Chapter 2
Thinking about Behavior

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One woman sorts household waste for recycling; the other throws it into a garbage container bound for the landfill. Why?

Do non-recyclers need more information in order to recycle? Do they need a monetary incentive? Or do they simply not understand the link between trash and groundwater quality? Are recyclers motivated by the wisdom from frugal grandparents, or peer pressure from their neighbors?

If you are in charge of a recycling program, you will think long and hard about these two behaviors. This chapter is meant to guide thinking about recycling—or any other activity to improve the environment—toward an effective and efficient program.

For years, communicators have tried to identify the factors that determine behavior (determinants of behavior) to explain why people behave differently. A variety of theories have been proposed, but no one model explains all human behavior.

Why does one woman recycle when the other doesn't? Perhaps one woman perceives the "cost" of recycling (in time, convenience, or space) to be inconsequential, while the other finds it overwhelming. Or perhaps the recycler gets support for her efforts from people she values—family, neighbors, or community leaders—while the non-recycler does not. Maybe the recycler is willing to take the time, effort, and space to do something she believes to be right, but the non-recycler does not have that discipline. These three broad categories—external barriers, social personal norms, and personal values—form the basis for considering a variety of determinants of behavior.

Since in the real world these categories overlap and interact in patterns that vary from person to person, issue to issue, and place to place, it is not practical to defend one "best" theoretical model for developing behavior-change programs. In this chapter a variety of theories that explain different facets of behavior will provide us with a "mosaic model" to use in designing EE&C programs.

The design of any activity should include the basic steps outlined in Chapters 6–9, beginning with the needs assessment and formative research phases. But to ask the right questions and to then build a program that will address the most important determinants of behavior, start with this simple question: "Why do you do that?"

FOCUSING ON BEHAVIORS

Successful EE&C focuses on behaviors for several reasons:

1. *The behaviors of individuals have environmental repercussions.*

To change the state of our environment, we must learn how to encourage individual behaviors that are environmentally sound and alter those that are damaging to the environment.

2. *Awareness that an environmental problem exists does not necessarily lead to behavior to fix the problem—as we saw with our two women above.*

Often, EE&C interventions focus only on developing awareness about environmental problems. But awareness is only a first step. Awareness that forests are diminishing does not get enough forest users to adopt appropriate silviculture practices or to reduce the consumption of firewood. Awareness that sea turtles are diminishing does not convince enough people to harvest fewer sea-turtle eggs.

Many factors other than awareness influence behavior, and those factors must be understood. An analysis of the behaviors that individuals currently perform, both beneficial and detrimental to the environment, is the starting point to understanding which programs should be supported and which changed.

3. *Adopting this behavioral approach makes EE&C activities more focused and targeted, and ultimately more effective.*

Resource users know best how rapidly their resources are diminishing. But they may not have the ability to correct the problem—they may need alternative specific behaviors, training in the skills to perform these behaviors, and then the opportunities to use them. Identifying the effective alternative behaviors will help identify the skills and training they need. For example, an Andean program attempting to stabilize agriculture and prevent encroachment into forest areas suggested that farmers limit burning when preparing the ground for cultivation. Farmers knew that biodiversity was affected by clearing more land and understood the importance of burning only the land they intended to plant. But they needed the skills to burn small patches of land in a controlled manner; skills such as opening fire breaks and burning into the wind. Training in these skills then supports environmentally friendly behaviors.

4. *EE&C techniques work well in involving multiple stakeholders—organizations, agencies or individuals.*

For example, urban waste collection involves several stakeholders: waste generators, waste handlers, waste disposers, neighborhood associations, government technicians, elected local and central government officials, and residents. The solution to waste-collection problems needs to involve all these actors. Residents, for example, need to recycle, to reduce the amount of waste transported from the neighborhoods to the landfill. Neighborhood associations need to promote recycling and help households transport their waste to a central collection point. This may require hiring waste collectors and charging for services provided to households. Drivers of municipal garbage trucks need to keep good records for their vehicles in order to prevent vehicle breakdown and avoid service disruption. Elected municipal officials need to obtain funds to increase staff assigned to waste collection. Identifying behaviors of each stakeholder helps to define action plans and distribute responsibilities accordingly.

