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**The Power of Self-Persuasion**

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In contrast with traditional, direct techniques of persuasion (advertising, political rhetoric, etc.), self-persuasion is indirect and entails placing people in situations where they are motivated to persuade themselves to change their own attitudes or behavior. We find that where important attitudes, behavior, or lifestyle changes are concerned, self-persuasion strategies produce more powerful and more long-lasting effects than do direct techniques of persuasion. This is primarily due to the fact that in direct persuasion, members of an audience are constantly aware of the fact that someone is trying (or has tried) to influence them. In a self-persuasion situation, people are convinced that the motivation for change comes from within. In the present address, the author reviews a range of his research on self-persuasion and underscores its relevance to current societal problems.

Receiving an award for a lifetime of scientific dabbling provides me with a powerful impetus (as well as a wonderful excuse) to look over my shoulder, as it were, at some 40 years of my own experiments to see what unifying principles may have guided that activity. Alas, I am forced to admit that when I scan the list of publications on my curriculum vitae, I encounter well over 100 experiments on a hodgepodge of topics, experiments apparently performed by a person who was hell-bent on following his nose wherever it might lead him: into such diverse areas as perceptual rigidity, achievement motivation, graphic expression, communication and persuasion, interpersonal attraction, fatigue, Parkinson's Law, prejudice reduction, dietary preferences of rats, toy preferences of toddlers, AIDS prevention among teenagers, energy and water conservation among adults, and on and on and on.

**Editor's Note**

Elliot Aronson received the Award for Distinguished Scientific Contributions. Award winners are invited to deliver an award address at the APA's annual convention. This award address was delivered at the 107th annual meeting, held August 20–24, 1999, in Boston. Articles based on award addresses are not peer reviewed, as they are the expression of the winners' reflections on the occasion of receiving an award.
However, on closer inspection, if just a few of the outliers are eliminated, there does appear to be a common thread running through the research. This demonstrates either that there is order in the universe or that given the time and inclination, some people can make sense out of just about anything! You will be relieved to learn that it is not my intention to treat you to a discussion of all of the experiments linked by this thread; rather, I will only highlight a few.

The single unifying thread is self-persuasion. What do I mean by self-persuasion? Perhaps it can best be illuminated by contrasting it with more traditional strategies of persuasion. Serious treatises on traditional strategies of persuasion have been around for at least 2,300 years. Eminent social psychologists from Aristotle (trans. 1926) to Carl Hovland (Hovland & Weiss, 1951) have focused their attention on three principal factors: the nature of the message, the characteristics of the communicator, and the characteristics of the audience. Thus, it has been shown that a highly credible communicator will have greater impact on the attitudes of an audience than will a less credible communicator; that a sensible, well-reasoned message will be more effective than one that is less well-reasoned; and that the members of an audience who become emotionally involved with the issue will be most influenced (Cialdini, 1984; Petty & Wegener, 1999; Pratkanis & Aronson, 1992). However, when one looks closely at these data, it becomes clear that the attitude change induced by direct communication is usually small and short-lived, especially when the communication departs radically from the recipient’s original attitude or requires a significant change in lifestyle. For example, communications aimed at persuading smokers to quit smoking, sexually active people to use condoms, or bigoted individuals to reduce their prejudicial attitudes and behaviors have met with minimal success. And that’s when they are listening at all! As researchers have been wisely noting for over 50 years, when faced with a communication that is either boring or runs counter to their own attitudes or beliefs, most people are adept at either tuning out, turning off, or simply refusing to expose themselves to that message (Hyman & Sheatsley, 1947; Pratkanis & Aronson, 1992).

If direct attempts at persuasion typically produce such small effects, why do manufacturers of consumer goods spend vast sums of money advertising their brands? The answer is simple. First, most major brands of consumer products (e.g., toothpaste, soap, lotions, cereal, aspirin, beer) are similar to the brands they are competing against; therefore, in trying to induce people to switch brands, the manufacturer is not requiring a change in lifestyle. If the makers of Crest toothpaste want to influence Colgate users to switchbrands, all that they must persuade the consumers to do is, when reaching for toothpaste at the supermarket, to move their hand just a few inches to the left or right. Moreover, if an advertising campaign for Crest toothpaste, Budweiser beer, or Bayer aspirin succeeds in changing the behavior of a mere three or four percent of potential consumers, it is highly successful. In contrast, to convince three or four percent of the population to use condoms or give up their prejudices does not make much of a dent in our attempt to change dysfunctional behavior.

