten it.[86]
- Media may also advance the interests of social movements such as women's rights or civil rights,[82] challenging the status quo under the right conditions. The success of the tobacco control movement that led to its evolution from margins to mainstream is a good exemplar of how media can amplify the voices of those who challenge the status quo under the right conditions,[87] often using a "media advocacy" approach.[88]

The tobacco control movement has used media advocacy quite effectively in a number of situations. One effect was seen when the impact of the American Stop Smoking Intervention Study (ASSIST) project was assessed. Major goals of ASSIST were to use media advocacy techniques to increase media coverage of tobacco control activities and encourage comprehensive tobacco control as well as increase public discussion and debate regarding tobacco control. Program affiliates interacted with newspaper editorial boards to encourage pro-health messages; they developed relationships with community members and key reporters, used paid advertising and unpaid public service announcements, and relied on their knowledge of media outlets to increase the presence of pro-health messages. When researchers assessed the impact of the ASSIST program, they found that compared with states without the program, the states with the ASSIST program had significantly more local newspaper articles that supported tobacco control as well as pro-health letters to the editor.[89]

An effective and inexpensive media advocacy strategy used in Australia was to issue media releases about newsworthy research regarding debates on tobacco control so that newspapers would increase tobacco control coverage. In one metropolitan area, six media releases were linked to 58 of 283 (20.5%) news reports on tobacco control during the study period.[90]

Media Effects at the Societal Level

Some have argued that the 1960s also saw a shift in communications research, from focusing on media effects on attitude change or reinforcement to a focus on cognitions: knowledge, public opinion, and social reality. In communications research, this has been called the cognitive revolution. Several major hypotheses predicting media effects were formalized during this era, including the knowledge-gap hypothesis,[91] the agenda-setting hypothesis,[92] the spiral of silence,[93] and the cultivation hypothesis.[94]

The knowledge-gap hypothesis proposes that the flow of information on a topic will be taken advantage of more quickly by people from higher socioeconomic status

(SES) compared with people from lower SES, thereby widening the knowledge gaps between them.[91,95] For example, despite four decades of sustained attention in media, health, and policy circles, those with higher education and income were much more likely to know that tobacco use could lead to lung cancer compared to those with less education and lower income.[96] The agenda-setting hypothesis posits that the news media, through selective coverage and amplification of certain topics, govern the importance the public assigns to those topics as opposed to issues that do not receive any, or minimal, coverage. In fact, some have suggested that media effects exceed setting priorities to include shaping audience perceptions though "framing,"[75,97–99] thereby communicating the impression that one view is more acceptable than others. Over time, this may lead to silencing alternative viewpoints—a spiral of silence—even though a majority may share them.[93,100]

An example of agenda setting can be found in terms of framing the debate over tobacco. A content analysis of newspaper coverage during the U.S. tobacco settlement deliberations in 1997–98 demonstrated that tobacco was portrayed as an issue of adolescent smoking rather than as a deadly behavior and public health hazard. Similarly, revenue generation and advertising restrictions, rather than the health consequences of smoking, were major themes of discussion. The key conclusion from the study was that public health professionals must take better advantage of these opportunities to frame the discussion in a manner favorable to public health.[101] Similarly, an analysis of U.S. newspaper articles that focused on adolescents suggests that the articles framed the concept that tobacco issues should be resolved via individual-level education as opposed to structural or policy changes.[102]

The cultivation hypothesis suggests that persistent and sustained exposure to media content cultivates a stilted worldview that is congruent with the media content to which the audience is exposed.[94,103] Exposure to smoking in movies and other media, for example, can lead viewers to a perception that smoking is common and normative even if this is not so in the real world.[104] In fact, the role of entertainment media in shaping popular conceptions of social mores and lifestyles—including knowledge, beliefs, and behaviors in health—has been a subject of intense interest and debate throughout the history of communications research as discussed earlier in this chapter. The influence of entertainment media, particularly movies, on tobacco use is well documented (see chapter 10). The power of the narratives stems from a process in which the viewer becomes immersed in, or "transported" by, the story and, consequently, is less likely to argue against the message. The narratives provide role models for behaviors, create attitudes and beliefs consistent with the message, and generate empathy.[51] Not surprisingly, movies have been found to have a powerful influence on adolescent smoking (see chapter 10).

Evidence (and the conditions under which the hypotheses hold true) varies, but macrolevel theories of media effects have been successful in spawning systematic programs of research and shifting attention to effects of media on large populations, social classes, social organizations, social movements, and institutions.

