**Myth #5 Subliminal Messages Can Persuade People to Purchase Products**

Many of us know that psychologists and advertisers can present sights and sounds so briefly or so faintly that we fail to perceive them. But can those feeble stimuli influence our behavior in powerful ways? There’s a profitable industry that hopes you believe the answer is “yes.”

Some promoters push this kind of ultra-weak or “subliminal” messaging in the realm of advertising, whereas others have become leaders in the burgeoning self-help movement. The Internet, New Age fairs and magazines, supermarket tabloids, late-night TV “infomercials,” and bookstores market subliminal audiotapes and CDs that promise to make the purchaser healthy, wealthy, and wise. Among our personal favorites we include audiotapes that promise to enlarge women’s breasts, relieve constipation, improve one’s sex life, or cure deafness (although the mechanism by which a deaf person could detect subliminal sounds remains truly mysterious). Given the widespread promotion of subliminal persuasion in the popular psychology world, it’s hardly surprising that 59% of the psychology undergraduates sampled by Larry Brown (1983), and 83% of those sampled by Annette Taylor and Patricia Kowalski (2003), said they believed it works.

Interestingly, there’s evidence that under tightly controlled laboratory conditions, psychologists can demonstrate short-lived and modest subliminal effects. In these experiments, researchers flash priming words or pictures on a screen so briefly that observers are unaware of what the flashes contain. In psychological lingo, priming stimuli increase the speed or accuracy with which we’ll identify a later stimulus. Experimenters then determine whether the meanings or emotional content of the priming stimuli influences people’s responses to the task, like completing a word with missing letters or judging the emotion of a person in a photograph. For instance, Nicholas Epley and his colleagues (Epley, Savitsky, & Kachelski, 1999) described an experiment in which researchers asked psychology graduate students to generate ideas for research projects. The investigators then exposed the students to extremely brief flashes featuring either the smiling face of a familiar colleague or the scowling face of their faculty supervisor. The students perceived the stimuli as nothing but flashes of light. Next, they rated the quality of the research ideas they’d produced. Without knowing why, subjects exposed to the flash featuring the scowling face of their supervisor rated their own ideas less favorably than those exposed to the smiling colleague’s face.

Investigators can similarly influence verbal behaviors, as when a shared theme in a series of subliminally flashed priming words increases the odds that a person will choose a related word from a list of alternatives (Merikle, 1992). For example, if we present a subject with the word stem “gui\_ \_” and ask her to form a complete word, “guide” and “guile” are both options. Research shows that we can boost the probability of subjects choosing “guide” by priming them subliminally with words like “direct,” “lead,” and “escort,” whereas we can boost the probability of their choosing “guile” by priming them subliminally with words like “deceit,” “treachery,” and “duplicity.”

“Subliminal” means “under the limen.” The limen, better known as the “sensory threshold,” is the narrow range in which a diminishing stimulus goes from being just barely detectable to being just barely undetectable. If the stimulus happens to be a word or phrase, the first hurdle it must pass is the simple detection threshold. That’s the point at which people first become dimly aware that the researcher has presented anything, even though they can’t identify what they saw or heard. The researcher must present the stimulus for a longer interval and at a higher intensity to reach the next stage of awareness, the recognition threshold. At that point, people can say precisely what they heard or saw. If a stimulus has so little energy, or is so thoroughly obscured by noise that it can’t trigger a physiological response in the eye’s or ear’s receptors, it can’t affect anything the person thinks, feels, or does. Period. Messages that inhabit the gray zone between the detection and recognition thresholds, or that we simply aren’t attending to, sometimes influence our emotions or behavior.

The subliminal self-help industry hopes you’ll swallow the claim that your brain understands and acts on the complex meanings of phrases that are presented at vanishingly weak levels or overshadowed by stronger stimuli. Moreover, they claim that these sneaky subliminal stimuli are especially effective because they worm their way into your unconscious, where they can pull your strings like a hidden puppeteer. Should you be worried? Read on.

Modern psychology accepts that much of our mental processing goes on outside of our immediate awareness—that our brains work on many tasks at once without monitoring them consciously (Kihlstrom, 1987; Lynn & Rhue, 1994). Nevertheless, this is a far cry from the kind of non-conscious processing envisioned by pop psychology proponents of subliminal effects. Subliminal entrepreneurs are holdovers from the heyday of strict Freudian views of the unconscious, which most scientific psychologists have long abandoned (Bowers, 1987). Like Freud, subliminal enthusiasts see the unconscious as the seat of primitive and largely sexual urges that operate outside of our awareness to compel our choices.

