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Emotion in the Law and the Lab: The Case of Graphic Cigarette Warnings

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Abstract

The decision in *RJ Reynolds vs. FDA* (2012) to invalidate FDA's proposed graphic health warnings was based in part on the reasoning that the proposed graphic warnings cued emotional responses and therefore could not be considered "factual." However, this reasoning demonstrated the courts' fundamental misunderstanding of current behavioral-science research. In contrast to the courts' artificial separation of emotions from fact, we synthesize and interpret relevant research in basic decision sciences and describe an evidence-based characterization of how emotions influence consumer decision making through multiple mechanisms. We then explore how behavioral research gets "lost in translation" in the legal process and recommend ways that behavioral scientists can work with attorneys to remedy this problem. In order for science-based tobacco regulation to survive legal challenges from the tobacco industry, courts must have access to and be able to understand and apply the relevant research. Accordingly, behavioral laboratory researchers must consider the courts as an additional audience when designing research and reporting results. Researchers wishing to influence policy should also work closely with public health lawyers to have the greatest impact on the legal system.

Keywords

behavioral research; psychology; judgment and decision making; affect and emotion; legal issues; tobacco regulation; public policy

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Human Subjects Statement

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INTRODUCTION

Cigarette smoking causes about 480,000 deaths in the United States (US) each year.¹ Graphic warning labels on cigarette packaging are thought to reduce this mortality by discouraging smoking initiation and encouraging current smokers to quit. They have been required in at least 77 countries as a result.² In 2009, the US Congress mandated their use on cigarette packages and advertisements and instructed the US Food & Drug Administration (FDA) to implement the requirement. However, the use of graphic warning labels was blocked as the result of a lawsuit brought by the tobacco industry against the FDA. In 2011, a federal district court judge granted the tobacco industry an injunction (barring the FDA from implementing the graphic warnings they chose), ruling that the requirement violated the tobacco companies' First Amendment (free speech) rights. The judge wrote that the government can mandate informational warnings, but "the emotional response [the graphic warning labels] were crafted to induce is ... an objective wholly apart from disseminating purely factual and uncontroversial information."³ The appeals court upheld this ruling the following year, similarly criticizing the FDA.⁴

The courts' reactions are consistent with a common view that emotions are irrational impulses likely to lead us astray, or they are animal instincts to be avoided. This outmoded view, however, is inconsistent with recent behavioral research as described below. We submit that the courts fundamentally misunderstood behavioral science theory and findings about the interdependence of thinking and feeling, and the importance of emotion to risk perception and informed decision making.

This article begins by reviewing the court decisions related to graphic warning labels. It then provides an overview of behavioral research on the role of emotion in decision making and risk perception. Finally, it considers *why* the courts' analysis of this issue does not square with the relevant scientific evidence, and how scientists can work with attorneys to help courts better understand and apply behavioral research in the future.

EMOTION IN THE COURTS: *R.J. REYNOLDS V. FDA*

Following the landmark U.S. Surgeon General's Report that linked smoking to negative health consequences, the US Congress required textual warning labels on cigarette packs in 1965.¹ The text of the warnings has changed somewhat over time while their size and placement have remained similar for more than 50 years. At this point, "there is considerable evidence that the current warnings are given little attention or consideration by viewers."⁵ Indeed, according to the FDA, the current warnings are "'invisible' and fail to convey relevant information in an effective way."⁵ Consistent with this, although consumers have some knowledge of smoking's major health risks,^{6,7} in-depth knowledge of tobacco's health risks is low.⁸ Research, for example, shows that most people can name only 1–2 of the many diseases caused by smoking.⁹ Little knowledge exists about numeric likelihoods of smoking-related disease, and most adults and adolescents overestimate the likelihood that lung cancer is curable.¹⁰ Tobacco users also minimize personal risk and demonstrate an "optimistic bias"^{10–18}, (but see^{19,20}).

