Expand your View

Insights for
public communicators
from behavioral research

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Contents

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Introduction

Communication is a dialogue. We take the other person into account when we're trying to communicate. We listen as much as or more than we speak. We know these things from an early age in our interpersonal communications, so it's remarkable that we sometimes forget them when trying to communicate with members of the public. Commonly one hears about "getting the word out" to "the general public" or "educating the public" about an institutional program or purpose. In such statements, the reality of other individuals, with all their personal differences, interests, and knowledge, often appears lost.

If we're trying to communicate successfully with the public about a scientific or technical topic (which inherently presents communication challenges), can we proceed with something more than our own hard-won experience? Do strong, research-based models exist, or, more broadly, can we draw on social research fields? The answer to those questions is yes . . . *but.* Certainly such fields and models exist, but their use properly follows from an analysis of, and decision about, what we wish to accomplish with our communications.

In broad terms, is our goal to aid in the other's learning, or is it to inform, to influence, or perhaps to persuade? Do we intend a specific outcome, some distinct "response" to the stimulus of the communication? And does that outcome focus on the other's behavioral response; or are we equally, or more, concerned about our relationship with the other person? Such questions take us to practical considerations—*what do we think is achievable?*—as well as ethical ones—*what effect do we think is proper?*

The answers to these fundamental questions about ends will drive the choice of means—or at least they may, if we consider them seriously. On the other hand, the choice of means *first* may result in unexpected ends, both in terms of the successful reception of what we wished to communicate and in terms of our relationship with those we communicate with.

With a solid foundation laid, we can then frame a communication plan that addresses critical questions of who, what, where, when, why, how; and how much money or other resources are needed for the communication effort. The answer to the key question of "how" the communication will be designed to achieve its objectives may certainly come from our own experience, observations of the work of colleagues, and other resources. We may also draw upon the professional literature in communications and in related social sciences that informs communications.

Communication practitioners seem *not* to draw upon this knowledge resource often enough, perhaps primarily because "keeping up with the literature" presents a high barrier. To
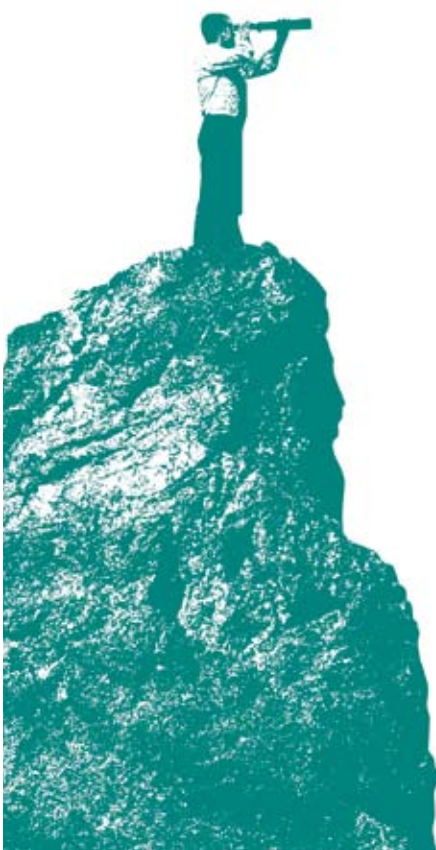
An agency administrator is as much a "communicator" as a public information officer, but likely knows less about communications.

try to lower the barrier a bit and expand the field of view, the remainder of this essay reminds the reader of potentially useful contemporary fields of behavioral research—broadly defined to include not only persuasion and behavior change but also learning and "social epidemics." Also presented are some models—distilled insights—that may help those who communicate with the public to enrich their perspective and improve their practice.

As with *Hold that Thought!*, a companion article, in the following discussion, "communicators" mean those professionals who work in universities, government, nongovernmental orga-

nizations, and similar organizations and institutions and who communicate with the public about ideas (as opposed to *marketers* of *products*). An agency administrator, for example, is as much a communicator as a public information officer, and the leader is likely to know less about communications, so this publication is definitely also for him or her.

The five broad fields chosen here certainly do not represent the complete array of what social science has to offer. They're only examples, though purposeful ones. They all reflect a substantial body of peer-reviewed research. More importantly, they all

have come to terms (different terms, as it happens) with the core issue of the reality of the other person and communicating successfully with that person.

Professionals who communicate with the public are working at a fortunate moment. We have ready access to insights from social science to assist us and improve what we do. But the research-practice interchange should not be one way. By applying principles, findings, and models of social science, putting them to the test, and communicating *our* results, practitioners could in turn influence social science. Such a dialogue could benefit all.

1

Understanding and addressing psychological barriers:
Persuasion research

Public communicators often appear to be trying to change another's behavior or inviting the other to at least consider a change in behavior. In a culture that idealizes self-improvement, it's no surprise that a great deal of research has been conducted during the last half-century on behavior change, and much of this research has focused on persuasive communication.[1] One emphasis of such persuasion has been to change personal behaviors relating to health.

Why don't people change unhealthy behavior—for example, cigarette smoking or unprotected sex? What are the barriers that stand in the way of making healthy behavioral choices? Such have been the underlying questions that have led to the development of several now well-established theories and models of behavior. Martin Fishbein and Icek Ajzen, two psychologists who have sometimes collaborated, have identified determinants of behavior change in two very similar theories, Fishbein's integrative model of behavioral prediction[2] and Ajzen's theory of planned behavior.[3]

Fishbein's integrative model offers the convenience of a clear diagram that helps communicators recognize two key research insights—that behavior change doesn't occur without an individual's *intention* to change a behavior, and even then, the change will not occur if the individual is *unable* to act on it.[4] These insights direct the communicator's attention to the determinants of a behavioral intention and subsequent action. These determinants are also where to look for barriers—what stands in the way of intention and action. Thus, the communicator would want to know if the person

- believes (or, in the case of a barrier, does *not* believe) that adopting the behavior will lead to "good" outcomes (see "attitude" in the integrative model)
- believes (or does not believe) that others think he or she should adopt the behavior and is motivated by their view ("perceived norm" in the model)
- believes (or does not believe) that he or she is capable of taking action ("self-efficacy" in the model)

If what the individual believes does *not* present barriers, and an intention to perform the behavior is held (weakly or strongly), we would then want to know if the person is lacking some skill (or knowledge or ability) to perform the behavior, or is hindered by some other constraint in that person's "environment." All these considerations are shown in the model (figure 1).