Writer Vance Packard popularized this view of the unconscious in his 1957 smash bestseller, The Hidden Persuaders. Packard accepted uncritically the story of marketing consultant James Vicary, who supposedly conducted a successful demonstration of subliminal advertising at a Fort Lee, New Jersey movie theatre. Vicary claimed that during a movie, he repeated exposed cinema patrons to messages flashed on the screen for a mere 1/3,000 of a second, urging them to buy popcorn and Coca-Cola. He proclaimed that although movie-goers were unaware of these commands, sales of popcorn and Coca-Cola skyrocketed during the sixweek duration of his “experiment.” Vicary’s findings achieved widespread popular acceptance, although he never submitted them to the scrutiny of a scientific journal, nor has anyone been able to replicate them. After much criticism, Vicary finally admitted in 1962 that he’d made up the whole story in an effort to revive his failing consulting business (Moore, 1992; Pratkanis, 1992).

Vicary’s confession failed to discourage even more far-fetched accusations that the advertisers were subliminally manipulating the unsuspecting public. In a series of books with such titillating titles as Subliminal Seduction (1973), former psychology professor Wilson Brian Key claimed that advertisers were conspiring to influence consumer choices by embedding blurred sexual images into magazine and TV renderings of ice cubes, plates of food, models’ hair-dos, and even Ritz crackers. Key gravely warned that even a single exposure to these camouflaged images could affect consumer choices weeks later. Although Key presented no real evidence to back up his claims, public alarm led the U.S. Federal Communications Commission (FCC) to look into his allegations. Although the FCC couldn’t find any evidence that subliminal advertising worked, they declared it “contrary to the public interest” and warned licensed broadcasters to steer clear of it. Moreover, in an attempt to soothe public jitters, several advertising trade associations imposed voluntary restrictions, asking their members to refrain from attempts to punch below the liminal belt.

Although Vicary was an admitted fraud and Key never put his strange ideas to a proper test, some still believed that subliminal persuasion claims were worth examining. So in 1958, the Canadian Broadcasting Corporation (CBC) performed an unprecedented nationwide test. During a popular Sunday night TV program, it informed viewers that the network was about to conduct a test of subliminal persuasion. The CBC then flashed subliminally the message “phone now” on the screen 352 times throughout the show. Telephone company records indicated that phone usage didn’t increase, nor did local television stations report a big upsurge in calls. Nevertheless, a few viewers, who may have known about Vicary’s alleged results, called in to say they felt hungrier and thirstier following the program. The results of more carefully controlled tests of the ability of subliminal messages to influence consumer choices or voter attitudes were also overwhelmingly negative (Eich & Hyman, 1991; Logie & Della Sala, 1999; Moore, 1992; Pratkanis, 1992). To this day, there’s no good evidence that subliminal messages can affect purchasers’ decisions or voters’ choices, let alone yield perfect memories or larger breasts.

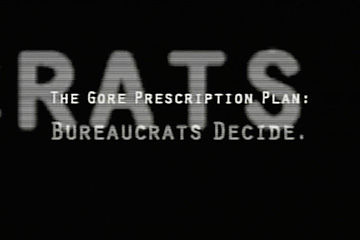
Perhaps most bizarre of all were claims that heavy metal rock bands, such as Judas Priest, were inserting backward recordings of Satanic messages in their music. Alarmists claimed these messages encouraged suicidal behavior, although what conceivable purpose entertainers might have in killing off potential album buyers remains unclear. Some even asserted that it was all a plot to subvert the morality of youthful music fans. Many would maintain that youth generally manage this feat quite well without any special subliminal help, but no matter.

John Vokey and J. Don Read (1985) put the idea of subliminal backward messages to a controlled test. In one particularly amusing demonstration, they found that participants with prudish leanings, given subtle suggestions as to what they were about to hear, were likely to perceive nonexistent pornographic material in reverse-played Biblical passages. These results suggest that people who claim to hear Satanic messages embedded in commercial sound tracks are allowing their overheated imaginations to read the lewd material into meaningless sound patterns. It’s all in the ear of the beholder.

Tests of self-help subliminal products have been equally discouraging. Anthony Greenwald and his colleagues (Greenwald, Spangenberg, Pratkanis, & Eskenazi, 1991) conducted a double-blind test of commercially marketed subliminal audiotapes that purport to enhance memory or self-esteem. They told half of the participants they were getting the memory boosting tapes, the other half they were getting the self-esteem boosting tapes. Within each of these groups, half got the tapes they were expecting and half got the tapes with the other message. Participants reported that they improved in ways consistent with whichever kind of tape they believed they received. Those who received the self-esteem tapes, believing they were the memory boosters, were just as happy with their apparent memory improvement as those who got the real McCoy, and vice versa. This curious finding led Greenwald and his colleagues to refer to this phenomenon as an illusory placebo effect: People didn’t improve, but they thought they had.