Communication Inequalities

U.S. smoking rates have steadily declined since the publication of Surgeon General Luther Terry's 1964 report on the harmful effects of smoking, aided by scientists, grass-roots social movements advocating policies to stem tobacco use, and the reactions and response of policymakers. Yet the decline in smoking has not been uniform across social groups. Research has extensively documented that smoking is

higher among those with less education, low income, or blue-collar jobs; among those without jobs; and among people of specific ethnic and racial backgrounds.[105] Morbidity and mortality caused by smoking also disproportionately affect lower SES groups. These disparities in smoking prevalence and tobacco-attributable disease are similar to the disproportionate burden faced by lower SES and certain ethnic and racial minority groups for chronic diseases such as cancer, cardiovascular disease, diabetes, high blood pressure, and asthma.

Reasons for these disparities are many: lack of access to health services or a usual source of care, lack of insurance, living in poor neighborhoods with limited amenities and an unhealthy environment, and racism and racist social policies, among others.[106–109]

In addition, studies have suggested that inequalities in communications contribute to health disparities. *Communications inequality* may be defined as differences among social classes in the generation, manipulation, and distribution of information at the group level and differences in access to and ability to take advantage of information at the individual level.[1,96]

Disparities in tobacco-use prevalence and disease outcomes can partially be explained by communication inequalities. Tobacco companies have been powerful social actors with resources and institutional structures to generate and distribute information favorable to their point of view, as is documented in several chapters in this monograph. The sophisticated public relations and strategic communication operations, either within the company or through outside agencies, have facilitated the dissemination of information counter to tobacco control. Scientists, think tanks, and editorialists sponsored by the tobacco industry have worked strenuously to cast doubts on the links between smoking and disease and on the health effects of secondhand smoke and have argued that tobacco control poses a threat to the personal liberty of smokers. Analysis of internal tobacco company documents demonstrates the extent to which tobacco companies were able to influence journalists' reports regarding scientific findings on tobacco and undermine the credibility of the Environmental Protection Agency.[110,111] The federal government, supported by tobacco control organizations and scientists, has attempted (with some success) to counter the tobacco industry's efforts.

Inequalities in communications have also been demonstrated at the individual level. Studies have documented knowledge gaps between social groups on the harmful effects of smoking[96,112] and the effects of secondhand smoke.[113] Knowledge gaps have also been found in framing tobacco control policies as curbs on individual liberties. Persistent advocacy in the media through news and advertising casting doubts on the evidence of injurious effects of smoking may also deter information processing among those from lower SES groups.

Attempts to explain disparities in outcomes caused by tobacco have proceeded slowly. The contribution of communication inequalities to these disparities is ripe for further research.

Societal-Level Theories: Summary

The macrolevel approach in media studies has provided insights into how the media act and interact with other major social institutions, thus shifting the attention of scholars and policymakers to the population level of the impact of mass media. This shift from the individual to society has laid bare the asymmetric power structure between the audience and the media, the difficulties individuals may face in bringing about change in media practices, and the conditions and strategies with which the media can promote social change against established

interests. With tobacco being consumed all over the world, this approach is particularly useful to tobacco control proponents, given the global scale, reach, and organization of the tobacco industry and the global burden resulting from tobacco use.

Summary

The study of media in tobacco use can be seen not only as a multilevel process but as an evolutionary one as well, which in fact parallels the path of tobacco control itself over time. In the early days surrounding the release of the 1964 Surgeon General's report on smoking and health, tobacco control was often seen as an issue of educating individuals, leading to media interventions such as antismoking television advertising under the Federal Communications Commission's Fairness Doctrine in the 1960s.[114,115] Over time, both tobacco control and its concomitant media efforts evolved to a much broader social context of community-level interventions such as the Community Intervention Trial for Smoking Cessation. Eventually, these efforts extended to broader policy interventions, such as today's clean indoor air laws, tobacco taxes, and industry agreements such as the 1998 Master Settlement Agreement, and included global efforts such as the World Health Organization's Framework Convention on Tobacco Control.[116–118] The evolution across individual, organizational, and societal levels of media research reflects how we have come to view not only tobacco control efforts but also larger issues of public health and social change.

Today, we realize that the media, tobacco use, and tobacco control efforts all interact at multiple levels of a system, each of which may affect stakeholders ranging from individuals to society itself. In the process, fields ranging from public health to cognitive psychology have become essential parts in a growing transdisciplinary science of smoking and health, supported by research frameworks such as the ones outlined here. We have already seen the fruits of many of these efforts in the form of reducing per capita cigarette consumption rates by approximately one-half in the United States since their peak in the 1960s[119] along with more fundamental changes in social attitudes toward tobacco use. These changes give hope that today's media, whose history is intertwined with the widespread emergence of tobacco use over the past century, can continue to serve as a critical tool in addressing what remains as the nation's leading cause of preventable death.

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