Knowing where the barriers are located allows purposeful, targeted communication to address them. However, what this and other behavior-change models do not tell communicators is *how* to design messages to
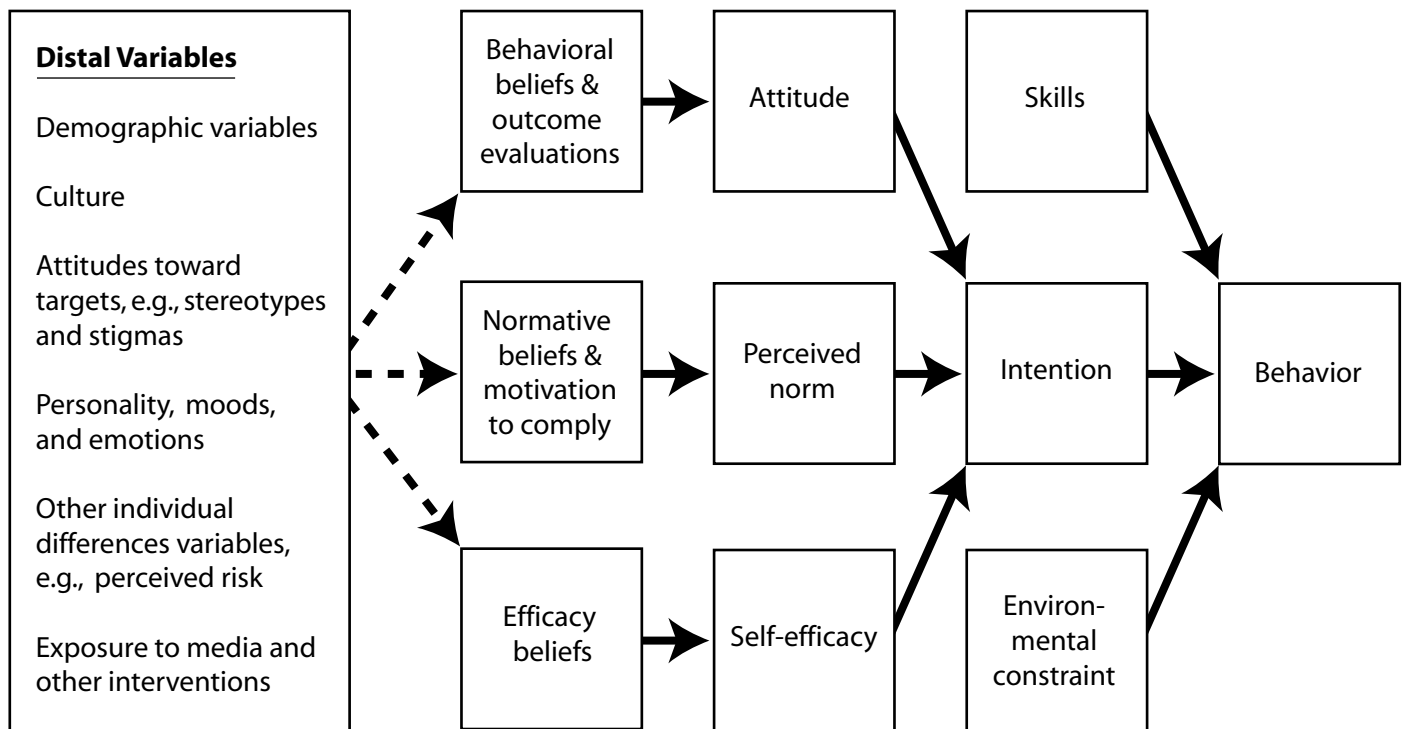
Figure 1.— The "integrative model of behavioral prediction."
(Model redrawn from "An Integrative Model of Behavioral Prediction," Fishbein and Yzer)[34]

overcome such barriers, change the determining beliefs, and achieve those behavior changes.[5] In short, how *are* people persuaded?

By the 1970s, social scientists recognized that conscious attention is the scarcest resource for people making decisions, and thus people receiving a message often don't pay much attention to it.[6] Since people have limited mental energy and spend it on what interests them, the first challenge in persuading anyone is to capture that person's attention. Attention is fleeting, however, and research starting in the 1980s showed that the factors that lead to a durable change in attitude and beliefs are the cognitive involvement of the person in the persuasive argument and the ability to process the information. *O.K., you have my attention; make your case* is, in effect, what a communicator wants to hear. This raises the question, *What characteristics of information typi-*

cally cause people to be involved when they receive it?

In answering this, it's important to note that the operative word is "typically," and the underlying bias is contemporary American psychology, focused on the ego's desires and defenses. (Other cultural or psychological perspectives might yield different motivators.) Mainstream American psychologists have boiled the list of motivators down to three typical characteristics: values, outcomes, and self-image. Messages involve their receivers "by dealing with receivers' enduring values, with receivers' ability to obtain desirable outcomes or avoid undesirable outcomes, or with the impression receivers make on others."[7]

Once the person *is* involved and has the ability to think about the message, the person will actively respond to, or elaborate on, the attempted per-

suasion with his or her own arguments *pro* and *con*. When the sum of such "elaboration" scores the message favorably, the person will change attitude or belief in the proposed direction; when the sum of the mental elaboration is negative, the person may either just reject the advocated position or "boomerang"—adhere to their previous belief, even more strongly.[8]

Effective arguments

Since this Elaboration Likelihood Model[9] places so much consequence on the effectiveness of the persuasive argument, a communicator might ask what insights social science has to offer regarding argument effectiveness—insights, that is, that the communicator does not already know from professional experience or from encountering the art of argument in a wide range of his or her reading.

For example:

"Charming day it has been, Miss Fairfax."

"Pray don't talk to me about the weather, Mr. Worthing," says Gwendolen, the cheeky heroine to Mr. Worthing (Jack), her would-be suitor in Oscar Wilde's comedy, *The Importance of Being Earnest*. "Whenever people talk to me about the weather, I always feel quite certain that they mean something else."[10]

The reader smiles, but if she reflects, she sees that the essence of Gwendolen's rejection of Jack's opening remark is that she considers her suitor's verbal sortie not new, easy to contradict, and irrelevant to what he really wishes to say. And indeed, that's just what social science research reveals: an argument that is effective in changing a belief is (a) novel—not part of the receiver's prior belief system; (b) strong—tends to produce agreement and not encourage counterarguments; and (c) relevant—to the attitude or behavior the communicator wants to change.[11]

Looking at this failure from the bright side, Wilde's persuader, Jack, did obtain a degree of involvement—and the dalliance, in fact, continues. Gwendolen *could* have just sized up Jack based on his looks, decided that a pert smile was all he deserved, and took no further notice of him. Something close to this happens to any argument, research shows, if the other person is not engaged or lacks the mental ability to process the argument. Such a person falls back on shortcuts to evaluate the merits of the argument, including whether the arguer appears likeable, attractive, or trustworthy. This is the so-called "peripheral route" of processing information in the Elaboration Likelihood Model (see a figure of the model in *Hold that Thought!*).

While persuasion research has much more to offer communicators, these models that identify the determinants of behavior and the dual modes of processing information seem central to the effective communication of complex or complicated ideas such as those of science and technology.

Role of unconscious mind

Even a brief discussion of persuasion, however, needs a couple of additional observations.

The first concerns the nature of mind itself. For complex philosophical and practical reasons, American experimental psychology since World War II has devoted nearly all of its attention to the workings of the conscious mind; the two models presented above are significant results of this effort. By contrast, post-war American psychology has generally neglected to consider the function or sometimes even the existence of the *un*conscious

mind. But over the last two decades, empirical studies of the unconscious have revealed a domain quite a bit more influential in our lives than even Freud's unconscious, that jail of instinctual desires and needs.