Despite convincing debunking of the concept by the scientific community, subliminal advertisements still pop up occasionally. During the 2000 U.S. presidential election, sharp-eyed Democrats spotted, in a Republican TV attack ad aimed at candidate Al Gore, an extremely brief flash of the word “RATS” superimposed on Gore’s face (Berke, 2000). The ad’s creator claimed that the fact that the last four letters of the intended word “BUREACRATS” just happened to become detached from this longer word was entirely accidental (see Figure 1.2). Nevertheless, advertising production experts said that given the advanced technology used to prepare the ad, an unintentional insertion of this kind was unlikely.

Figure 1.2 Was the inclusion of the word (“RATS”), which appeared subliminally in this 2000 Republican campaign advertisement against Democratic candidate Al Gore, intentional? Source: Reuters/Corbis.



Perhaps the final word should go to a spokesperson for the industry that lives or dies by its ability to persuade people to buy things they may—or may not—need. Bob Garfield (1994), a columnist for Advertising Age magazine, summed up many people’s views on the matter: “Subliminal advertising does not exist except in the public consciousness, at least not in consumer advertising. Nobody bothers with it because it’s hard enough to impress people by hitting them upside the head with “blatant” images.

**Myth #7 Adolescence Is Inevitably a Time of Psychological Turmoil**

In a recent weekly newspaper advice piece, an exasperated mother wrote to ask the columnist, Hap LeCrone (2007), to explain what had happened to her now 11- year-old daughter, who was until recently an easy-going and happy child. “If we like something, she hates it,” the mother wrote. Her daughter “doesn’t want to accompany us anywhere,” and “her responses to us are not often very civil.” What’s more, “getting her to keep her room straight or dress nicely is likely pulling teeth,” and “back talk is the norm.” What on the earth, the mother wondered, is going on? LeCrone responded succinctly: “Some parents call what you are going through the disease of adolescence.”

The view that adolescence is always or almost always a time of emotional turmoil is hardly new. Psychologist G. Stanley Hall (1904), the first president of the American Psychological Association, was also the first to refer to adolescence as a time of “storm and stress.” Hall borrowed this term from the 18th century German “Sturm and Drang” movement in music, art, and literature, which emphasized the expression of passionate and often painful emotions. Later, Anna Freud (1958), daughter of Sigmund Freud and a prominent psychoanalyst in her own right, popularized the view that adolescent emotional upheaval is pervasive (Doctors, 2000). She wrote (A. Freud, 1958, p. 275) that “to be normal during the adolescent period is by itself abnormal” (p. 267) and “adolescence is by its nature an interruption of peaceful growth” (p. 275). For Anna Freud, the teenager who experiences minimal dis tress is actually pathological, and is at greatly heightened risk for psychological problems in adulthood.

Today’s pop psychologists have fueled the perception that the teen age years are usually times of high family drama. For example, the promotional copy for parenting expert Dr. James Dobson’s (2005) book, *Preparing for Adolescence*, informs readers that it will “help teens through the rough years of adolescence” and help “parents who want to know what to say to a child who’s getting ready to enter those turbulent teenage years.” A television show on adolescence featuring “Dr. Phil” (Phil McGraw) warned viewers that “the teenage years can be a parent’s worse nightmare” and promised to discuss “ways for parents and teens to survive adolescence.”

The stereotype of the “terrible teen” years is echoed in much of the entertainment media. Dozens of films, including *Rebel Without a Cause* (1955), *Ordinary People* (1980), *Kids* (1995), *Girl, Interrupted* (1999), and *Thirteen* (2003), focus on the plight of troubled adolescents, and the title of a 2002 British television series, Adolescence: The Stormy Decade, speaks for itself. In addition, such bestselling novels as J. D. Salinger’s *A Catcher in the Rye* (1951) capture the pain and confusion of the teenage years.

Because books and movies focus far more often on tales of troubled than healthy adolescents—a Hollywood film about an entirely normal teenager is unlikely to make for an interesting storyline, let alone hefty box office receipts—the public is routinely exposed to a biased sampling of teenagers (Holmbeck & Hill, 1988; Offer, Ostrov, & Howard, 1981). Perhaps not surprisingly, many laypersons believe that adolescence is usually a time of storm and stress. As psychologist Albert Bandura (1964) noted, “If you were to walk up to the average man on the street, grab him by the arm and utter the word ‘adolescence,’ it is highly probable … that his associations of this term will include references to storm and stress, tension, rebellion, dependency conflicts, peer-group conformity, black leather jackets, and the like” (p. 224).