As part of the 2009 Family Smoking Prevention and Tobacco Control Act (TCA), Congress developed a new list of 9 textual warnings and instructed the FDA to identify 9 graphic images to pair with the textual warnings. The images selected by the FDA, paired with the associated textual warnings, are shown below in Figure 1. Under the TCA, these graphic warning labels were to cover the top 50% of both the front and back panels of cigarette packs, as well as the top 20% of cigarette advertisements.²¹

As soon as the FDA finalized its rule implementing the TCA's requirements, R.J. Reynolds and other tobacco companies sued the FDA to stop the rule from taking effect. Although they conceded that the government could require warnings that contain "purely factual and uncontroversial information," they contended that the graphic health warnings were designed to "shock, disgust, and frighten" cigarette users – not to inform them.²² Thus, even though mandatory *textual* warnings and disclaimers had repeatedly been upheld by the courts in the past, the industry focused on the argument that *graphic* warnings, because they triggered stronger emotional responses, were more constitutionally suspect.²²

Both the district court and the appeals court reasoned, without any serious discussion or examination of the relevant research, that the terms "emotional" and "factual" were mutually exclusive concepts. (In a split opinion, the appeals court ruled 2-1 in favor of the tobacco companies.) For example, the district court stated that "the images were unquestionably designed to evoke emotion" in its conclusion that the warnings were not intended to relay factual and uncontroversial information.³ Similarly, the appeals court, though acknowledging that none of the images were "patently false," wrote that the images were "not 'purely' factual because ... they are primarily intended to evoke an emotional response, or, at most, shock the viewer into retaining the information in the text warning." It concluded:

These inflammatory images ... are unabashed attempts to evoke emotion (and perhaps embarrassment) and browbeat consumers into quitting ... [and] they do not impart purely factual, accurate, or uncontroversial information to consumers.⁴

The distinction by the courts between "factual" and "emotional" warnings informed both courts' decisions as to the level of scrutiny they would apply to the review of the FDA's proposed warnings labels. If the courts understood the graphic warnings to be "purely factual and uncontroversial," the FDA would receive deference and the warning labels would likely be upheld. But because the courts concluded that the emotional nature of the graphic warnings meant that they were not "purely factual," they imposed a more exacting burden on the FDA to prove that graphic warning labels would be effective in reducing smoking rates, a burden the courts found that the FDA was unable to meet. (This latter part of the courts' analysis also misconstrued the available scientific evidence, but that is beyond the scope of this paper.)²³

The courts' opinions, in our view, were based on an overly simplistic model of human decision making that does not accurately reflect the state of current research in psychology or neuroscience. As explained below, "emotional" is not the opposite of "factual." To the contrary, emotional cues and responses are critical to the effective processing of information.

The immediate impact of this case was to bar the FDA from implementing its proposed graphic health warnings. (The FDA stated in 2012 that it would propose different warning labels in response to the court's decision, but it has not yet done so.) But if applied as a precedent in future cases, the appeals court's understanding (or misunderstanding) of the role of emotion would seriously limit the government's ability to promote public health in numerous other contexts. As Goodman has written, a legal doctrine that is "hostile to the use of complex emotional-cognitive pathways will leave little room for more effective forms of communication."²⁴

THE ROLE OF EMOTION IN RISK PERCEPTION AND DECISION MAKING

Research in psychology and neuroscience tells us that the presence of *emotion* or *affect* (i.e., feelings about an object or piece of information that are specific emotions such as anger, disgust, or happiness or simpler positive or negative valence) is critical to good decision making. Having emotional reactions to decision objects and information is, in fact, considered one of the foundations of human rationality.^{25,26} As is often done in the judgment and decision-making literature, we use the terms *affect* and *emotion* interchangeably throughout this paper.

Humans process information in judgment and choice using two separate but interacting ways of thinking – one more thoughtful and deliberative, the other more affective and experiential.^{27–29} The deliberative mode is conscious, analytical, reason-based, verbal, and relatively slow. Processing in this mode is fundamental to humans' more evolutionarily recent capabilities for abstract thought and it is this mode that policy makers and others tend to consider in attempts to inform choices (e.g., provide more information). The experiential mode, in contrast, produces feelings about objects and information in a relatively effortless and spontaneous manner. These feelings are not random. Instead, affective reactions are often built from past experiences and learning and are, thus, integral parts of the meaning of the object or information. Processing in the experiential mode is intuitive, automatic, and fast; it is based in affect and other heuristic shortcuts that generally produce reasonable judgments and choices while allowing humans to work through the otherwise overwhelming quantity of information and options with which they are faced each day.