When it comes to more important decisions, there is a real problem with direct attempts at persuasion; the problem stems from the very fact that they are direct. That is, if the individual is asked to change an important attitude or make a difficult lifestyle change and, while weighing the pros and cons, asks himself or herself, “Now, let’s see, why am I doing this?” he or she has a ready answer and a follow-up question: “Because that pamphlet or TV commercial suggested that I do it. But do I really want to?” It is quite different with self-persuasion. With self-persuasion, the individuals come to believe that they do really want to.

**Self-Persuasion and Cognitive Dissonance**

The theory most associated with the phenomenon of self-persuasion is Leon Festinger’s theory of cognitive dissonance (Aronson, 1999; Festinger, 1957). Briefly, the theory of cognitive dissonance states that dissonance (an unpleasant feeling) is aroused when an individual says or does something that runs counter to his or her own beliefs, especially if this action threatens the individual’s self-concept of being a decent or rational person. To reduce dissonance, people will try to bring those disparate cognitions into greater harmony. In my very first experiment in social psychology, Judson Mills and I got people to volunteer to go through either a severe initiation or a mild initiation to gain admission to a discussion group. The group discussion turned out to be both boring and silly. We found, as predicted, that the individuals who went through the severe initiation succeeded in persuading themselves that the group was more interesting than did people who gained admission to the same group with little or no effort (Aronson & Mills, 1959). Going through a difficult initiation to become a member of a silly, boring discussion group arouses considerable dissonance. If I had gone through this procedure, my cognition that I am a sensible person would be dissonant with my cognition that I had voluntarily gone through hell and high water to gain admission to a silly, boring group. Therefore, to reduce dissonance, I would tend to focus on the positive aspects of the discussion group and to downplay the negative aspects of the group.

A few years later, Merrill Carlsmith and I (Aronson & Carlsmith, 1963) elaborated on the power of self-persuasion by drastically changing children’s preferences for various toys. If your 4-year-old is in love with a particular toy—say a toy gun or a particularly aggressive battery-powered robot—try talking him out of playing with it using a rational argument. Your child is unlikely to fall for it. What about threatening to punish him—will that affect his desire to play?
with the forbidden toy? This is where the scenario becomes interesting. In our experiment, we allowed preschoolers to play with several toys. We then selected one they liked a lot and told them they could play with all the other toys but not with that one. In one condition, we used a rather severe threat to discourage them from playing with the selected toy. In the other condition, we used a threat that was relatively mild; just severe enough to get them to refrain from playing with the toy temporarily.

What does dissonance theory predict? Picture the scene: In the severe threat condition, the children refrain from playing with the attractive toy. They know why they are not playing with it—because that grown-up will punish them severely if they do. They do not require any additional justification. But what about the children in the mild threat condition? Here is where self-persuasion enters the picture. Like the children in the severe threat condition, they are not playing with the forbidden toy, but when they ask themselves why they are not playing with it, their answer is less clear. That is, the situation does not present them with a high level of justification for not playing with the forbidden toy precisely because the threat is such a mild one. Accordingly, they must supply some additional justification on their own, so to speak, by finding additional reasons for their restraint. That is exactly what we found: Children complying in the face of mild threats subsequently convinced themselves that the forbidden toy was less attractive than did those children who were confronted with severe threats.

As one might expect, self-persuasion has staying power. In Freedman's replication of the forbidden toy experiment, some nine weeks after the experimenter issued his mild threat and left the premises, never to return again, the great majority of the children in the mild threat condition refused to play with that toy when left alone in the room. As expected, virtually all the children in the severe threat condition happily played with it. Again, self-persuasion has long-term impact because the children are not being persuaded by a credible or powerful communicator but are persuading themselves.

One of the most powerful paradigms under the rubric of dissonance theory has been referred to as counterattitudinal advocacy, wherein people are induced to try to convince others of the rightness of a position that differs from their own privately held belief. When offered only a minimal reward for doing so, people must seek additional justification for the position they advocated. They accomplish this by persuading themselves that the position they advocated is not really far from their true position; the end result is a shift in attitude away from their original belief. Within this paradigm, the power of self-persuasion has been extended beyond such relatively trivial issues as toy preferences among children. For example, in one of our experiments (Nel, Helmreich, & Aronson, 1969), we recruited people who were opposed to the use of marijuana and induced them to compose and deliver a speech, recorded on audiotape, advocating the use of marijuana. Those in the high-dissonance condition (i.e., those who made the tape for little reward and who were led to believe that the tape would be played to a persuadable audience) experienced a major softening of their negative attitudes toward the use of marijuana. In short, participants in the high-dissonance condition were faced with the undeniable fact that they might be leading their audience to use marijuana. They could justify their action only by persuading themselves that marijuana was not as dangerous as they might have originally believed. Such is the power of self-persuasion.