Bandura’s informal observations are borne out by surveys of college students. Grayson Holmbeck and John Hill (1988) found that students enrolled in an undergraduate course on adolescence scored an average of 5.2 (out of 7) on the item “Adolescence is a stormy and stressful time.” Parents and teachers hold similar views (Hines & Paulson, 2006). This position is widespread even among health professionals. One survey of staff in a pediatric hospital revealed that 62% of medical residents (doctors in training) and 58% of nurses agreed that “the majority of adolescents show neurotic or antisocial behavior sometime during adolescence.” In addition, 54% of medical residents and 75% nurses agreed that “Doctors and nurses should be concerned about the adjust ment of the adolescent who causes no trouble and feels no disturbances,” mirroring Anna Freud’s position that the “normal” adolescent is actually abnormal (Lavigne, 1977).

To evaluate claims regarding adolescent storm and stress, we need to examine three domains of teen behavior: (1) conflicts with parents, (2) mood instability, and (3) risky behavior (Arnett, 1999). Research shows that like several other myths in this book, the adolescent storm and stress claim possesses a kernel of truth, which probably accounts in part for its popularity. At least in American society, adolescents are indeed at somewhat elevated risk for difficulties across all three domains (Arnett, 1999; Epstein, 2007). Conflicts with parents escalate during the teen years (Laursen, Coy, & Collins, 1998), teens report more mood changes and more extreme moods than do non-teens (Buchanan, Eccles, & Becker, 1992; Larson & Richards, 1994), and teens take more physical risks than do non-teens (Reyna & Farley, 2006; Steinberg, 2007). So it’s true that adolescence can be a time of heightened psychological struggles for *some* teens.

But note that we italicized “some.” The same data show overwhelmingly that each of these difficulties is confined to only a small minority of teens. Most studies indicate that only about 20% of adolescents undergo pronounced turmoil, with the substantial majority experiencing generally positive moods and harmonious relations with their parents and peers (Offer & Schonert-Reichl, 1992). Furthermore, marked emotional upset and parental conflict are limited largely to adolescents with clear-cut psychological problems, like depression and conduct disorder (Rutter, Graham, Chadwick, & Yule, 1976), as well as to adolescents who come from disrupted family backgrounds (Offer, Kaiz, Ostrov, & Albert, 2003). So the claim that adolescent angst is either typical or inevitable doesn’t hold up (Epstein, 2007). To the contrary, it’s the exception rather than the rule. In addition, one study that followed 73 adolescent males over a 34-year period found not a shred of evidence that well-adjusted teens are at heightened risk for psychological problems later in life (Offer et al., 2002). These findings put the lie to Anna Freud’s claims that seemingly normal teens are actually abnormal and destined for psychological trouble in adulthood.

Further contradicting the view that teen storm and stress are inevitable are cross-cultural data showing that adolescence is a time of relative peace and calm in many traditional and non-Western societies (Arnett, 1999; Dasen, 2000). For example, in Japan and China, the teenage years usually pass without incident. In Japan, 80–90% of teens describe their home lives as “fun” or “pleasant” and report positive relations with their parents. We can find a similar absence of significant teenage turmoil in India, sub-Saharan Africa, Southeast Asia, and much of the Arab world (Epstein, 2007). Moreover, there’s evidence that increasing Westernization in these areas is associated with increasing adolescent distress (Dasen, 2000). We don’t know why adolescent turmoil is more common in Western than in non-Western cultures. Some authors have suggested that because parents in Western cultures, in contrast to most non-Western cultures, tend to treat their teenagers more like children rather than as maturing adults with grown-up rights and responsibilities, they may rebel against their parents’ restrictions and behave antisocially (Epstein, 2007).

Can erroneous beliefs about the inevitability of adolescent turmoil do any harm? Perhaps. Dismissing some adolescents’ genuine problems as merely a “passing phase” or as a manifestation of a normal period of turmoil may result in deeply troubled teens not receiving the psycho logical assistance they sorely need (Offer & Schonert-Reichl, 1992). Admittedly, some teenagers’ cries for help are manipulative ploys to garner attention, but many others are signs of desperate youths whose suffering has been ignored.

**Myth #27 Opposites Attract: We Are Most Romantically Attracted to People Who Differ from Us**

It’s the Hollywood movie plot we’ve all come to know and love, and we can practically recite it by heart. Get out your popcorn, coke, and Raisinets, because the curtain is just about to rise.

*Scene 1:* The camera pans to a small, dingy, and messy bedroom. There, lying on the bed reading a biography of Ronald Reagan, we see a moderately overweight, balding, and rather unkempt man named Joe Cantgetadate. Joe is 37 years old, shy, nerdy, and completely lacking in self-confidence. Until recently he worked as a librarian but he’s now out of a job. Joe hasn’t dated anyone in over 3 years and he’s feeling hopeless and lonely.