A common belief (and one that appears to be shared by the courts) is that use of the deliberative mode underpins our abilities to make good decisions whereas emotion simply leads decision makers astray. It is this latter idea, in particular, with which we take issue. Research demonstrates that both modes of thinking—deliberative and experiential/affective—are important, and good choices are most likely to emerge when the two modes work in concert and decision makers think as well as feel their way through judgments and decisions.^{25–27} In the process, they consider information carefully, but also understand and are motivated by the integral affective meaning that underlies that information.^{30–32}

Affect can enter into judgment and decision-making processes in either of two forms: incidental or integral. In the present paper, we focus on integral affect. Integral affect refers to positive and negative feelings about a target (e.g., an object or idea) that are generally learned from prior experiences with the target and/or thoughts about it. These feelings are

experienced (often as a “faint whisper of emotion”²⁹) when considering that option again. For example, when considering whether to smoke a cigarette, an addicted smoker might experience a mild version of the feeling of relief he has experienced when lighting up in the past. This feeling provides information to the smoker about the possible benefits he will experience from his next cigarette. Incidental affect, on the other hand, refers to positive or negative feelings such as mood states that are not directly related to a target, but can be misattributed to it and influence decision processes nonetheless. For example, after reading a depressing story about a young male who had broken up with his girlfriend and who was under pressure from work and family, the same addicted smoker might feel worse about smoking and perceive it as more risky.³³ Both types of affect have been shown to influence judgment and decision processes across a variety of topics.^{25–39}

The courts appear to think about emotional reactions to graphic warnings as full-blown and “inflammatory” states⁴ rather than as the milder “whisper of emotion” that research indicates will generally ensue over time and with repeated experience with an object^{25,29,39,40}. Whether the reactions are strong or mild, the courts could consider these emotional states as appropriate integral sources of information about the meaning of smoking’s health risks, but instead appear to interpret them as incidental emotion states, unrelated to factual information about the risks of smoking and therefore without value to the smoker as a decision maker.

Graphic warnings, however, influence integral affective reactions to smoking cigarettes among smokers and non-smokers.^{41,42} This integral affect has been shown to inform risk perceptions and decision making in 3 distinct ways. It can serve as a source of information, as a motivator, and as a spotlight.^{31,32,34,35}

Affect as Information

When faced with a complicated judgment or decision, we simplify our task by relying on the heuristics of our experiential minds. One common heuristic, the Affect Heuristic, concerns our reliance on feelings to inform judgments and make choices.²⁶ When using the Affect Heuristic, we rely on emotions to quickly determine whether a target is likely to be good or bad for us, and we may move to approach or avoid it on the basis of this appraisal. Despite the courts’ assertions with respect to the affect produced by graphic warnings, such emotional reactions to danger have been shown critical to the quick perception of and reaction to risk necessary for avoiding health and other hazards across human evolutionary history.^{29,36} This affect acts as an important source of information, informing us whether the water is safe to drink or whether it is dangerous to enter a dark alley. It serves as a simple cue or heuristic enabling people to skirt hazards quickly and efficiently.^{26,29} In addition, modern humans’ ability to derive affective meaning from numbers is what allows numeric information to be used in judgments and choice.^{30,37,38} In health decisions, affect, whether derived from numbers or learned through experience, is often more influential than factual knowledge.³⁸ Without affect to guide us, information does not have meaning and is not used.^{29,30,32,37,38} As an extreme exemplar of this, patients with bilateral damage to the ventromedial prefrontal cortices lose their ability to feel the meaning of information, resulting in poor decision-making skills.²⁵ Providing affective cues that can be used as

information is one important way that graphic warning labels may assist smokers, most of whom want to quit and/or wish they had never started smoking.⁴³