WHAT IS A BEHAVIOR?

Behavior is what people do. People perform a host of environmentally appropriate and inappropriate behaviors everyday.

GreenCOM defines behavior as a single, observable action performed by an individual. Although the behavior may be performed by habit, it could also be the outcome of a conscious decision. *Behaviors* are distinguished from *practices*, which are a series of related behaviors. For example, recycling solid waste is an environmental practice that can be broken down into many, separate, observable, and measurable behaviors:

- Separating glass, cans, paper and organic material into different containers
- Cleaning, tying or preparing recyclables for pick-up
- Storing recyclables in appropriate containers prior to pick-up
- Putting recyclables on the curb on appropriate days for pick-up

Correct agro-chemical use is another environmental *practice*, made of separate, observable, measurable *behaviors*. Behaviors associated with the use of Pesticide X may include:

- Storing Pesticide X out of the reach of children and animals
- Using the correct amount of water to mix the pesticide
- Wearing shoes that cover the foot while mixing pesticide
- Wearing shoes that cover the foot while applying pesticide
- Applying Pesticide X only when there is no wind

When defining a behavior, Ajzen and Fishbein (1980) have suggested that behaviors have four distinct elements: action, target, context and time.

The *action element* is the easiest to understand because actions are associated with verbs. In the previous list concerning pesticides, the actions were *store, use, wear,* and *apply*. In another example regarding a project to restrict beach use in a protected area during turtle nesting season, *patrolling* the beach in a wildlife refuge to prevent poaching is different from *reporting* violators of beach boundaries. Both behaviors relate to protected area management, but they are different behaviors.

The *target element* of behavior refers to the person or group affected by the action. Continuing with the beach protected area example: reporting cousins, grandfathers, or daughters is different from reporting unrelated violators. When the target changes, so does the behavior.

With respect to *context*, reporting violators of beach boundaries to the police is different from reporting them to a village oversight committee. Context refers to how the action is done.

The *time element* of behavior implies that patrolling the beach during the night or on weekends is a different behavior from patrolling the beach during the day or workdays.

These four elements of behavior may be helpful in specifying the behaviors that should be targeted in an education or communication project. For example, turtle-egg poachers may engage in a number of poaching behaviors that are relatively different from each other and may require vastly different messages or techniques to alter. Consider the following:

- Poachers extract eggs from a beach in a protected area
- Poachers extract eggs from an unprotected beach
- Poachers extract eggs from sections of a beach where eggs are likely to be eaten by natural predators
- Poachers extract eggs from a beach likely to be eroded away
- Poachers extract eggs from a beach regularly trampled by cattle
- Poachers take eggs laid during an *arrivada**

Each one of these behaviors may have different environmental impacts, different rationales, and different predictors.

Defining specific behaviors is the crucial first step for planning an education or communication program. Without specific behaviors, a message campaign on conserving fuelwood would easily become mired in confusion and excuses for both the message recipient and the campaign planner. "Who should conserve fuelwood?" someone might think. "Certainly I'm not the problem, since I only boil water in the morning." "Should the campaign focus on the type of stove?" a planner will wonder. "Why doesn't information about tree growth rates translate into fuel conservation?" foresters will ask. A specific behavior helps focus the activity on the audience and the context for the behavior.

On the other hand, environmental issues are associated with so many specific behaviors that it may be helpful to group them into categories and seek common or underlying behaviors that could form the focus of an educational or communication program.

ENVIRONMENTALLY FRIENDLY AND UNFRIENDLY BEHAVIORS

Education and communication programs may develop different strategies for helping people begin or strengthen environmentally friendly behaviors, or stop environmentally unfriendly behaviors. Each strategy may require a different set of motivators, depending upon the context. The examples of recycling behaviors discussed earlier are illustrations of environmentally friendly behaviors, while egg poaching is an environmentally unfriendly behavior.