Hypocrisy and Condom Use

Virtually all of my early experiments showing the power of self-persuasion were part of a basic research program aimed at testing derivations from the theory of cognitive dissonance. Many years later, I became interested in a more practical problem: how to convince sexually active people to use condoms in the face of the AIDS epidemic. Our government has spent hundreds of millions of dollars on AIDS information and prevention campaigns in the mass media. Although these campaigns have been reasonably effective at conveying information, they have not been nearly as successful at preventing people from engaging in risky sexual behavior. For example, although sexually active college students are aware of AIDS as a serious problem and know that condom usage is an excellent protection against AIDS and other sexually transmitted diseases, only a surprisingly small percentage use condoms regularly. The reason for this seems to be that condoms are inconvenient and “unromantic”; they are widely viewed by young adults as interrupting the spontaneity of the romantic encounter.

Moreover, advertising campaigns that attempted to encourage people to use condoms by inducing fear have backfired; the possibility of dying a horrible death is something that most people do not want to be reminded of when getting ready to make love. In situations like this, in which people are frightened, instead of engaging in rational problem-solving behavior they tend to go into denial. Sexually active young people tend to either underestimate their vulnerability (Fisher & Misovich, 1990) or overestimate how much they actually use condoms (Aronson, Adler, & McDougall, 1988). In effect, they are saying, “AIDS is a serious and deadly problem, all right, but not for me!”

These distortions are not easy to counteract, because simply presenting people with actuarial data “proving” vulnerability does not dispel this fallacious thinking (Snyder, 1978). Such reactions may account for otherwise puzzling behavior, such as the commonly reported unprotected sexual behavior among uninfected partners of individuals who have been diagnosed as HIV positive (Weisse, Nesselhof-Kendall, Fleck-Kandath, & Baum, 1990).
How might we overcome the denial mechanism? Needless to say, my initial thought was to find a way to use what we have learned from dissonance theory. That is, instead of trying to convince sexually active young people of the virtues of safe sex through direct rational argument, I thought it would be possible to make an end run around the denial mechanism by applying the counterattitudinal advocacy paradigm: that is, to get people to present an argument favoring condom use. However, I was stopped in my tracks. Counterattitudinal advocacy is not possible in this situation because, as I indicated earlier, sexually active young people already believe that AIDS is a problem, and they already believe that condom use is a good thing—for everyone else, but not for them. That is precisely why denial presents such a difficult problem. Not only are traditional persuasion tactics relatively ineffective, but there is no counterattitude for them to advocate!

I puzzled over this issue for some time until I hit upon the following scenario: Suppose you are a sexually active college student, and, like most, (a) you do not use condoms regularly, and (b) you have managed to blind yourself to the dangers inherent in having unprotected sex. Suppose, on going home for Christmas vacation, you learn that Charley, your 16-year-old kid brother, has just discovered sex and is boasting to you about his many and varied sexual encounters. What do you say to him? Chances are, as a caring, responsible older sibling, you will damn his enthusiasm a bit by warning him about the dangers of AIDS and other sexually transmitted diseases and urge him to at least take proper precautions by using condoms every time he makes love.

Suppose I am a friend of the family who was invited to dinner and who happens to overhear this exchange between you and your kid brother. What if I were to pull you aside and say, “That was very good advice you gave Charley. I’m very proud of you for being so responsible; by the way, how frequently do you use condoms?”

In other words, I am confronting you with your own hypocrisy: I am making you mindful of the fact that you are not practicing what you preach. People have a need to see themselves as a people of integrity. People of integrity practice what they preach. Your self-concept as a person of integrity is threatened by your own behavior, behavior that suggests you might lack integrity because you might be behaving hypocritically. How might you reestablish your self-concept as a person of high integrity? There is only one sure-fire way: by beginning, forthwith, to put into practice what you have just finished preaching. In short, you start using condoms consistently.

In a series of experiments, my students and I constructed a procedure very much like the example mentioned above (Aronson, Fried, & Stone, 1991; Stone, Aronson, Crain, Winslow, & Fried, 1994). Specifically, we induced college students to deliver a convincing speech about the dangers of AIDS in which they implored the audience to use condoms. The speech was videotaped, and the speakers were led to believe that the tape was going to be shown to high school students as part of a sex education class. We then asked the speakers to talk about all of the situations in their day-to-day lives when they found it difficult or impossible to use condoms themselves, thus making them mindful of the fact that they were preaching what they were not practicing.