Use of the Affect Heuristic also explains what appears to be an odd trick of the human mind. Specifically, risk and benefit perceptions tend to be negatively correlated (e.g., pesticides tend to be perceived as high risk and low benefit)⁴⁴, and their inverse relation has been linked to the strength of positive or negative affect associated with the product or activity.^{45,46} Good feelings about a product like cigarettes produce judgments of low risk and high benefit; bad feelings do the opposite – they produce judgments of high risk and low benefit. Under this model, affect comes prior to and acts as information in risk and benefit judgments. Theoretically, the reverse direction is possible; greater risk perceptions could lead instead to more negative affect. However, empirical studies favor affect causing risk perceptions rather than the reverse.^{46,47} Thus, we expect smokers who feel good about cigarettes to rate tobacco-related mortality risks as lower than those who feel neutral or bad about cigarettes.⁴⁸ Although other direct and indirect factors contribute to tobacco use, the use of affect to infer risks and benefits has important policy implications in tobacco. Graphic warning labels, for example, are one of the few ways to provide smokers with negative affective cues that could compete with the positive affect elicited by smoking cues and tobacco ads.⁴⁹ Their use allows for a unique opportunity to communicate accurate risk information directly to smokers in a way that is intuitively understood. Perceptions of such risk information appear to be powerful predictors of smoking behavior and may be causally implicated in efforts to start or stop smoking.^{43,50}

Affect as Motivator

Affect has other functions as well. Affect acts to motivate judgments, decisions, behavioral intentions, and behaviors.^{31,32,34,35} Classical theories of emotion include, as the core of an emotion, a readiness to act and the prompting of plans.⁵¹ For example, anger produces a readiness to strike out whereas fear provokes thoughts of fleeing and protecting oneself. Even with more mild affective reactions of good and bad, a similar phenomenon emerges. Stimuli classified as good elicit a tendency to approach, whereas those classified as bad elicit avoidance tendencies.⁵² Without these affective reactions, we would be stuck midstream, without motivations to move in one direction or another. In health research, worry (a negative affective reaction) appears to motivate specific behavioral change, such as mammography screening.⁵³ Worry about breast cancer, for example, predicts mammography screening independent of perceived breast cancer risks and generalized feelings of anxiety.⁵⁴ Fear appeals also motivate behavior change,^{55–57} particularly when paired with high-efficacy messages.⁵⁸ Furthermore, affect appears to be linked to the extent of deliberative effort decision makers are willing to put forth in order to make the best decision (i.e., the extent of systematic processing).⁵⁹ These findings suggest that individuals who have strong affect about the health risks of smoking may work harder to find and process information about cessation or other options. They further suggest that, without this affect, quit motivation is likely to be low, even if quitting is a stated preference.

Affect as a Spotlight

Peters et al. further proposed that affect plays a role as a spotlight in a two-stage process.⁵⁹ First, the quality of affective feelings (e.g., weak versus strong or positive versus negative) focuses the decision maker on different information. Then, that information (rather than the feelings themselves) is used to guide the judgment or decision. Consistent with this possibility, people tend to spend more effort thinking about negative messages when in a negative mood state compared to positive or neutral mood states.⁶⁰ In other research, Nabi induced either angry or fearful feelings about drunk driving in participants and found that angry participants were almost twice as likely as fearful participants to blame irresponsible individuals rather than societal factors for drunk driving.⁶¹ This increased tendency to blame individuals made angry participants more likely to support retributive policy solutions like harsher fines for drunk drivers versus protective initiatives like implementing a free taxi service. Thus, for participants in this study, angry vs. fearful feelings highlighted different causes of the problem (irresponsible individuals vs. societal factors), and thinking about these causes led to different conclusions about the best solution.

This function of affect as a spotlight showcases the role of feelings in directing cognitions to address the source of the feeling. It predicts that the presence of graphic warnings should highlight health-risk information, promote greater processing and acceptance of it, and, in turn, increase smoking risk perceptions and quit intentions. Consistent with these predictions, graphic warnings have been shown to elicit increased attention to and elaboration of smoking's health risks as well as increased evaluations of warning credibility.^{62,63} This effect should also lead smokers given graphic warnings to remember more health information from them than those given text-only warnings.^{64–66} In fact, survey research shows that smokers in countries with graphic warning labels can identify more smoking risks than smokers in countries with text-only warnings.^{67,68}

Clinical Trial Evidence of These 3 Functions of Affect with Graphic Warnings

In a recent clinical trial, we examined evidence for the 3 functions of affect acting simultaneously in response to exposures to graphic warning labels on cigarette packages. In Evans et al.⁴², warnings with graphic images did, in fact, elicit more negative affect about smoking than text-only warnings. Consistent with past research on the Affect Heuristic and the function of affect as information,^{29,31} this greater negative affect increased risk perceptions (and quit intentions in turn).⁴² Increased negative affect also motivated greater quit intentions directly, consistent with the function of affect as a motivator of behaviors and behavioral intentions. Third, and consistent with affect acting as a spotlight, the greater negative affect elicited greater scrutiny of the messages and increased perceptions of warning credibility. These increased credibility perceptions led to heightened risk perceptions and quit intentions. The presence of graphic images also increased memory for label content, which led to greater smoking risk knowledge immediately after participants completed the trial and approximately one month later.⁴²