Pollution, illegal logging, illegal fishing, and destructive farming methods are only a few of the common problems confronted by environmentalists

*"*Arrivada*" is a term used in Central America for massive arrivals of nesting sea turtles to select beaches. These events occur from July to January. Olive ridley sea turtles are one of the few species that nest in this manner.

and environmental educators. Unfortunately, these unfriendly behaviors often have short-term economic and political payoffs that encourage people to continue. Indeed, people don't do things without a reason. Additional measures may be necessary to stop or change them, such as legislation and enforcement. Most evidence shows that enforcement is much easier if accompanied by an appropriate education campaign to explain the need for the new legislation.

A thorough needs assessment can determine whether EE&C strategies should focus on environmentally unfriendly behaviors, and can suggest strategies to support the transition from damaging to friendly behaviors. Usually a satisfactory alternative must be offered to provide the target audience with the food or finances they obtain. Offers of opportunities to experiment with new techniques for growing food or preventing pollution may generate an outpouring of creative problem solving.

CRITERIA FOR SELECTING FEASIBLE BEHAVIORS

EE&C programs can seek to address an enormous number of specific behaviors. Not only could this be time-consuming and inefficient, but also some behaviors may be better suited to intervention than others. GreenCOM has developed a set of criteria to help select and prioritize "feasible" behaviors to include in EE&C interventions. This scale has been adapted from the health field (Graeff, Elder and Booth, 1993; Green, Kreuter, Deeds and Partridge, 1980) and is supplemented by the work of Ray DeYoung in the field of conservation behavior (1993). More guidelines for defining these target behaviors can be found in Chapter 7.

Potential for Impact on the Problem

Prior to launching an EE&C intervention, ask yourself whether the behaviors to be promoted make sense technically. For example, for farmers to make a living in arid areas, appropriate irrigation practices are crucial. Although night irrigation is often suggested as a solution, studies from some desert countries show that irrigating at night may not save as much water as other, more feasible options. So, selecting the behaviors that make technical sense is important. It is difficult to rebuild credibility if the previous campaign was technically incorrect.

Sometimes, a group of technicians may not agree on the "best" behavior or environmental solution. In these cases, you need to field test solutions in relevant and appropriate settings. Water conservation techniques in the United States may not conserve water in Jordan, because water pressure may be reduced, or other elements in the system are different. Evidence from field trials is essential to decide on appropriate behaviors.

Exploring solutions from the technical perspective also implies that every relevant arena should be considered. Most environmental issues are connected to other problems; so one particular solution may create more problems. Before choosing a behavior, determine if that behavior might have negative consequences in other areas. For example, in El Salvador a behavior that environmentalists considered appropriate was "heating the family's food only once a day." This practice would limit the amount of firewood consumed and reduce deforestation. However, reheating children's food immediately before consumption is necessary to reduce the contamination that causes infant diarrhea. Although once-a-day-cooking would have a positive impact on deforestation, this behavior could have a devastating effect on infant health.

Immediate and Obvious Consequences for Behaviors

Behaviors that have immediate positive consequences or bring tangible benefits are likely to be adopted more easily than those that generate distant benefits. For example, families who conserve water may perceive the immediate consequence of a lower water bill. It would be more difficult for families with their own well to perceive the effects of water conservation at the end of the month. By

the same token, supporting fish hatcheries that stock fish for sportfishing is an easier behavior for fishermen than supporting legislation that improves fish habitat.

Similarly, while environmentally unfriendly behaviors may be stopped if appropriate sanctions are defined, made public, and enforced; it may be easier and more effective to substitute an environmentally friendly behavior than to completely eradicate an unfriendly one.

People like to get quick feedback from their behavior. Programs that seek changes for long-term, far-away, tenuous benefits (e.g., reducing automobile use to prevent global climate change) are less successful than programs that provide economic or health benefits within a year. Consider choosing behaviors that offer feedback mechanisms, or designing proxies for feedback that will encourage a similar behavior (e.g., car exhaust testing to curb air pollution).

Compatibility With Cultural Norms or Current Practices

Behaviors proposed also need to make socio-cultural sense. For example, in many cultures, high consumption of electricity and water is an acceptable social norm, especially among the middle and upper classes. People feel that they have worked hard to obtained their income and deserve to consume all the resources they can afford. They may construe conserving electricity and water as incompatible with their socio-cultural norms.