This domain has been dubbed the "adaptive unconscious." "Adaptive" signifies here that, in evolutionary terms, this unconscious arose very early in the development of the human species as an adaptive advantage, enabling some operations of the mind—running away from a wild beast, for example—to happen automatically, without conscious deliberation. In this view, "the mind is viewed as a collection of processing modules that operate efficiently outside of awareness and may have existed before consciousness evolved. These processes are involved in perception, attention, learning, evaluation, emotion, and motivation."[12]

While Freud argued that the unconscious was accessible by the conscious mind (and the work of psychotherapy involves such examination), the experimental psychologists who study the adaptive unconscious make the radical claim that it is *not* usually available to consciousness. We are "strangers to ourselves," as the title of a popular account of this new view of mind has it; the self that we construct may be quite at odds with—and usually quite unaware and ignorant of—the self of our adaptive unconscious.

The practical implications of this insight would seem to be extensive. Our split identities are painfully revealed when, for example, a man declares himself in the plainest and most sincere terms not to be racist, but whose unconscious racism becomes manifest at moments of sudden stress, such as walking down a dark city street. In addition, to cite a relevant old adage, because "the heart has its reasons that reason knows not of," the assertions that people make in surveys or other assessments of their behavioral inclinations (and particularly of their attitudes) should be accepted with caution. While these assertions may be true and accurate in terms of the "constructed self" that an individual presents to society, they *may not* be reliable predictors of behavior.

As the adaptive unconscious is a relatively new field of experimental study, perhaps the best general guidance to take at this point is to be aware, first, that it exists and, second, that it may affect the variables that a communicator may be concerned about. As a communicator sets out to persuade based on others' self-report of attitudes, for example, he or she may find that the others' attitudes—of which they may not be conscious—are different from the ones reported.

The second key assumption underlying persuasion research is that persuasion is the *best* path to changing individual behavior. The following essays will illustrate alternative paths.

Expand your view:

1. Identify the barriers to behavior change faced by a particular person or group.

2. Recognize key motivators that typically promote persuasion: values, positive outcomes, and self-image.

3. Construct a strong argument that engages the other person with novelty and relevance.

2 Building on an ethical foundation: "Nonpersuasive communication"

In contrast to some psychologists' focus on persuasive communication, Baruch Fischhoff and his colleagues have developed an approach to scientific and technical communication that he terms "nonpersuasive communication." The approach, described in detail in *Risk Communication*[14] and in numerous articles, has been employed by Fischhoff and others in a number of projects, particularly those involving communication of risk.

The ethical foundation of nonpersuasive communication is a respect for and trust in the receiver of the communication:

> People tend to make reasonable choices if they get key facts in a credible, comprehensible form; have control over themselves and their environment; are judged by their own goals; and have basic decision-making competence.[15]

Most science journalists, university outreach faculty, and other communicators who feel a primary commitment to getting the facts right and leaving others to make their own decisions probably share this view.

In the nonpersuasive approach, a communication product results from the collaboration of four kinds of specialists, each playing a discrete and complementary role. The first specialists are the subject-matter experts, organized as a panel or other group, who develop, together and iteratively, an "expert" model that summarizes their knowledge about the topics to be communicated. The second specialists are decision scientists who review the expert model and tease out the elements that are important to the decisions that the intended audience may wish to make. Behavioral psychologists or other social scientists are the third specialists; they gather information about the intended audience and its perceptions of the communication topics. They provide guidance to the fourth specialists, the communicators, regarding these audience perceptions and goals relating to the communication topic. The resulting communication invites the audience to respond constructively to the information presented.

One notable strength of this approach is the array of specialists involved. It's common that science communicators receive information from subject-expert scientists. But in formulating communications, decision researchers and psychologists rarely become involved in refining that information for the specific audience and purpose. The methods and insights of social scientists have the potential to sharply focus the communication strategy and help ensure that what is communicated is both relevant and acceptable to the recipients.

Granting this, the involvement, collaboration, and sheer investment in working with such an array of professionals may seem to run the risk of the "communication" being rather one-

To improve communication: a team of specialists—in the subject matter, in decision-making, in the psychology of the audience, and in communication.

sided and driven by its producers. In practice, this can be avoided by bringing the intended recipients into the process in a critical way throughout the development of the communication (which, after all, is presumably intended to benefit them).

Nonpersuasion in practice

One illustrative project involved communicating with teenage girls about sexually transmitted diseases (STDs).[16] After a team of diverse health professionals developed the expert model of STD risks, behavioral and decision researchers conducted "semi-structured interviews" with the target audience of adolescent girls, posing open-ended questions regarding the main issues described in the expert model. Open-ended questions allow people to reveal a range of beliefs and misconceptions, in their own words, without decisive framing or pre-filtering by the interviewer. Such interviews shaped the communication product:

> The contrast between our expert model and the target audience's "mental model," as revealed in the interviews, focused the intervention content. Topics that are present in the expert model, but absent from interviewees' mental model, represent information gaps. Topics that are mentioned by interviewees, but missing from the expert model, often represent misconceptions.

The overall structure of the audience's mental models suggests how the intervention can integrate new information with existing beliefs, filling in gaps and correcting misconceptions.[17]

In this project, the interviews revealed four "general trends" of information needed by the girls to help them make less risky sexual health decisions. To communicate this information, the project team drew on previous behavioral research and decided to use an interactive DVD as the communication intervention, since in this case it would allow the user to consider a potentially delicate subject in private and at her own pace. The researchers hired communicators who developed the DVD, testing it throughout development on the intended users. The DVD design was notable for dramatizing typical situations the girls might find themselves in and offering explicit "choice points" that could point toward or away from unsafe sex. At such points, the DVD paused automatically for 30 seconds, allowing the girls to practice considering what they would do.

In the study, the DVD intervention was compared with two other high-quality informational interventions (the same content in book form and two commercially available brochures). In the followup, six months later, girls who had watched the DVD were significantly less likely to report having been diagnosed with an STD.

While the methods, rationale, and eventual success of this particular communication could be considered in greater detail, the main value here is this: a team of specialists—in the subject matter, in decision-making, in the psychology of the audience, and in communication—can lead to more effective communication than when the decision scientists and psychologists are omitted from the equation, as they usually are in communications with the public about science and technical topics.

That such omission is the norm perhaps may be explained, at least in part, by the educational and professional experience of those who manage science, technology, and resource organizations and frame their communication policies. That education tends to be in a science, the on-the-job experience in organizational management. These can subtly cause the manager to undervalue other disciplines *(I can write professional articles and strategic plans! What's so hard about developing an effective brochure for the public?).*

Expand your view:

1. Broaden the participation in science communication beyond the subject-scientist and the communicator. Include social scientists to help focus what part of the science is relevant to your audience and how best to approach them.

3

Embracing the voluntary:
The perspective of free-choice learning

Just as a simple one-way model of what is sometimes called "information transfer" is inadequate for describing the give-and-take of genuine two-way communication, also inadequate is the traditional "transmission-absorption model" of learning, which conceived of learning as "a process of filling-up identically empty minds as they moved past on the educational assembly line."[18] If there was any real doubt about the inadequacy of the assembly-line concept, research in recent decades has made it clear that learning is rarely an instantaneous event, but rather a time-consuming, cumulative process. "Typically, individuals acquire an understanding of the world through an accumulation of experiences, normally deriving these from many different sources over time," as John Falk, one influential researcher, has summarized.[19]

Indeed, the recognition that people may be learning all the time and acquiring new knowledge in highly individual ways is the core insight that drives learner-centered formal education and the burgeoning discipline of free-choice learning. The latter is defined as voluntary learning that occurs when the learner perceives he or she has a choice about what, where, when, and with whom he or she learns. This explicit focus on the learner's choice makes free-choice learning a rather different construct

than "informal education," which retains an emphasis on teaching, or even "lifelong learning," which may include formal, informal, or free-choice under its rubric.