Thus, graphic warning labels convey more information about the health risks of smoking that is perceived as more credible and influences risk perceptions and quit intentions in turn. This research provides evidence that graphic warnings are not “unabashed attempts to evoke

emotion”,⁴ but, rather, the affect elicited by graphic warnings is a crucial component of effective warnings. Thus, although graphic warning labels do have an emotional component, their ultimate impact (which is inseparable from the emotional component) is to help smokers more effectively process, consider, remember, and act on “purely factual and uncontroversial information.” Although we can measure and even manipulate feelings and thoughts separately, they are ultimately inseparable because what we think about influences how we feel and, even more importantly for graphic warnings, how we feel directs what we think about.

INFORMING LEGAL DECISION MAKING

As evidenced by the above discussion, the interactions between affect, information, and decision making are complex and multi-directional. The courts in the *R.J. Reynolds* case, however, in trying to distinguish between “factual” and “emotional” messages, applied a simplistic model of the human mind and how it processes information that is out of sync with current behavioral research. Although there were other problematic aspects of the *R.J. Reynolds* decision, the courts’ unwillingness to recognize that an “emotional” graphic warning label could nevertheless be “factual” was critical to the outcome of the case.^{3,4}

The courts’ inability to incorporate behavioral science into legal decision making goes well beyond this specific case and has deep-seated roots. One source of the problem is law’s “persistent inclination to dichotomize reason and emotion, or objectivity and subjectivity.”⁶⁹ The courts’ belief that “emotional” thinking is inherently problematic has a long legal pedigree; indeed, law students are repeatedly instructed to take the “emotion” out of their arguments, and focus instead on legal precedent and logic, throughout their time in law school. Likewise, jurors are often instructed to check their emotions at the door and focus on applying the law in a neutral and dispassionate way.⁷⁰ Given this cultural context, it is perhaps no surprise that the concept of “emotion as information” is one that is unfamiliar, and inherently unsettling, to judges. (It should be noted, however, that there is a developing academic field of “Law and Emotions” that is attempting to push back against these well-ingrained patterns of thought.⁷¹)

Furthermore, courts are duty-bound to use the applicable legal precedents, and many well-established legal doctrines have built up over time without any (or with outdated) empirical grounding. For example, the First Amendment’s commercial speech doctrine—which governs both restrictions on commercial advertising and mandated warnings—is based on an idealistic conception of a “marketplace of ideas,” in which consumers process information put forth by warnings and advertisements alike in a logical and objective manner.^{70,72} Legal doctrine built on this foundation cannot help but struggle with the fact that “[m]any dry and nonsalient statements don’t actually improve decision making, since they aren’t noticed or understood by the recipient.”⁷³ Likewise, because the legal doctrine conceptualizes commercial advertising as the transmittal of information, it cannot cope with the fact that much of modern advertising has only limited non-emotional information content; ads are premised instead on building an affective connection with the listener or viewer.^{74–77} As Tushnet has put it, well-established commercial speech doctrine “misdescribe[s] the world” and therefore leads to questionable results.^{73,75}

In the tobacco context, Goodman notes that “[c]igarette manufacturers in particular have long excelled at making emotional connections between consumer and product” and that these tactics have been, quite reasonably, construed as manipulative.⁷⁴ However, she points out that the emotional content alone is not the source of manipulation; instead, the manipulation arises from the use of marketing tactics that reduce the consumer’s ability to make reasoned, autonomous decisions. For example, cigarette companies manipulate the color of packaging in order to suggest (incorrectly) to consumers that some brands are less harmful than others. Tobacco companies were also pioneers in the use of product placement in movies, which can influence consumers outside of their conscious awareness.⁷⁴ Yet the Supreme Court signaled in its most recent commercial speech case that attempts to regulate such manipulative marketing tactics will be met with skepticism, writing that “[because] the State finds expression too persuasive does not permit it to quiet the speech or to burden its messengers.”⁷⁸

These challenges are not amenable to easy fixes; challenging engrained culture and deep-rooted legal precedents is no simple task. Scientists often think that the presentation of empirical evidence will, on its own, be persuasive to courts.⁷⁹ But courts are remarkably resistant to such evidence.⁸⁰ In the view of many judges, their obligation is to follow the applicable precedents, not to bend the legal doctrine to accommodate new scientific developments.