Confronted with their own hypocrisy, how could they reduce dissonance and reestablish their belief in their own integrity? They could do so exactly like in the hypothetical example: by resolving to change their behavior to bring it into line with their own preaching. The results of these experiments are powerful. Immediately after the experiment, those college students put in the hypocrisy condition, when given the opportunity to buy condoms at a reduced price, purchased substantially more condoms than did students in the control conditions. (The control conditions consisted of students who (a) made the speech without being reminded of their past failures to use condoms or (b) were reminded of their past failures to use condoms but were not required to make a speech.) The long-term effects of the hypocrisy intervention are even more impressive: Three months later, when interviewed on the telephone about their sexual behavior, 92% reported that they were now using condoms regularly. This percentage is almost twice as high as that of participants in the control condition who were not confronted with their own hypocrisy (Stone et al., 1994).

**Hypocrisy, Self-Persuasion, and Water Conservation**

From a methodological perspective, condom research presents a formidable problem: The measurement of the dependent variable cannot be as direct as one would ideally like it to be. As a student of behavior, I would like to be able to observe behavior directly. If I am predicting increased use of condoms, I would like to determine whether participants in the hypocrisy condition are actually using condoms to a greater extent than are participants in the control conditions. Yet, alas, one cannot crawl into bed with participants to see whether they are actually using condoms. In the short term, we had to settle for a surrogate behavioral measure: the purchase of condoms. To test the longevity of the effect, we had to move away from behavior altogether and trust the self-report of the participants in a telephone interview. Our assumption is that their self-reports were inflated somewhat (because of social desirability). At the same time, there is no reason to suspect that these expected inflation did not occur equally in all conditions. Accordingly, we do trust that the differences among conditions are meaningful. At the same time, it sure would be nice to test the hypocrisy hypothesis using direct behavioral data.

Such an opportunity presented itself on our own campus, although the focus was on the issue of water conservation rather than condom use. At the time, central California was suffering through one of its periodic water shortages; the
The campus administration was trying desperately to find ways to induce students to conserve water by taking shorter showers. Direct appeals to the students' values regarding conservation had an effect, but it was a small one. This seemed to be an ideal situation in which to apply the hypocrisy paradigm. We designed an experiment that was directly parallel to the condom experiment described above (Dickerson, Thibodeau, Aronson, & Miller, 1992). Specifically, my research assistant stationed herself in the women's locker room of the field house and intercepted students on their way to the shower room from a workout. As in the condom experiment, in the crucial condition, we first got the participants to commit themselves to the desired activity and then made them mindful of their recent failures to live up to that commitment. Specifically, in the hypocrisy condition, each student was asked to sign a poster encouraging people to conserve water. The flyer read, “Take shorter showers. If I can do it, so can you!” To create a feeling of hypocrisy, we then asked the students to respond to a water conservation “survey,” which consisted of items designed to force them to be aware that their recent showering behavior had been wasteful. In one control condition, the students committed themselves to conserving water by signing the poster (without being made mindful of their past failures); in the other control condition, they were made mindful of their past failures but were not asked to sign the poster.

The students then proceeded to the shower room, where a second research assistant was unobtrusively waiting (with her concealed waterproof stopwatch) to time their showers. The results replicated the pattern of results we obtained in the condom experiment. The students in the hypocrisy condition spent far less time under the shower than did those in the control conditions. Indeed, in the hypocrisy condition, the length of the average shower was just over three and a half minutes—incredibly brief for college students.

Self-Persuasion and Interpersonal Attraction

My research on the power of self-persuasion has not been limited to variations on dissonance phenomena. In the late 1960s, my students and I began to investigate indirect (self-persuasive) antecedents of interpersonal attraction. Several investigators had shown that direct attempts at ingratiation, through flattery or favor-doing, have consistently weak effects. It is clear that most people are aware of being blatantly flattered or “won over” by favors. Although most people seem to enjoy being flattered, and some will actually return the favor, most do not like flatterers or favor-doers very much (Brehm & Cole, 1966; Jones, 1964). The results of these experiments run parallel to the weak effects of direct attempts at persuasion.