*Scene 2:* On his way out of his apartment an hour later, Joe bumps into (literally) a stunningly gorgeous 25-year-old woman named Candice Blondebombshell. In the process, Joe knocks all of the shopping bags out of Candice’s hands, scattering them across the sidewalk, and he bends down to help her pick them up. Candice, it so happens, is not only beautiful, but outgoing, interpersonally skilled, and wildly popular. She works part-time as a waitress in an upscale restaurant and spends much of the rest of her time modeling for a top fashion agency. In contrast to Joe, who’s a conservative Republican, Candice is a flaming liberal. Sheepishly, Joe asks Candice out for a date, but ends up making an embarrassing Freudian slip, asking her if she wants a “mate” rather than a “date.” Candice laughs and tells Joe politely that she’s romantically involved with a famous celebrity (Brad Crowe-Cruise) and can’t see anyone else.

*Scene 50:* Forty-eight scenes, two and a half hours, and three buckets of popcorn later, Joe (who ended up bumping into Candice again 6 months later at the restaurant, this time knocking over all of the plates and drinks she was carrying) has somehow managed to win over Candice, who’s just broken off her relationship with Brad Crowe-Cruise. Candice, initially put off by Joe’s decided absence of stunning good lucks and awkward ways, now finds him adorable in a teddy-bear sort of way and utterly irresistible. Joe gets down on his knees, proposes to Candice, and she accepts. The credits scroll down the screen, the curtain closes, and you wipe the tears off your eyes with a Kleenex.

If this plot line seems awfully familiar, it’s because the notion that “opposites attract” is a standard part of our contemporary cultural landscape. Films, novels, and TV sitcoms overflow with stories of diametrical opposites falling passionately in love. There’s even an entire website devoted to “opposites attract” movies, such as You’ve Got Mail (1998), starring Tom Hanks and Meg Ryan, and Maid in Manhattan (2001), starring Jennifer Lopez and Ralph Fiennes (http://marriage.about.com/ od/movies/a/oppositesmov.htm). The 2007 smash hit comedy, Knocked Up, starring Seth Rogen and Katherine Heigl, is perhaps Hollywood’s latest installment in its seemingly never-ending parade of mismatched romantic pairings (for you diehard movie buffs out there, according to the site the top “opposites attract” movie of all time is the 1934 comedy flick It Happened One Night).

Many of us are convinced that people who are opposite from each other in their personalities, beliefs, and looks, like Joe and Candice, are especially likely to be attracted to each other (the technical term for the attraction of opposites is “complementarity”). Psychologist Lynn McCutcheon (1991) found that 77% of undergraduates agreed that opposites attract in relationships. In his popular book, Opposites Attract, writer Tim Lahaye informed readers that “Two people of the same temperament almost never get married. Why? Because like temperaments repel, they don’t attract” (p. 43). This belief is also widespread in pockets of the ever-popular Internet dating community. On one Internet site called “Soulmatch,” Harville Hendrix, Ph.D. states that “It’s been my experience that only opposites attract because that’s the nature of reality” (the italics are Hendrix’s, not ours, by the way). “The great myth in our culture,” he later says, “is that compatibility is the grounds for a relationship—actually, compatibility is grounds for boredom.” Another Internet site, called “Dating Tipster,” informs visitors that “The saying ‘opposites attract’ is definitely true in some instances. Perhaps it’s the diversity of difference that creates the initial attraction … some people find the difference exciting.”

Yet, for most proverbs, in folk psychology there’s an equal and opposite proverb. So although you’ve almost certainly heard that “opposites attract,” you’ve probably also heard that “birds of a feather flock together.” Which saying is best supported by research evidence?

Unfortunately for Dr. Hendrix, research evidence suggests that he’s gotten his myths backward. When it comes to interpersonal relationships, opposites don’t attract. Instead, homophily (the fancy term for the tendency of similar people to attract each other) rather than complementarity is the rule. In this respect, Internet dating sites like Match.com and eHarmony.com, which try to match prospective partners on the basis of similarity in their personality traits and attitudes, are mostly on the right track (although there’s not much research evidence on how successful these sites actually are in pairing people up).

Indeed, dozens of studies demonstrate that people with similar personality traits are more likely to be attracted to each other than people with dissimilar personality traits (Lewak, Wakefield, & Briggs, 1985). For example, people with a Type A personality style (that is, who are hard-driving, competitive, conscious of time, and hostile) prefer dating partners who also have a Type A personality, and the opposite goes for people with a Type B personality style (Morell, Twillman, & Sullaway, 1989). The same rule applies to friendships, by the way. We’re considerably more likely to hang out with people with similar than dissimilar personality traits (Nangle, Erdley, Zeff, Stanchfield, & Gold, 2004).