Free-choice learning researchers point out that such learning is the norm in life, as nearly all (by some estimates, more than 90 percent[20]) of learning happens outside of the schooling environment and is guided by the learner's interests. This observation is likely to be welcomed by those who attempt to communicate about scientific and technical topics with the public, especially those who eagerly hope to "educate the public" via some particular communication or communication campaign. The use of the term "educate," however, is usually a sign of misunderstanding about how free-choice *learning* occurs.

While those who would educate in informal settings and contexts may believe they have the sort of control over the learner and the learning process that is associated with traditional schooling, they don't. When learners are in control of their own learning, the depth and extent of learning is determined by the individual's capacities, interests, and needs.

Acknowledging that all learners make personal choices about their learning should not be difficult for public communicators, who encounter this challenge of the civic "informa-

tion marketplace" all the time. But it may still be a radical idea to some educators, as John Falk indicates:

[F]ree-choice learning represents a bottom-up, individual-driven way to think about learning rather than a top-down, institution-driven view. Free-choice learning draws attention to the importance of focusing on each individual's unique, lifelong journey and the role of the individual and his/her social context in determining the direction of that journey. This is in contrast to focusing on the mass-produced, curriculum-driven educational agendas of institutions and public authorities that are typical of formal settings.[21]

From a historical perspective, free-choice learning theory and practice is in the mainstream of educational philosophy reform during the past century, much of it associated with the constructivist theory of Jean Piaget, who argued that through processes of accommodation and assimilation, individuals construct new knowledge from their own experiences.

Research illuminates communication

To date, much of free-choice learning research has been conducted in museums, and some of that research has helped reframe understanding of learning as not so much what happens inside a solitary individual's head as what

happens between people, an "exchange where the building blocks of understanding are put together through dialogue with others."[22] Expressed this way, free-choice learning can also be seen as in the mainstream of "postmodern" philosophy, whose three primary tenets philosopher Ken Wilber characterizes as (1) reality is not a "given" but is constructed by the observer; (2) meaning is dependent on the context and contexts are boundless; and (3) no single perspective has privileged understanding.[23]

Free-choice research in museums is contributing to our understanding of the subtle interplay of speaking and acting that occurs when people learn together. A close analysis of this interplay of behaviors can reveal how, in the moment, a particular person's contribution becomes used by others—or as researchers say, becomes "privileged, appropriated, rejected, or deployed."[24] For example, think of the situation when a well-intentioned parent arrives at the museum exhibit to which his child has run ahead and has begun exploring. The parent and child's interaction around this learning opportunity may play out this way:

Dad (reading a display): *"Johnny— could you stop fiddling with those knobs for a second? The museum says this exhibit is a demonstration of Newton's second law of motion. Uh, well, that means it's—."*

Johnny has run off to the next exhibit.

This very simple example highlights the dynamism of the learning exchange and the prominence of free-choice behavior in learning. For professional communicators it's also a pithy reminder that language is only one mode of communication, and much else is happening within the context of a verbal communication.

Expand your view:

1. Civic society is not school, so when you hear the time-worn saying, "educate the public," ask the speaker what he or she really means.

2. Once you start recognizing all the instances of "free-choice learning," you may find it refreshing and ask, *How can I make use of **that** opportunity to communicate successfully? That's generally a more fruitful tack than How can I get them to pay attention to me?*

4 Seeing the whole range of influence:
The "people and places" framework

It was likely inevitable that at least some of behavioral science would evolve from a focus on the individual to a broader perspective, one of human ecology. Such an ecological perspective is what Edward Maibach and colleagues have developed with a "people and places framework."[25] The fundamental insight supporting the framework is simple: an individual's behavior may be influenced not only by direct appeals but also by the people in the individual's social circle and by the wider community. In addition, elements in the social environment—both local and distant—may also influence an individual's behavior, including such factors as the availability of products and services; policies, laws, and their enforcement; and media messages. (See figure 2, next page.)

Although the elements of the framework, stated in this simplified way, may seem obvious enough, what's radical is the framework itself, as it enlarges what variables influence behavior, and, by extension, what communication channels may be legitimate and appropriate for social scientists and practitioners to pay attention to. It expands our view.

Maibach has been particularly interested in the potential of the mass media to change public behavior. Such media effects are often assumed and sometimes claimed, but well-evaluated cases of behavior change are few. One intriguing example of a successful use of mass media to influence behavior, cited in a review article by Abroms and Maibach,[26] is the anti-smoking "truth" campaign in Florida.

Researching media effects

The strategy of the campaign, which targeted 12- to 17-year-old non-smokers, was to use television "counteradvertising" to attack the tobacco industry and portray its executives "as predatory, profit hungry, and manipulative." The campaign argued that "the tobacco industry has targeted young people, lied to and hid the truth from them, and used them to its own ends, knowing that tobacco use is detrimental to young people's health."[27] The campaign, which began in 1998, has been extensively evaluated. One evaluation used a sophisticated design to determine the effectiveness of the campaign.[28]

On the premise that the desired behavior—of not starting to smoke—would proceed from a cognitive change, the Florida researchers used three techniques to measure awareness in their sample of the target non-smoker audience. First, in post-campaign interviews, the researchers asked whether their subjects recalled having seen antismoking advertisements (they did not provide any description of the ads). If respondents answered "yes" or "maybe," they were asked to describe the ad they most liked and relate to the interviewer the major theme or message of the ad.
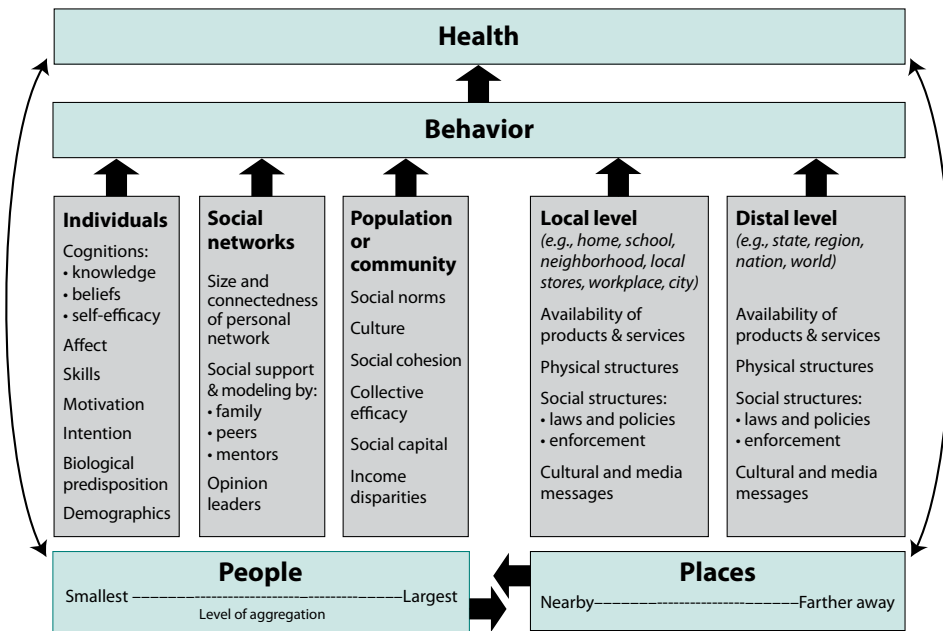
Figure 2.— The "people and places" framework.
(Model redrawn from "People and places framework," L. C. Abroms and E. W. Maibach, 2008)[??]