In contrast, my students and I obtained much stronger effects by eliminating the possibility of ingratiation or favor-doing by putting people in a variety of different situations where they become motivated to persuade themselves to like a target person. For example, in one experiment (Aronson & Linder, 1965), we placed students in a situation where they surreptitiously overheard themselves being evaluated by a fellow student on a series of occasions. We programmed the situation so that what the student overheard was either (a) a series of entirely positive evaluations; (b) a series of entirely negative evaluations; (c) a series in which the first few evaluations were negative but the following evaluations became increasingly positive, ending in an evaluation that was identical to those in the all-positive condition; or (d) a series in which the first few evaluations were positive but the following evaluations became increasingly negative, ending in an evaluation identical to those in the all-negative condition. The evaluator who was liked the most was the one who showed a gain in his positive evaluation of the target (Condition c); the one who was disliked the most was one who showed a loss in his evaluation of the target person (Condition d). In short, participants convinced themselves that these evaluators were sincere and grew to like (or dislike) them, depending on how these sincere people felt about them.

Self-Persuasion and Prejudice Reduction

Arguably the attitudes and behavior most difficult to change through rational argument are those having to do with ethnic and racial prejudice, because there is a strong emotional component to the attitude (Allport, 1954). Thus, information campaigns are relatively ineffective; so is declaring “National Brotherhood Week.” People are not going to change their cherished prejudices just because someone tells them “it’s not nice” or “it’s not fair.” How might self-persuasion work in this situation?

The first thought that might come to mind is contact. Because prejudice and stereotyping are largely a function of ignorance, it is logical to assume that if people of various races and ethnic groups were brought into close contact with one another, that might lead to a softening of negative attitudes. That was the hope following the Supreme Court decision of 1954 ordering the desegregation of schools. That hope proved futile, though, as the data started rolling in showing no decrease in prejudice following desegregation (Stephan, 1978). Clearly contact, in and of itself, is not enough. Indeed, it has been shown that contact where the status of the minority group is inferior will only serve to exacerbate existing stereotypes (Allport, 1954). Moreover, contact in a highly competitive environment will tend to produce hostile attitudes and behavior even among members of the same ethnic and racial groups (Sherif, 1956). The typical school classroom is just such an environment: a highly competitive place where students vie against one another for good grades and the respect of their teachers. This is hardly an atmosphere that would promote good feelings among students, especially across ethnic and racial boundaries, where a fair amount of prejudice and hostility might already exist.
Indeed, that is exactly what I found in Austin, Texas, when the public schools were desegregated in 1971. Within a few weeks, racial and ethnic suspicion produced an atmosphere of turmoil and hostility, leading to a plethora of interethnic fistfights in corridors and schoolyards across the city. The school superintendent asked me to consult. After observing classrooms for a few days, my students and I concluded that the long-standing racial and ethnic tensions in that city were being exacerbated by the highly competitive nature of the classroom interactions. Don’t get me wrong: Competition, in and of itself, is not an evil. In our country it has produced better mousetraps, motorcars, and microchips. However, our research suggested that in a newly desegregated school, unrelenting competition was providing a formula for disaster.

The diagnosis was straightforward, but how does one change that atmosphere? Our aim was to structure the situation so that students were forced to cooperate rather than compete against one another. To this end, my research assistants and I placed students in small, culturally diverse, independent learning groups. Instead of competing against one another, we structured the learning situation so that the students were required to cooperate—to work in harmony and pay close attention to one another—as the only way they could learn the day’s lesson. We then systematically compared their performance, satisfaction, prejudice toward and liking for one another with that of children in more traditional, competitive classroom situations.

We called our method “the jigsaw classroom” because, as you will see, it works very much like assembling a jigsaw puzzle (Aronson & Patnoe, 1997; Aronson, Stephan, Sikes, Blaney, & Snapp, 1978). An example will clarify: In a fifth-grade classroom the upcoming lesson happened to be a biography of Eleanor Roosevelt. It was our task to translate this assignment into a cooperative enterprise. First, we composed a biography of Mrs. Roosevelt consisting of six paragraphs, the first paragraph being about her life as a young girl, the second paragraph being about her meeting and marrying her cousin Franklin, and so on, with the final paragraph about her work with the United Nations following her years in the White House. Each student in a group was assigned a different paragraph about Mrs. Roosevelt’s life. A given student would have access to the whole biography only if he or she paid close attention to each of his or her groupmates. It was like putting together the pieces of a jigsaw puzzle; they each had one piece of the puzzle, and each was dependent on the other children in the group for the completion of the big picture. To learn about Eleanor Roosevelt’s entire life, each student had to master his or her paragraph and teach it to the others. They were informed that they had a certain amount of time to communicate their knowledge to one another. They were also informed that at the end of the time, they would be tested on their knowledge.