Similarity in personality traits isn’t merely a good predictor of initial attraction. It’s also a good predictor of marital stability and happiness (Caspi & Herbener, 1990; Lazarus, 2001). Apparently, similarity on the personality trait of conscientiousness is especially important for marital satisfaction (Nemechek & Olson, 1999). So if you’re a hopelessly messy and disorganized person, it’s probably best to find someone who isn’t a complete neat freak.

The “like attracts like” conclusion extends beyond personality to our attitudes and values. The classic work of Donn Byrne and his colleagues demonstrates that the more similar someone’s attitudes (for example, political views) are to ours, the more we tend to like that person (Byrne, 1971; Byrne, London, & Reeves, 1968). Interestingly, this association approximates what psychologists call a “linear” (or straight line) function, in which proportionally more similarity in attitudes leads to proportionally more liking. So we’re about twice as likely to be attracted to someone with whom we agree on 6 of 10 issues as someone with whom we agree on 3 of 10 issues. Nevertheless, at least some evidence suggests that dissimilarity in attitudes is even more important than similarity in predicting attraction (Rosenbaum, 1986). That is, although people with similar attitudes may be slightly more likely to be attracted to each other, people with dissimilar attitudes may be especially unlikely to be attracted to each other. In the case of attitudes, at least, it’s not merely the case that opposites don’t attract: They often repel.

Similarly, biologists Peter Buston and Stephen Emlen (2003) asked 978 participants to rank the importance of 10 characteristics they look for in a long-term mate, such as wealth, ambition, fidelity, parenting style, and physical attractiveness. They then asked these participants to rank themselves on the same 10 characteristics. The two sets of rankings were significantly associated, and were even more highly associated for women than for men, although the reason for this sex difference isn’t clear. We shouldn’t take the Buston and Emlen findings too far, as they’re based entirely on self-report. What people say they want in a partner may not always correspond to what they actually want, and people are sometimes biased in how they describe themselves. Moreover, what people say they value in a potential partner may not always predict their initial attraction to others (after all, many of us have had the experience of falling for someone whom we knew was bad for us). Still, Buston and Emlen’s results dovetail nicely with that of a great deal of other research demonstrating that when we seek out a soulmate, we seek out someone who matches our personalities and values.

How did the opposites attract myth originate? Nobody knows for sure, but we’ll serve up three possibilities for your consideration. First, one has to admit that the myth makes for a darned good Hollywood story. Tales of Joe and Candice ending up together are almost always more intriguing than tales of two similar people ending up together. In most cases, these tales are also more heartwarming. Because we’re more likely to encounter “opposites attract” than “similars attract” stories in films, books, and television programs, the former stories may strike us as commonplace. Second, we all yearn for someone who can make us “whole,” who can compensate for our weaknesses. Bob Dylan wrote in one of his love songs (The Wedding Song, released in 1973) of the desire to find that “missing piece” that completes us, much like a missing piece in a jigsaw puzzle. Yet when push comes to shove, we may still be drawn to people who are most similar to us. Third and finally, it’s possible that there’s a tiny bit of truth to the “opposites attract” myth, because a few interesting differences between partners can spice up a relationship (Baron & Byrne, 1994). Being with someone who sees everything exactly the same way and agrees with us on every issue can be comforting, but boring. Still, no researchers have systematically tested this “similar people with a few differences here and there attract” hypothesis. Until they do, it’s probably safest for the real-life version of Joe to find himself another overweight librarian.

**Myth #29 Men and Women Communicate in Completely Different Ways**

Few topics have generated more spilt ink among poets, authors, and song-writers than the age-old question of why men and women seem not to understand each other. Even just confining ourselves to rock-and-roll, the number of songs that describe male–female miscommunication is probably too numerous to count. Take the lyrics of the *Genesis* song, “Misunderstanding”:

There must be some misunderstanding

There must be some kind of mistake

I waited in the rain for hours

You were late

Now it’s not like me to say the right thing

But you could’ve called to let me know.

Of course, it’s not just rock bands. Even famous personality theorists have expressed exasperation at their failed efforts to comprehend the opposite sex. No less an expert in human behavior than Sigmund Freud told Marie Bonaparte (a psychoanalyst and the great grand-niece of Napoleon Bonaparte) that:

The great question that has never been answered, and which I have not yet been able to answer, despite my thirty years of research into the feminine soul, is “What does a woman want?” (Freud, quoted in Jones, 1955).