Next, they measured cognitive reactions to specific advertisements, asking respondents who confirmed that they were aware of the campaign if a particular advertisement made them think about whether they should smoke.[29] (It should be noted that self-reporting on such a potentially leading question would be very difficult to measure accurately.)

Finally the researchers measured the ads' influence on decision-making. For this they embedded one item relating to the theme of the campaign within a list of 19 items read to interviewees. The item was worded so as not to simply repeat the language of a specific ad but instead determine whether the theme was identified: "You feel tobacco companies are just trying to use you" was that item.

From these three sets of responses, the researchers developed an index of media effects. Overall, they found that youths who scored at intermediate and high levels on the index "were less likely to initiate smoking than youths who could not confirm awareness of television advertisements."[30]

Other studies have extended and interpreted the effects of the "truth®" campaign. According to the campaign sponsors,[31] the effects of the campaign have been significant:

- Seventy-five percent—21 million— of all 12- to 17-year-olds in the nation can accurately describe one or more of the truth® ads.

- Nearly 90 percent—25 million— of youths aged 12 to 17 said the ad they saw was convincing.

- Eighty-five percent—24 million— said the ad gave them good reasons not to smoke.[32]

The campaign, in fact, registered itself as a brand: truth®. This focus on establishing a brand was a key to its success, according to other researchers, as brands "can serve as symbolic devices that allow customers to project their self-image, leading them in turn to communicate to others and themselves about the type of person they are or aspire to be."

In the case of truth®, a social marketing brand, organizers opted not to deliver traditional health messages about the risks of smoking, but instead to use "challenging, thought-provoking ad contexts and images" to engage youth in aspiring to be "truth® teens" who are cool, edgy, and popular risk takers, dreamers, and rebels.[33]

Preventing teens from starting to smoke would certainly appear a very good idea, since once addiction to smoking takes hold, the habit becomes difficult to break (for responses to *that* challenge, see the discussion in section 5 on the tipping point).

Expand your view:

1. Evidence indicates that individual behavior *can* be influenced through mass-media campaigns. While easy to assert, careful evaluation will be necessary to demonstrate such effects.

2. Although the "people and places" framework was initially erected to aid public health communication, it can be useful in other public communication contexts, such as environmental issues.[34]

5

Fomenting social change:
Diffusion, the tipping point, and community-based marketing

Suppose a communicator wants to influence people not on the "retail" level of one person at a time, but efficiently, in multiples . . . groups of people . . . whole societies? Conceptual tools to effect such "wholesale" influence understandably attract attention, and over the past 50 years a number of constructs have themselves become quite influential in the marketplace of ideas.

The longest-lived, and perhaps deepest entrenched, is a model known as the "diffusion of innovation," the process through which a new idea spreads via communication channels over time among the members of some social group.[35] The model arose from research conducted by social scientists at several Midwestern universities' agricultural experiment stations, starting in the early 1940s[36]—which may partly explain why the model is so familiar to many university people and particularly those associated with the Extension Service.

The original research focused on the adoption of new hybrid seed corn by Iowa farmers, who were asked when they began using the corn, from whom they got the information about this innovation, and the consequences of adopting the innovation. Graphing the results, the researchers identified a characteristic "S-curve," in which adoption of the innovation progresses rapidly, once enough "early adopters" accept the innovation (figure 3).

In the 1962 first edition of *Diffusion of Innovations*, researcher Everett Rogers laid out the essential elements of the model, showing a modified bell curve (figure 4, next page) that represented the typical distribution of adopters over time, proceeding from the so-called *innovators* to *early adopters*, to *early majority* and *late majority* members, and *laggards*. In the decades following, the model was refined and elaborated in four more editions of the book, and by Rogers' count, as of 2004, in another 5,000 studies by other researchers in a range of academic disciplines.[37] Among the ideas that evolved from Rogers' model are

- the *critical mass*, defined as the point at which enough individuals have adopted an innovation that further diffusion becomes self-sustaining
- a focus on *networks* as a means of gaining further understanding of how a new idea spreads through interpersonal channels
- *re-invention*, the process through which an innovation is changed by its adopters during the diffusion process[38]

Not only in academia but in many sectors of society in much of the developed world, the "diffusion model" has the status of an established truth. The appeal in use is obvious when the model is thought of as follows (as it often is): If the proponent
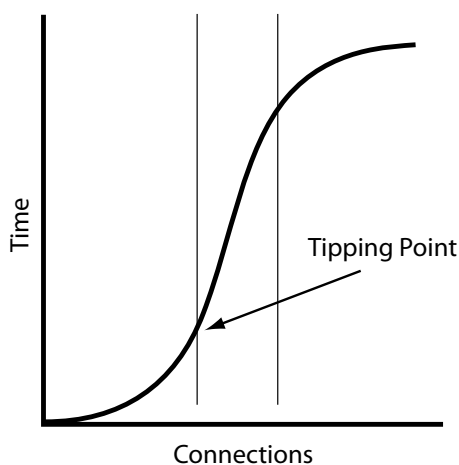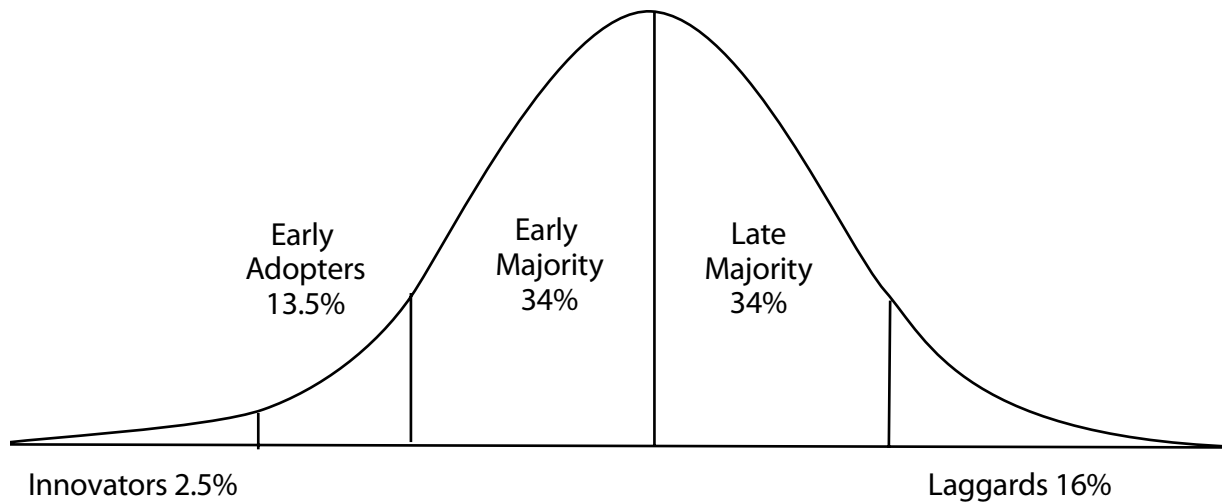

Figure 3.— The "S-curve."