When thrown on their own resources, the children eventually learned to teach and to listen to one another. In addition, they gradually learned that none of them could do well without the aid of each person in the group and that each member had a unique and essential contribution to make. The word eventually is crucial. Cooperative behavior doesn’t happen all at once. Typically, it required several days before the students were able to use this technique effectively. Old habits are difficult to break. The students in our experimental group had grown accustomed to competing during all of their years in school. For the first few days, most of the youngsters tried to compete, even though competitiveness was dysfunctional.

Let me illustrate with an actual example typical of the way the children stumbled toward learning the cooperative process. In one of our groups there was a Mexican American boy I will call Carlos. Carlos was not very articulate in English, his second language. He had learned over the years how to keep quiet in class because frequently, when he had spoken up in the past, he was ridiculed. In this instance, he had a great deal of trouble communicating his paragraph to the other children; he was very uncomfortable about it. He liked the traditional way better. This is not surprising, because, in the system we introduced, Carlos was forced to speak, whereas before he could always deindividualize himself and keep a low profile in the classroom. However, the situation was even more complex than that; it might even be said the teacher and Carlos had entered into a conspiracy, that they were in collusion. Carlos was perfectly willing to be quiet. In the past, the teacher had called on him occasionally; he would stumble, stammer, and fall into an embarrassed silence. Several of his peers would make fun of him. The teacher learned not to call on him anymore. The decision probably came from the purest of intentions: The teacher simply did not want to humiliate him. However, by ignoring him, she had written him off. The implication was that he was not worth bothering with—at least the other kids in the classroom got that message. They believed there was one good reason why the teacher wasn’t calling on Carlos: He was stupid. Indeed, even Carlos began to draw this conclusion. This is part of the dynamic of how desegregation, when coupled with a competitive process, can produce unequal-status contact and can result in even greater enmity between ethnic groups and a loss of self-esteem for members of disadvantaged ethnic minorities.

Let us go back to our six-person group. Carlos, who had to report on Eleanor Roosevelt’s years in the White House, was having a very hard time. He stammered, hesitated, and fidgeted. The other kids in the circle were not very helpful. They knew what to do when a kid stumbles, especially a kid whom they believed to be stupid: They ridiculed him. The groups were being loosely monitored by a research assistant who was floating from...
group to group. Suppose Debbie was observed to say “Aw, you don’t know it, you’re dumb, you’re stupid. You don’t know what you’re doing.” When this incident occurred, our assistant would make one brief intervention: “OK, you can do that if you want to. It might be fun for you, but it’s not going to help you learn about Eleanor Roosevelt’s years in the White House. The exam will take place in 45 minutes.” Notice how the reinforcement contingencies have shifted. No longer does Debbie gain anything from putting Carlos down. In fact, she now stands to lose a great deal. After a few days and several similar experiences, it began to dawn on the students in Carlos’s group that the only way they could learn Carlos’s paragraph was by paying attention to what he had to say. Moreover, they began to develop into pretty good interviewers. Instead of ignoring or ridiculing Carlos when he was having a little trouble communicating, they began asking probing questions—the kinds of questions that made it easier for Carlos to share his knowledge. Carlos began to respond to this treatment by becoming more relaxed; with increased relaxation came even greater improvement in his ability to communicate. The other children started to see things in him they had never seen before. They concluded that Carlos was a lot smarter than they had previously thought. For his part, Carlos began to enjoy school more and began to see the Anglo students in his group not as tormentors but as helpful and responsible people. Moreover, as he began to feel increasingly comfortable in class and started to gain more confidence in himself, his academic performance improved. The vicious cycle had been reversed; the elements that had been causing a downward spiral were changed so that the spiral now began to move upward.

The results of our experiments are clear and consistent. Children in the interdependent, jigsaw classrooms showed less prejudice and greater enjoyment of school (less absenteeism), and they developed greater self-esteem than children in traditional classrooms. In addition, the exam performance of members of ethnic minorities in jigsaw classrooms improved after only 10 weeks, and their scores were significantly higher than those of ethnic minorities in traditional, competitive classrooms.

**Jigsaw and Empathy**

We also have evidence indicating that participation in a jigsaw experience improves the students’ general ability to empathize with others—to see the world through their eyes. Here is the logic: If I am in a jigsaw group with Carlos and want to learn what he knows, not only must I listen attentively to him, but I must also put myself in his shoes to ask him questions in a clear and nonthreatening manner. In the process, I learn a lot not only about the subject and not only about Carlos but also about the process of seeing the world through another person’s eyes.