Cost: Time, Money, and Effort

Avoid behaviors that are costly for target audiences. Cost may be measured in terms of time, money, and effort.

Recycling, for example, could have a high cost in terms of time—sorting, storing, bagging and disposing of waste. In this case, other ways for reducing the time demands need to be identified.

The behaviors chosen also need to make financial sense. For example, residents may refuse to recycle waste if the municipal program requires them to forego the income they would have received by selling materials to scavengers. Consequently, organizing a recycling program with scavengers (an existing recycling program of sorts) may be more acceptable than organizing one with municipal waste collectors. Either way, recycling happens, but the scavenger approach is more attractive to the public and therefore gets more cooperation.

Complexity: Keep it Simple

Proposed behaviors need to be simple. Participants may need to break them into elements or steps to learn or practice the skills one at a time. For example, many of the behaviors required for sustainable agriculture, such as contour farming, live fences, composting, and crop rotation, are much more complex than those performed with slash-and-burn agriculture. Adopting these new practices will require a significant commitment by traditional farmers.

Generality: One Thing Leads to Another

Often, one behavior change will lead to another. It may be easy for people to generalize from conserving water in the household garden to conserving bath water. However, it is not generally accepted that people generalize from one *issue* to another (successfully conserving energy doesn't lead to reducing waste). Whether one behavior leads to another depends on which behaviors are chosen, and how behavior change information is presented.

Durability

Some behaviors "stick" better than others. If an education or communication campaign succeeds in changing a certain behavior, one would hope that it is durable to the extent that, even after the program is over, people will continue to perform the behavior. Clearly, durability is also a function of changes in the community, the environment, the

communication message, the feedback system, and in a variety of other dimensions. Encouraging these supportive changes is the mark of a successful, durable, program.

Individual Versus Group Behaviors

Individuals can perform some environmental behaviors in the privacy of their homes, such as installing faucet flow restrictors to conserve water, or insulating their home to conserve energy. A program to introduce and support these behaviors would be aimed at homeowners; and appropriate feedback mechanisms could be directed at them.

Other environmental conditions require that a *group* of people perform a behavior in order to see real change, such as clean-up of a waterway, consumer boycotts, or an awareness parade. A program to stimulate group behavior would be designed differently from one aimed at individual behavior, with appropriate feedback to reflect the group effect.

INVOLVEMENT OF STAKEHOLDERS IN THE SELECTION OF TARGET BEHAVIORS

Because behaviors targeted through an EE&C intervention should be not only technically sound but also socially, culturally and economically viable, the stakeholders—the beneficiaries of those interventions—need to be involved in selecting those behaviors. They can be asked about the extent to which technically appropriate behaviors can be adopted. They can also be observed and then asked to explain why they perform some behaviors and not others. Or, they can help decide in group discussion with other stakeholders (e.g., technicians), which behaviors are appropriate for an EE&C program to target.

CONTRASTING BETWEEN PERFORMERS AND NONPERFORMERS

This is where we started, with two women, one a recycler, the other not a recycler. Barriers and enabling factors influence the adoption of behaviors. These determinants may be either external or internal to the individuals, and are easier to identify when comparing information from individuals performing the targeted behaviors to those who do not.

Individuals performing these behaviors may be at different stages along a behavior performance continuum. Prochaska and DiClemente (1983) have suggested that there may be five such stages: Pre-contemplation, contemplation, action, maintenance, and advocacy (see Table 2.1).

Individuals at any stage may be motivated to move to the next stage by a message unique to that stage. Thus, a message to insure maintenance behavior will be different from a message designed to promote contemplation. Rather than appealing to the experimental nature of trying something new, maintenance messages should strengthen existing positive consequences by eliminating or changing negative consequences or by reminding individuals of important information that reinforces their behavior (Graeff, Elder, and Booth, 1993).