Figure 4.—Categories of Innovativeness.
(Model redrawn from E. M. Rogers, Diffusion of Innovations, *4th edition)*

of an innovation—for example, an inventor or creator—can only persuade the "innovators" of the merits of the innovation, then, voilá, before you know it, they will likely influence the early adopters, and soon there will be a cascade of influence, and the innovation will be widely adopted.

In Rogers' last edition of his book, he ventured to characterize the innovators:

> Venturesomeness is almost an obsession with innovators. Their interest in new ideas leads them out of a local circle of peer networks and into more cosmopolite social relationships. . . While the innovator may not be respected by other members of a local system, the innovator plays an important role in the diffusion process: that of launching the new idea in the system by importing the innovation from outside the system's boundaries. . . .[39]

The tipping point

How diffusion is "launched" and becomes "self-sustaining," in Rogers' terms, is what journalist Malcolm Gladwell expands upon in his business/psychology best-seller, *The*

Tipping Point. The concept of the tipping point, or "how little things can make a big difference," as the subtitle puts it, is the book's center of attention. Gladwell focuses on why conditions tip, or a system—some kind of complex social arrangement or condition—appears suddenly to change state. Why, he asks, did Hush Puppy shoes have a sudden resurgence across America in the mid-1990s; or more importantly, why did violent crime suddenly decline dramatically in New York City at about that time? Both are examples of social epidemics, he argues:

> The best way to understand the emergence of fashion trends, the ebb and flow of crime waves, or, for that matter, the transformation of unknown books into bestsellers, or the rise of teenage smoking, or the phenomena of word of mouth, or any number of the other mysterious changes that mark everyday life, is to think of them as epidemics. Ideas and products and messages and behaviors spread just like viruses do.[40]

While a graph of the tipping point is contained within an S-curve, and

the tipping point mechanism may owe a debt to the diffusion model, the insight that Gladwell draws from his sources is radical and, as he says, occasionally counterintuitive. Behavior doesn't change—at least some of the time—*primarily* because those who change have come to *know* something that they didn't before. Individual change can happen independent of deliberate cognition. People just get swept up by the influence of individuals or groups, often in ways that are subtle and unexpected, just as if affected by a virus or some other force beyond easy control. (A symbolic unlit match adorns the book's cover.)

In itself, an examination of such influence is not new with Gladwell's book, published in 2000; researcher Robert Cialdini's 1984 bestseller, *Influence: The Psychology of Persuasion*, pioneered some of the same territory in his examination of the methods "compliance professionals" use to obtain their influence, sometimes on a grand scale. But Gladwell focuses on *how* epidemics happen—how conditions can change suddenly, or tip— and he describes three determinants, one of which will seem familiar: "The Law of the Few."

Recent research casts doubt on the power of "influentials."

"Something in all of us feels that true answers to problems have to be comprehensive, that there is virtue in the dogged and indiscriminate application of effort," Gladwell observes.[41] The communication corollary of this presumptive virtue is the highly-orchestrated public information campaign or public "education" effort undertaken in hopes of changing some behavior. Gladwell argues that our ideas of public virtue may be preventing us from seeing how a few types of individuals actually may influence behavior much more than an "indiscriminate application of effort." These few "influentials" Gladwell terms Connectors, Mavens, and Salesmen.

Paul Revere and William Dawes both set out one night to warn the towns around Boston that "the redcoats are coming." Revere was notably successful; his towns mobilized rapidly. Dawes, forgotten today, was apparently no more successful then. His towns did not muster. Revere was successful and Dawes not, Gladwell claims, because Revere was a "Connector." Not only did he know a great many people, and they were from all walks of life, but he had an "uncanny" ability to bring them all together through his highly sociable, trustworthy personality. Revere knew which doors of the towns to knock on, and he knew exactly what to say.

Connectors aren't the only ones who matter in spreading an idea through a society. Someone has to accumulate the new information: the "Mavens." Mavens not only know information that's potentially valuable to others, but they want to help because, well, that's just what they do. They are not motivated by a desire to persuade. This "turns out to be an awfully effective way of getting someone's attention," Gladwell observes.[42] In this sense, Revere was also a Maven.

While "Salesman" may seem a descriptor that offers little new thinking, Gladwell identifies something novel in the "persuasive personality." Salesmen can draw others into their own rhythms and dictate the terms of the interaction.[43] They have the ability to send emotion, to be contagious. Effective product salesmen do this, of course; so do effective politicians and other leaders.

Social epidemics

If one wants to start a social epidemic, especially via word-of-mouth, one doesn't need to reach everyone, *The Tipping Point* claims. A Maven, Connector, and a Salesman will be sufficient. (Here it's appropriate to note that the insights that Gladwell presents are grounded in a study of social science research, but he's not a social scientist himself, and his infectious enthusiasm for ideas and his rhetorical skill in presenting them have been accused of sometimes running ahead of the science.[44])

Before turning to the other two factors that Gladwell says enable epi-demics, some critical thinking about "influentials" is in order. Both the diffusion of innovation model and the "law of the few" promise that the key to moving large numbers of people is to target those with particular characteristics that make them influential. Those characteristics were first described in the mid-1950s in public opinion research that identified so-called "opinion leaders" to explain the phenomenon that individuals may be more influenced by exposure to *what others say* about some media content than by exposure to the media itself. Such opinion leaders are not necessarily "leaders" in the conventional sense by virtue of some position of authority, but rather because they are "individuals who are highly informed, respected, or simply 'connected.'"[45]

In this view, media didn't affect the public directly but rather in a two-step process through influentials (figure 5, left diagram). This "influentials hypothesis" has been called into question, however, in recent research by sociologists trained in mathematics and computer science, who use computers to simulate interpersonal influence. Lead researcher Duncan Watts has observed that "under most conditions that we consider, we find that large cascades of influence are driven not by influentials but by a critical mass of easily influenced individuals."[46]