To test this notion, one of my students (Bridgeman, 1981) showed a sequence of cartoons to 10-year-old children, half of whom had spent eight weeks participating in jigsaw classes. The cartoons were aimed at measuring a child’s ability to empathize. In one cartoon, for example, a little boy looks sad as he says good-bye to his father at the airport. In the next frame, a letter carrier delivers a package to the child. When the boy opens it, he finds a toy airplane and promptly bursts into tears. When Bridgeman asked the children why the little boy cried, almost all of them told her the reason: The airplane reminded the child of being separated from his father, which made him sad. Now for the crucial part: Bridgeman then asked the children what the letter carrier who delivered the package was thinking. Most children that age make a consistent error, based on the egocentric assumption that their own knowledge is universal; specifically, they erroneously assume the letter carrier would know the boy was sad because the gift reminded him of his father leaving. The responses of the children who had participated in the jigsaw classes followed a different pattern, however. Because of their jigsaw experience, they were better able to take the letter carrier’s perspective; they knew that he was not privy to the same information they were and that he wasn’t aware of the scene at the airport. Accordingly, the jigsaw children realized the letter carrier would experience confusion at the sight of a little boy crying over receiving a nice present. Offhand, this might not seem like very much. After all, it is only the ability to figure out what is in the letter carrier’s mind. However, I believe that the extent to which children can develop the ability to put themselves in the shoes of another may have profound implications for empathy, prejudice, aggression, and interpersonal relations in general.

Severa l subsequent experiments indicated that the jigsaw method’s effectiveness at reducing prejudice and building empathy is not limited to young children. In one such experiment, Donna Desforges and her colleagues (1991) had college students interact with a confederate who was portrayed as a former mental patient. The students were led to expect the “former mental patient” to behave in a rather weird manner. The interactions were part of a structured learning situation, with some of the students interacting with the former mental patient in a jigsaw group and others interacting with him in a more traditional learning climate. The results were striking: Those in the jigsaw group were quickly able to let go of their stereotypical expectations. They liked the confederate better and enjoyed interacting with him more than did those who encountered him in a more traditional learning situation. Moreover, people who went through the jigsaw session described mental patients, in general, far more positively.

**Reasons Underlying the Success of Jigsaw**

Why does the jigsaw strategy produce such positive results? How does self-persuasion come about? There are several ways. The jigsaw structure places people in a situation where they must pay attention to another person to learn
from him or her. As indicated earlier, this leads to greater empathy. In addition, when you are paying attention to a person who is earnestly trying to help you, chances are you will be inclined to see positive things in that person that you otherwise would not have seen. In addition, the jigsaw situation is a favor-doing situation. That is, each individual in a group, by sharing his or her knowledge with the other members, is helping them. It has been shown that offering help to a person leads us to persuade ourselves that the person is worthy of our help (Leippe & Eisenstadt, 1994).

A different but complementary mechanism was nicely illuminated in an experiment by Samuel Gaertner and his colleagues (1990), demonstrating that the process of cooperation lowers barriers between ethnic groups by changing the cognitive categories people use. In other words, cooperation changes our tendency to categorize the out-group from "those people" to "us people." In a similar vein, engaging in cooperative behavior also has a direct effect on the kinds of attributions one makes following the success or failure of one's partner. Specifically, my colleagues and I have found that cooperation increases the tendency for individuals to make the same kinds of attributions for success and failure to their partners as they do to themselves. For example, in one of our experiments (Stephan, Presser, Kennedy, & Aronson, 1978), we found that when people succeed at a task they attribute their success dispositionally (e.g., to their own skill and ability), but when they fail they tend to make a situational attribution (e.g., it was bad luck, I was feeling tired that day). We went on to demonstrate that individuals engaged in an interdependent task make the same kinds of attributions to their partner's performance as they do to their own. Thus, following jigsaw, when it comes to making attributions, one's teammates become an extension of oneself. We found that it was exactly the opposite in competitive interactions; people in competitive situations attributed the failure of their opponent to lack of ability and the success of their opponent to luck.

Conclusion

The common theme running through my 40 years of research appears to be the phenomenon of self-persuasion and its enormous power to affect long-term changes in attitudes and behavior. What characterizes a self-persuasion situation is that no direct attempt is made to convince anyone of anything. Rather, individuals find themselves in a circumstance where it becomes efficacious to convince themselves that a particular thing is the case: for example, that a particular group they have joined is attractive, that using condoms is a worthwhile precaution, that conserving water is important, that members of a minority group are not inferior, and so on. In these experiments, individuals are strategically placed in psychological situations where they become motivated to engage in self-persuasion. Self-persuasion is almost always a more powerful form of persuasion (deeper, longer lasting) than more traditional persuasion techniques—that is, than being directly persuaded by another person, no matter how clever, convincing, expert, and trustworthy that other person might be—precisely because in direct persuasion, the audience is constantly aware of the fact that they have been persuaded by another. Where self-persuasion occurs, people are convinced that the motivation for change has come from within.