IMPLICATIONS FOR TOBACCO REGULATION AND CALLS FOR ACTION

Due to the reluctance of courts to incorporate evidence from behavioral science into legal decision making, scientists who want to have an influence on legal decisions—including those involved in tobacco regulatory science—must play both a short and a long game. In the shorter term, it is critical to frame evidence to the courts in ways that consider the doctrinal questions that courts are asked to answer. In the *R.J. Reynolds* case, for example, the initial question for the court was whether the FDA’s proposed graphic warnings labels were “factual and uncontroversial.” Although much of the empirical evidence presented to the courts focused (quite appropriately) on the question of the warning labels’ potential impact on smoking initiation and cessation, the government arguably spent too little time trying to bring evidence to bear on the question of what is “factual” (allowing the tobacco companies to direct the courts’ framing of this issue). In order to focus the presentation of evidence on the doctrinal questions the courts will face, it is critical for attorneys and behavioral scientists to work closely together in preparation for legal hearings, but also throughout the research process.

These collaborations will sometimes result in culture clashes. For example, the pointed criticism of the courts’ analyses in this paper could potentially be perceived by behavioral scientists as disrespectful of the legal system. However, such criticism is culturally acceptable—indeed, encouraged—in legal writing and analysis. Another cultural difference resides in how lawyers use and rely on research findings. For example, to a behavioral scientist, more research is always needed and limitations exist in all of science; it is simply part of the scientific process. Lawyers on both sides, however, will focus on findings and expressed opinions that best support their argument, and will attack any weaknesses in the

other side's evidentiary support. Thus, lawyers have used (or abused) the focus on scientific limitations to argue that scientists do not even believe their findings to be true. Both researchers and lawyers benefit when behavioral scientists not only highlight the weaknesses of a given study, but also communicate the strengths of the research, either on its own or in the context of the overall literature. As a result, explicitly outlining the implications of research for specific possible or proposed regulations is particularly important within the context of tobacco regulatory science.

In the longer term, attorneys and scientists must work together to devise strategies to incrementally bring legal doctrine closer in line with scientific knowledge. This requires (a) investment in interdisciplinary efforts to propose changes to existing legal doctrine, (b) sharing the product of such efforts with the legal community by, for example, publishing in law review journals, and, (c) strategically engaging in select cases that have the potential to challenge how commercial speech issues are conceptualized by the courts.

The industry already has a decades-long head start. It is well known that the tobacco companies, as well as other commercial interests, seek not just to defeat regulatory efforts in court, but to influence how both the courts and the public conceptualize issues of smoking and public health. (Yosifon refers to this as "deep capture.")⁸¹ These efforts wisely capitalize on existing legal norms (e.g., objectivity) and culture norms (e.g., personal responsibility),⁸² and for too long, these efforts have gone largely unchallenged. Behavioral scientists, working with public health attorneys, must be similarly focused on developing long-term strategies to change the public and legal discourse surrounding tobacco and other public health policy issues.

Contrary to the courts' decisions in the *R.J. Reynolds* graphic health warnings case, current research is clear that "emotional" is not the opposite of "factual." Instead, emotions act as a cue to inform risk perceptions, motivate behaviors, and encourage greater scrutiny of risks. Both psychological theory and clinical trial evidence further suggest that graphic health warnings are more likely to be carefully considered and remembered than textual warnings.

The *R.J. Reynolds* case demonstrated the legal system's difficulty in applying a nuanced understanding of behavioral research. Although this results from deep-rooted patterns in legal thought and practice, researchers can nonetheless work with public health lawyers as recommended above to try to bring legal doctrine closer in line with the current state of the science. In particular, a long-term strategy is needed for strategically influencing the ways in which courts conceptualize issues of commercial speech regulation.

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Figure 1.