Of course, one harbors a sneaking suspicion that many women personality theorists hold similar views of men.

The belief that men and women communicate in completely different ways, resulting in perennial misunderstandings, is deeply entrenched in popular lore. Many television shows and cartoons, like The Honey-mooners, The Flintstones, and more recently The Simpsons and King of the Hill, capitalize heavily on the often unintentionally humorous communication differences between husbands and wives. The men in these shows talk about sports, eating, hunting, and gambling, the women in these shows about feelings, friendships, relationships, and home life. Moreover, these shows typically depict men as less emotionally perceptive or, putting it a bit less charitably, “denser” than women.

Surveys suggest that college students similarly perceive men and women as differing in their communication styles. In particular, undergraduates see women as considerably more talkative than men and more skilled at picking up on subtle nonverbal cues during conversations (Swim, 1994).

Furthermore, if one were to read much of the current popular psychology literature, one might almost be tempted to conclude that men and women aren’t merely different people, but different species. British linguist Deborah Tannen’s book You Just Don’t Understand (1991) reinforced this view by arguing—based largely on informal and anecdotal observations—that men’s and women’s styles of communication differ in kind rather than degree. In Tannen’s words, “Women speak and hear a language of connection and intimacy, while men speak and hear a language of status and independence” (p. 42).

American pop psychologist John Gray took this view one step further, metaphorically likening men and women to creatures from different planets. In his enormously successful “Mars and Venus” series of self-help books, beginning with *Men are from Mars, Women are from Venus* (1992), extending to a host of related books, including *Mars and Venus in the Bedroom* (1996), *Mars and Venus on a Date* (1999), *Mars and Venus in the Workplace* (2001), and *Why Mars and Venus Collide* (2008), Gray has advanced the radical position that men and women have entirely different styles of communicating their needs, so different that they’re continually misunderstanding each other. Wrote Gray (1992), “Not only do men and women communicate differently but they think, feel, perceive, react, respond, love, need, and appreciate differently. They almost seem to be from different planets, speaking different languages” (p. 5). Among other things, Gray claims that women’s language focuses on intimacy and connectedness, men’s on independence and competition (Barnett & Rivers, 2004; Dindia & Canary, 2006). In addition, says Gray, when they’re upset, women express their feelings, whereas men withdraw into a “cave.”

Gray’s *Mars and Venus* books have sold over 40 million copies in 43 languages. *USA Today* named Gray’s 1992 book one of the 25 most influential books of the 20th century, and according to one estimate, Gray’s books were second only to the Bible during the 1990s in overall sales (http://www.ritaabrams.com/pages/MarsVenus.php). Gray has opened over 25 *Mars and Venus* Counseling Centers across the country, all with the goal of improving communication between the alien worlds of men and women. On Gray’s website, one can find instructions for accessing a Mars and Venus dating service and phone helpline (Cameron, 2007). And in 1997, Gray even transformed his *Mars and Venus* books into a musical comedy that opened on Broadway.

Although Gray and other pop psychologists haven’t conducted any research to back up their claims, many other investigators have examined the evidence bearing on sex differences in communication. In particular, we can turn to the literature to address four major questions: (1) Do women talk more than men? (2) Do women disclose more about themselves than men? (3) Do men interrupt other people more than women? (4) Are women more perceptive of nonverbal cues than men (Barnett & Rivers, 2004; Cameron, 2007)?

In addition, we can pose a further question: To the extent that such differences exist, how large are they in size? To address this question, psychologists often rely on a metric called Cohen’s *d*, named after statistician Jacob Cohen (1988), who popularized it. Without going into the gory statistical details, Cohen’s *d* tells us how large the difference between groups is relative to the variability within these groups. As a rough benchmark, a Cohen’s *d* of .2 is considered small, .5 medium, and .8 or bigger large. To provide a few yardsticks for comparison, the Cohen’s *d* for the average difference between men and women in the personality trait of conscientiousness (with women being more conscientious) is about .18 (Feingold, 1994); for physical aggression (with men being more aggressive) it’s about .60 (Hyde, 2005); and for height (with men being taller) it’s about 1.7 (Lippa, 2005).