Table 2.1 Stages of Behavior Performance

Name of the Stage	Description
Pre-contemplation	Not considering or not knowing about an environmentally friendly behavior, or actually engaging in an environmentally unfriendly behavior such as dynamite fishing.
Contemplation	Beginning to think about adopting to changing to an environmentally friendly behavior.
Action	Trying out an environmentally friendly behavior.
Maintenance	Making the adopted environmentally friendly behavior a customary practice.
Advocacy	Multiplying the behavior by encouraging others to do the same.

What real barriers stand in the way of people adopting this new behavior? These are external determinants.

Not only do individuals move along a continuum of awareness and willingness to perform a behavior, but so do populations (Muth and Hendee, 1980). As more people shift from contemplation to action, for example, it becomes easier for others to move because the social norm changes toward accepting the behavior.

MAKING IT POSSIBLE BY MAKING IT EASY: REDUCING BARRIERS

When social marketers take on a communication challenge, they often first consider the context of the behavior. What real barriers stand in the way of people adopting this new behavior? (First and foremost, the behavior must be *possible*.) These are *external determinants*—factors that affect performance of the behavior that are external to the individual. If recycling is not available in the municipality, it does little good to promote recycling behaviors. In comparing recyclers to others, some external determinants might be more obvious: Do recyclers live closer to the recycling center? Do they have a higher income, fewer children, or a flexible schedule that allows them to run errands when the center is open? Thus, all the elements that come into play when the behavior is performed are potential opportunities for the social marketer to alter.

A message could emphasize that the recycling center now stays open longer, or that new containers make storage of sorted recyclables easier. If time and convenience are the major barriers to recycling, the communicator might advocate a message that changes the perception of these determinants, such as, "it's not so hard; kids do it."

Clearly, the initial research to understand the audience and their context would need to cover questions that reveal their perception of barriers, the reality of barriers, and the incentives that motivate people (Kotler and Roberto, 1989).

Knowledge and Information

A common myth is that people don't behave appropriately because they don't know better, and therefore information is the cure for changing behavior. If you give people the facts that excess garbage can pollute groundwater, that rapid deforestation increases soil erosion, or that fishing with dynamite destroys coral reefs, they will correct their environmentally destructive behaviors. Clinging to this myth actually limits our efforts to change behaviors or provide the skills needed to perform the appropriate behavior. Providing information must be just part of a larger strategy.

Obviously, information is necessary, though not sufficient. A study in Ann Arbor, Michigan comparing recyclers to non-recyclers revealed that both groups were equally knowledgeable about the status of the local landfill, both cared about their garbage and their future quality of life, yet the non-recyclers were stumped by the procedural details of the recycling process (De Young, 1988–1989). They weren't sure how to package their newspapers or whether to take the labels off the tin cans. Information was the key to converting them to recycling behavior, but it was only the procedural information, spelling out the skills involved each step of the way. Some people define this type of knowledge as building the skills required to perform the behavior.

Similarly, a complicated recycling pickup schedule in the Municipality of Quito, Ecuador was found to affect compliance. A different type of waste was collected every day: organic kitchen waste on Mondays, Wednesdays and Fridays; recyclable paper, cans, and glass were collected on Tuesdays; and bathroom waste was collected on Thursdays. Neighborhood residents who could not articulate the schedule could not follow it, either. Some residents found the rules for recycling plastic so difficult that they did not recycle plastic at all.

Knowledge of the *consequences* of action or inaction is another type of information that could be a separate determinant and is often closely aligned with attitudes about the future.

Information can be conveyed in the form of prompts, reminding people to turn off the lights as they leave a room or to fill their gas tank after sunset on high-ozone days (Stern and Oskamp, 1987).

Humans are social organisms. We live in communities. We identify with groups. And we care about what other people think.

Prompts tend to be helpful only if well worded and well placed. Their reliability declines as they lose novelty and the new behavior tends to revert to the old behavior once the prompt is removed (DeYoung, 1993).