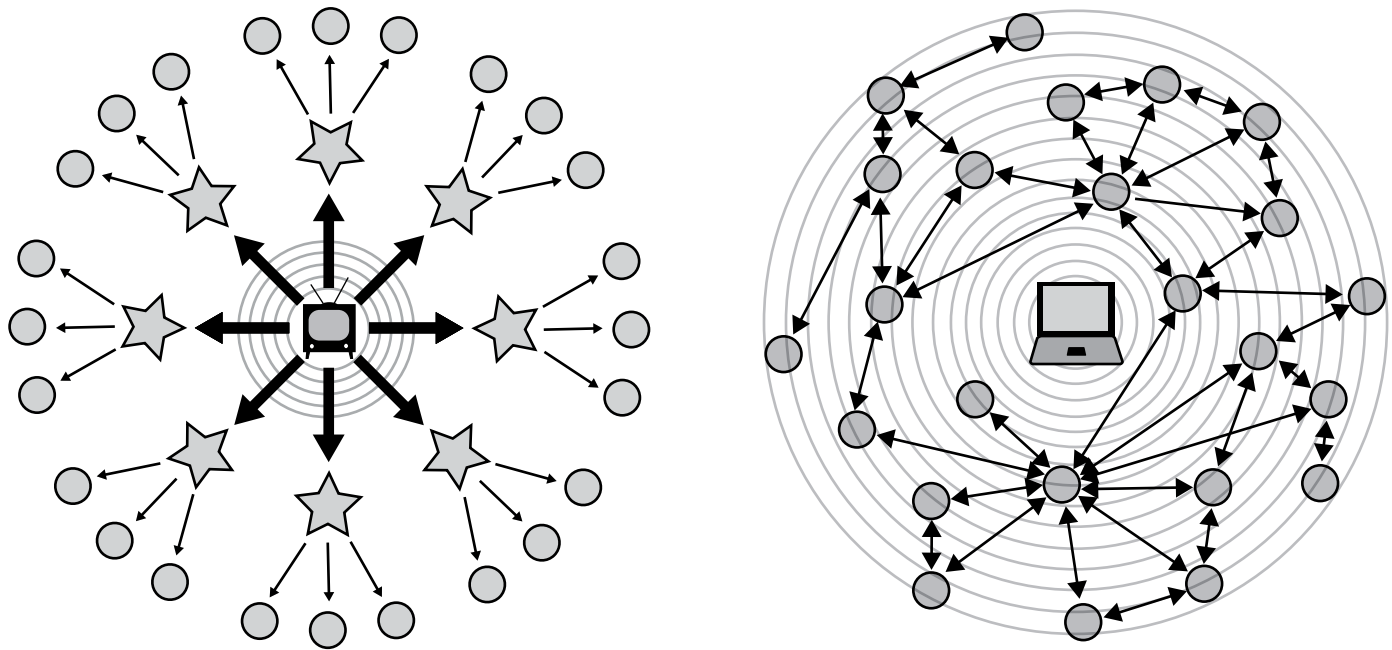While conceding that computer-based simulations and models simplify

Figure 5.—Left: the two-step flow model of influence; right: the network model of influence.
(Model redrawn from "Influentials, Networks, and Public Opinion," Duncan J. Watts and Peter Sheridan Dodds)

social reality and that influentials can be important in some cases, Watts questions the whole "received wisdom" of influentials starting "social epidemics":

> For a social epidemic to occur, however, each person so affected must then influence his or her own acquaintances, who must in turn influence theirs, and so on; and just how many others pay attention to each of these people has little to do with the initial influential. If people in the network just two degrees removed from the initial influential prove resistant, for example, the cascade of change won't propagate very far or affect many people.[47]

Watts argues that the traditional focus on identifying the characteristics of influential individuals has been misplaced, as the action is really in social networks (figure 5, right diagram). And he takes a swipe at the iconic incendiary match that Gladwell uses as a symbol for the little thing that can make a big difference.

Some forest fires, for example, are many times larger than average; yet no one would claim that the size of a forest fire can be in any way attributed to the exceptional properties of the spark that ignited it or the size of the tree that was the first to burn. Major forest fires require a conspiracy of [physical circumstances]. Just as for large cascades in social influence networks, when the right global combination of conditions exists, any spark will do; when it does not, none will suffice.[48]

Beyond influentials

With such current research as Watts' challenging easy adherence to models of social change that *depend on* "influentials," what else is there? What secret ingredients can move many people?

Watts, who has directed research for Yahoo, the Web business, suggests that epidemics can arise from large numbers of ordinary people reaching

many others like them through Web-based social networking tools.[49] For his part, Gladwell offers two more ingredients to epidemics. The first he calls the "stickiness factor." Some behaviors, and some messages, *stick*. They become part of you. But why?

Suppose, for example, instead of preventing teens from smoking, one wanted to help a teen quit smoking. Then what? Gladwell takes a chapter to develop the rationale for a particular approach, but much of it is based on research that has described a "smoking personality"—an extrovert characterized by "defiance, sexual precocity, honesty, impulsiveness, indifference to the opinion of others, [and] sensation seeking." As he observes, this is "an almost perfect definition of the kind of person many adolescents are drawn to"[50] and is the mindset that draws such individuals to the cigarette as a symbol of rebellion.

> Over the past decade, the anti-smoking movement . . . has spent untold millions of dollars of public money trying to convince teenagers

> "We spend a lot of time thinking about how to make messages more contagious —how to reach as many people as possible with our products or ideas. But the hard part of communication is often figuring out how to make sure that message doesn't go in one ear and out the other. Stickiness means that a message makes an impact. . . . "

that smoking isn't cool. But that's not the point. Smoking was never cool. *Smokers* are cool.[51]

Kids smoke, then, because people who smoke are cool. Parents can't stop them, at least not easily. Public service announcements can't stop the smokers once they've started—if at all. What health-concerned parents want their teens to avoid, though, is the moment where the habit turns into an addiction. This is the tipping point. When —and more importantly, why— does the habit tip? What's the "stickiness factor" that makes it stick? It's nicotine, of course, in a sufficient quantity.

Gladwell reports research that indicates the nicotine tipping point at about five milligrams, which suggests a logical public health strategy (proposed in a *New England Journal of Medicine* editorial): tobacco companies should be required to reduce the amount of nicotine per cigarette so that the amount even the heaviest smoker would ingest in a 24-hour period would still be below the addiction—the stickiness—threshold.

Rather than wasting a lot of resources trying to prevent teens' experimentation, their attempts to fit in with peers, and their rebellion from the adult world, he argues, effective intervention would focus on establishing this tipping point strategy. In the meantime, armed with the knowledge of the approximate five-milligram

threshold, concerned adults can at least try to limit teens to below this level. In the long run, this tipping point insight, Gladwell argues, may offer an efficient and effective approach to protect teen smokers.

Finally, the context of an event has its own secret power. This "Power of Context" is Gladwell's third determinant in social epidemics. Paul Revere had the qualities of a Connector and a Maven, but the context of his ride— waking people in the middle of the night, Gladwell asserts—made his urgent alarm seem more important to them.

Why *did* the crime rate drop dramatically in New York City in the mid-1990s? Gladwell's thesis is that it was tipped by apparently small changes in the context. He describes the extremely dirty, dangerous, and graffiti-festooned condition of the New York subway system of that era—a highly visible emblem of the failed arteries of civic life. A new director of the subway system was hired and began by doing one thing fiercely: he eliminated graffiti from the subway system, doggedly leading a campaign to paint over it wherever and whenever it occurred. Gladwell quotes the subway director, David Gunn, on his rationale:

> The graffiti was symbolic of the collapse of the system. . . without winning that battle, all the management reforms and physical changes just weren't going to hap-

pen. We were about to put out new trains that were worth about ten million bucks apiece, and unless we did something to protect them, we knew just what would happen. They would last one day and then they would be vandalized.[52]

So Gunn "sent a message," and stuck with it, and with that improvement in physical context, subway crime began to lessen—and from there, the crime problem tipped in the rest of the city.