This is a point worth emphasizing. Let us go back to my experiments with the jigsaw classroom, experiments that not only produced clear and powerful results but also led to the improvement of the lives of a great many young people. Unlike most direct appeals on the issue of prejudice reduction, we made no attempt to appeal to the students' conscience, to their notions of fair play, or to the Judeo-Christian virtues of tolerance, understanding, and brotherly love. Rather, the initial motivator was self-interest. Initially, each individual student was motivated to cooperate with all members of the group—regardless of race, gender, or ethnicity—because the structure was such that cooperation was the only way to achieve a passing grade on the exam. Self-interest may not seem to be the prettiest of motives, but it set in motion a series of events and cognitive processes that resulted in a genuine increase in liking and respect for individuals of all races and ethnic groups.

For me, the societal message of this research is clear. Last April, in Littleton, Colorado, there was a public school massacre in which a couple of teenagers shot up and bombed their school, killing 15 people. This was not an isolated incident; it was one of seven multiple murders of youngsters by youngsters in our schools in a period of 18 months.

These events produced an awful lot of hand-wringing in Washington, DC. Was there any action? By an overwhelming majority, Congress passed a resolution giving states the right to allow the posting of the Ten Commandments inside schools! In short, in response to these horrendous occurrences, all that Congress has to offer is an attempt at direct persuasion—and a feeble one, at that.

It goes without saying that these massacres are pathologi- cal. However, I suspect that they constitute the tip of a very large iceberg—that they are symptomatic of a pervasive societal problem. In most high schools, there is a clear in-group and out-group. For those youngsters in the out-group, school can be a very unpleasant experience consisting of exclusion, rejection, taunting, and bullying. At the extreme, it can be a living hell. From everything we can gather, it appears that a major factor in the Littleton massacre as well as the other recent multiple shootings in our schools was the pervasive feeling of being ostracized, rejected, or excluded by the popular people in the school and the humiliation that accompanied this exclusion.

Needless to say, this is a complex issue, and we do not have all the answers. However, I believe that social psychol-
ogy has something important to contribute to the national dialogue, and it would be a mistake to abnegate this responsibility because we do not have all the answers. We will probably never have all the answers. At the same time, we cannot leave this issue to the lawmakers in Washington. We must begin. How?

Well, for starters, we have seen that compared with more traditional persuasive techniques, self-persuasion can have profound and long-lasting effects on important aspects of behavior. Most specifically, if the structure of the classroom situation requires cooperative behavior, that process improves the empathic ability of youngsters. If, by participating in a jigsaw classroom, children and teenagers learn to be significantly less prejudiced and to empathize with others, this might be one way to help reduce the negativity, the put-downs, and the bullying that can cause despair, rage, and the seeking of revenge among alienated young people. I believe that is a goal worth striving for.

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**William T. Greenough**

**Award for Distinguished Scientific Contributions**

**Citation**

“For pioneering seminal contributions to understanding how experience alters the structure of brain neurons. His innovative experiments were the first to discover that differential early environmental experience alters the structure of brain cells. Findings that such changes are also induced by specific learning constituted the first clear evidence of a structural basis for memory and provided a foundation for further inquiry into the cellular machinery of learning and memory. As a creative scientist and a teacher and mentor of graduate students and postdoctoral researchers, he has inspired young scholars in the quest for understanding brain and behavior.”

**Biography**

William T. Greenough, born October 11, 1944, received his bachelor of arts degree at the University of Oregon in 1964, completing an honors thesis under the direction of James L. McGaugh. His graduate work was principally supervised by Arthur Yuwiler and cosupervised by thesis director Gaylord Ellison. In his doctoral thesis work (for the doctorate he was awarded in 1969) he investigated the biochemistry and pharmacology of the brains of rats reared in complex versus laboratory cage environments. Greenough accepted a faculty position in the Department of Psychology of the University of Illinois at Urbana-Champaign in the fall of 1968. He currently is Center for Advanced Study and Swanlund professor of psychology, psychiatry, and cell and structural biology at the University of Illinois at Urbana-Champaign.