Confidence and Perceptions of Self Competency

Bandura (1977) defines perceived self-efficacy as the judgements that one may have about one's capabilities "to organize and execute courses of action required to attain designated types of performances." He is simply talking about people's confidence to act. He adds that people who perceive themselves as highly efficacious will act, think and feel differently from those who do not. According to this theory, perceptions of self-efficacy to successfully execute a desired behavior, as well as the positive and negative outcome expectancies of that behavior, are the key determinants of behavior and, consequently, the keys to behavior change.

Mastery of a skill by observation will lead to a perception of self-efficacy. A person seeing similar people successfully perform a given behavior may believe that he or she can also do that, thus enhancing a perception of self-efficacy. Verbal persuasion can be used to make people believe that they possess capabilities that will allow them to achieve certain objectives.

Mastery of a skill by practice is the most influential source of self-efficacy information. So, opportunities that permit skill enhancement through guided practice and corrective feedback are the mark of effective behavior-change programs. Depending on the behaviors targeted by an EE&C intervention, the promotion of environmentally friendly behaviors may require the development and/or the enhancement of appropriate skills. Farmers may not use agro-chemicals appropriately because they lack appropriate skills to do so. Mastery of skills associated with appropriate agro-chemical use will lead to perceptions of self-efficacy, which in turn will help farmers perform new behaviors. Self-efficacy may generalize to other situations, particularly those that are most similar to the one where self-efficacy was enhanced (Bandura, 1986).

Perceptions About Outcomes

According to Ajzen and Fishbein's Theory of Reasoned Action (1980), an important determinant of behavior is *attitudes*, and attitudes are a function of a *person's salient beliefs about the consequences of a behavior* and the person's evaluation of those consequences. Salient beliefs are top-of-the-mind beliefs about those consequences. The more one believes that performing the behavior will lead to positive consequences the more favorable the person's attitude. Conversely, the more a person believes that performing a behavior will lead to negative consequences (or prevent positive consequences), the more negative the attitude. Individuals will perform behaviors about which they have positive attitudes and avoid those about which they have negative attitudes.

Examples of positive consequences of a behavior include: obtaining fuel wood for cooking meals for the family, obtaining medicinal plants from a forest to cure a family member who is ill, participating in a recycling program to set a good example for the children. Examples of negative consequences of a behavior include: having to pay a fine for disposing of garbage in an illegal dumpsite or having to face social criticism from important others because of reporting relatives whom have violated a fish sanctuary.

Social Pressures

Humans are social organisms. We live in communities. We identify with groups. And we care about what other people think. In some important ways, each of us wants to belong to a group. In some other important ways, each of us may be willing, at certain times in our lives, to step away from the group and do something different. The tension between fitting in and being unique is hard to pre-

dict and will vary from individual to individual. Nevertheless, this continuum represents an important set of determinants of behavior.

Since humans care about what others think, EE&C programs can be designed to use the power of social pressure to help change behaviors. The act of making a commitment, such as signing a pledge, has been shown to be an effective strategy to call upon this type of human response to the perceptions of others. Participants are quite likely to make their word good and continue the changed behavior (Katzev, 1986; Stern and Aronson, 1984).

Education and communication programs can use social norms to their advantage. When a mayor offers to personally congratulate the apartment dwellers that achieved the greatest reduction in their energy usage, residents take pride and other citizens take notice. When movie stars promote certain eating habits, their fans might join them (Monroe and DeYoung, 1994).

SUMMARY

Human behavior is a key element that both contributes to, and helps resolve, environmental problems. Building a behavioral element into EE&C programs requires that programmers work closely with the people involved to choose the appropriate behaviors on which to focus.

A variety of determinants help create and support behavior, so a vast collection of motivators and messages may be available to inform and change behavior. Experience in both health and conservation behaviors indicates that simple, individual behaviors (turn off lights, recycle newspapers) that result in direct and immediate consequences (reduced electricity bills, reduced garbage costs) are the easiest to change. Complex, group-based, long-term behaviors are harder to change. Yet our environmental problems require that we continue to teach and support environmentally appropriate behaviors that may not have immediate rewards. The degree to which EE&C programs can use the whole range of motivators and generate their own feedback systems will be a key to success in changing behavior.

In this way, we can reinforce the woman who recycles, and understand how to motivate the other woman to become a recycler too.

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