Of Gladwell's three laws, the Power of Context may be the most difficult to see, perhaps because of a kind of figure-ground perceptual difficulty. That is, most often our habitual attention goes to the foreground figure—the apparent influence of a person or a text, for instance—not the ground, the context or "environment" of communication.

Social marketing

Seeing a broader environment or context in which social change plays out is one of the underlying strengths of community-based social marketing, an approach to persuasive communication that has gained many adherents. The formula is straightforward:

> Community-based social marketing involves four steps: (1) Identifying the barriers and benefits to an activity, (2) Developing a strategy that utilizes "tools" that have been shown to be effective in changing

behavior, (3) Piloting the strategy, and (4) Evaluating the strategy once it has been implemented across a community.[53]

The foundation of social marketing is understanding the audience's barriers to engaging in a proposed activity.[54] Such a premise is clearly supported by the mainstream of research described here.

However, before the social-marketing team gets too busy with that task of understanding the barriers and benefits, McKenzie-Mohr insists on clarifying what the community is to be asked to do. He argues that the "mandate" ought to be detailed and specific ("curbside recycling") rather than general ("waste reduction"). Such clarification can happen at the outset, perhaps in a "top-down" way, from community leaders. But it seems likely that, at least in some instances, proponents of an activity won't be able to define the specific activity that is desirable and achievable until they've done a "bottom-up" inquiry with community members.

In fact, community-based social marketing includes bottom-up inquiry among its three steps to identify barriers and benefits: (1) review relevant articles and reports, (2) obtain qualitative information through focus groups and observation to explore in-depth the attitudes and behavior of the community regarding the activity, and (3) conduct a survey with a random sample of the community, to get the broader, independent perspective that the smaller focus groups can't provide.

To this point, the audience research methods of community-based social marketing are not a departure from standard approaches. The marketing stage that comes next *is*. In social marketing, "target audience members are conceptualized as consumers, and marketers are conceptualized as agents seeking to develop and deliver an "offer" (i.e., a product or service, or alternatively, a "bundle of benefits") that members of the target market will be willing to purchase (i.e., incur costs—money, time, effort, self-image —to acquire)."[55] In this dynamic, the social marketer has concluded what is in the audience's best interests. This stance is different from the nonpersuasive communicator, for example.

McKenzie-Mohr and others have assembled a kit of conceptual "tools of behavior change" that are used in social marketing; the tools have been sharpened by social science research. As the tool kit is detailed and readily available elsewhere (see www.cbsm. com), no elaboration is required here, other than a simple listing of some uses the tools are put to:

- asking people to make a commitment to undertake the behavior

- providing vivid, meaningful procedural information about the action

- reminding people of the ways the action conforms to their view of themselves

- advertising appropriate social norms that complement the behavior

- providing feedback on the progress being made based on the number of people conducting the action

- profiling success stories and opinion leaders who have adopted the behavior[56]

As a comparatively new strategy, community-based social marketing has not been subject to very many long-term studies of its effectiveness over time. Do community members who "buy into" a particular behavior stick with it? When this happens, why does it happen? Is it the result of the initial marketing, some other factor, or a combination of factors? Social marketing deserves this sort of ongoing evaluation—as do all other approaches discussed in this essay. Professional communicators and other community-oriented practitioners should look for such evaluations and consider conducting them themselves.

Communicating about science and technology topics is difficult enough; if the communication is also offering or trying to influence a behavior change, the task is greater still. This is especially true if the behavior to be changed evokes resistance from standard American values such as independence, freedom of choice, or per-

Endnotes

sonal security. Social science reminds communicators that while they earnestly develop texts, and hope to influence change, it's always wise to keep the exact social context in mind.

Expand your view:

1. Social marketing has gained adherents at least in part because it can affect public behavior, and it's probable that its success results from recognizing the public's barriers to acting in a desired way. However, social marketing may not be a suitable approach for those who have serious reservations about their role as persuaders.

2. At a tipping point, an idea, trend, or social behavior crosses a threshold. While research questions longstanding beliefs about the power of influentials in moving group opinion, communicators should look for opportunities to test Gladwell's three laws of influence: the law of the few; the stickiness factor, and the power of context.

[1] Azjen 1992, p. 1.

[2] Fishbein and Yzer 2003.

[3] Ajzen 1985.

[4] Fishbein and Yzer 2003, p. 169.

[5] Cappella 2006, p. 268.

[6] Simon 1978.

[7] Ajzen 1992, p. 7.

[8] Ibid, p. 9.

[9] Petty et al 1983.

[10] *The Importance of Being Earnest*, act 1.

[11] Ajzen 1992, p. 11.

[12] Wilson 2004, p. 17.7.

[13] Wilson 2002.

[14] Morgan et al. 2002.

[15] Fischhoff 2007, p. 7.

[16] Downs 2004.

[17] Ibid, p. 1563.

[18] Falk 2005, p. 269.

[19] Ibid.

[20] Falk, J. H. and L. D. Dierking (2002), *Lessons without Limit: How free-choice learning is transforming education*. Walnut Creek, CA: AltaMira Press.

[21] Falk 2005, p. 272.

[22] Ibid.

[23] Summarized from the list of three presented by Ken Wilber, *Integral Psychology* (Boston: Shambala 2000), p. 163.

[24] Rowe 2004.

[25] Maibach et al. 2007.

[26] Abroms and Maibach 2008.

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[27] Sly 2001, p. 234.

[28] Ibid, p. 233.

[29] Ibid, p. 235.

[30] Ibid, p. 233.

[31] The Citizens' Commission to Protect the Truth.

[32] www.protectthetruth.org/truthcampaign.htm

[33] From a review by the Communication Initiative Network of "Evaluating the truth® Brand," by W. Douglas Evans, Simani Price, and Steven Blahut, *Journal of Health Communication* 10 (2), 181–192, March 2005. www.comminit.com/en/node/72164

[34] As the framework was introduced in 2007, it will be interesting to see how it is used and expanded, including by other researchers and practitioners.

[35] Rogers 2004, p. 13.

[36] Ibid, p. 15.

[37] Ibid, p. 17.

[38] Ibid, p. 19.

[39] Rogers

[40] Gladwell 2002, p. 7.

[41] Ibid, p. 257.

[42] Ibid, p. 67.

[43] Ibid, p. 83.

[44] Criticism that Gladwell's "rhetoric" may get ahead of and, on occasion, too selectively present the science, has been made. For example, see Lauchlan Mackinnon, Book Review: *The Tipping Point* by Malcom Gladwell (Part III), Think Differently!! Blog, www.think-differently.org/2007/03/book-review-tipping-point-by-malcom_04.html. (accessed 7/5/08).

[45] Watts and Dodd 2007b, p. 442.

[46] Ibid, p. 441.

[47] Watts 2007a, p. 23.

[48] Watts and Dodd 2007b, p. 454.

[49] Watts 2007a, p. 24.

[50] Gladwell, p. 232.

[51] Ibid, p. 233.

[52] Ibid, p. 142.

[53] McKenzie-Mohr 2000b, p. 1.

[54] McKenzie-Mohr 2000a, p. 546.

[55] Dearing et al. 2006, p. 3.

[56] Monroe 2003, p. 120.

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