(1) *Do women talk much more than men?* Although the belief that women are more talkative than men has been popular for decades, psychiatrist Louann Brizendine lent it new credence in her bestselling book, The Female Brain (2006). There, Brizendine cited a claim that women speak an average of 20,000 words per day compared with only 7,000 for men, and scores of media outlets soon broadcast this difference as firmly established. Yet closer inspection of this report reveals that it’s derived entirely from a self-help book and various second-hand sources, not from systematic research (Cameron, 2007; Liberman, 2006). Indeed, Brizendine dropped the claim from a later reprinting of her book. When psychologist Janet Hyde (2005) combined the results of 73 controlled studies into a meta-analysis (see p. 32), she found an overall Cohen’s d of .11, reflecting greater talkativeness among women than men. Yet this difference is smaller than small, and barely noticeable in everyday life. Psychologist Matthias Mehl and his colleagues put another nail in the coffin of the talkativeness claim in a study tracking the daily conversations of 400 college students who sported portable electronic recorders. They found that women and men both talked about 16,000 words per day (Mehl, Vazire, Ramirez-Esparza, Slatcher, & Pennebaker, 2007).

(2) *Do women disclose much more about themselves than men?* Contrary to the popular stereotype that women talk much more than men about matters of personal concern to them, Hyde (2005) found a Cohen’s d of .18 across 205 studies. This finding is small in magnitude, and indicates that women are only slightly more self- disclosing than men.

(3) *Do men interrupt others much more often than women?* Yes, although across 53 studies of gender differences in conversations, Hyde (2005) again found the difference to be at most small in size, a Cohen’s d of .15. Even this difference is hard to interpret, because research suggests that interruptions and turn-taking in conversation are partly a function of social status. In studies in which women are in charge, women tend to interrupt more often, take more turns, and talk longer than men (Aries, 1996; Barnett & Rivers, 2004).

(4) *Are women much more perceptive of nonverbal cues than men?* Here, the answer is somewhat clearer, and it’s a qualified “yes.” Meta-analyses (see p. 32) on adults by Judith Hall (1978, 1984) examining participants’ ability to detect or differentiate emotions (like sadness, happiness, anger, and fear) in people’s faces suggested a Cohen’s d of about .40, although a meta-analysis on children and adolescents by Erin McClure (2000) suggested a smaller difference of only .13.

So, men and women indeed communicate in slightly different ways, and a few of these differences are sizeable enough to be meaningful. Yet for practical purposes, men and women are far more alike than different in their communication styles, and it’s not clear how much the existing differences are due to intrinsic differences between the sexes as opposed to sex differences in power differentials (Barnett & Rivers, 2004; Cameron, 2007). Across studies, gender differences in communication seldom exceed the small range using Cohen’s d (Aries, 1996). So John Gray’s books, counseling centers, and Broadway musical notwithstanding, men aren’t from Mars, nor are women from Venus. Instead, in the words of communication researcher Kathryn Dindia (2006), it’s probably more accurate to say that “men are from North Dakota, women are from South Dakota” (p. 4).

**Myth #31 Raising Children Similarly Leads to Similarities in Their Adult Personalities**

How did you become who you are?

This is just about the most fundamental question we can ask about personality. Mull it over for a few minutes, and you’re likely to generate a host of responses. If you’re like most people, the odds are high that many of your answers pertain to how you were raised by your parents. “I’m a moral person because my parents taught me good values.” “I’m a daredevil because my father wanted me to take risks in life.”

Few beliefs about personality are as firmly held as what Judith Rich Harris (1988) termed “the nurture assumption,” the idea that parenting practices make the personalities of children within a family more similar to each other—and to their parents (Pinker, 2002; Rowe, 1994). For example, in her 1996 book, It Takes a Village, former first-lady and now U.S. Secretary of State Hillary Clinton argued that parents who are honest with their children tend to produce children who are honest; parents who are unduly aggressive with their children tend to produce children who are aggressive; and so on (Clinton, 1996). Moreover, we can find this assumption in hundreds of scholarly articles and books. For example, in an early edition of his widely used personality textbook, Walter Mischel (1981) presented the outcome of a thought experiment:

Imagine the enormous differences that would be found in the personalities of twins with identical genetic endowment if they were raised apart in two different families … Through social learning vast differences develop among people in their reactions to most stimuli they face in daily life. (Mischel, 1981, p. 311)

The nurture assumption also forms the bedrock of numerous theories that rely on parent-to-child socialization as a driving force of personality development (Loevinger, 1987). Sigmund Freud proposed that children learn their sense of morality (what he termed the “superego”) by identifying with the same-sex parent and incorporating that parent’s value system into their personalities. Albert Bandura’s “social learning theory” holds that we acquire behaviors largely by emulating the actions of our parents and other authority figures. The fact that our personalities are molded largely by parental socialization is undeniable. Or is it?

It’s true that children tend to resemble their parents to some extent on just about all personality traits. But this finding doesn’t demonstrate that this resemblance is produced by environmental similarity, because biological parents and their children share not only environment but genes. To verify the nurture assumption, we must find systematic means of dis entangling genes from environments.

One method of doing so capitalizes on a remarkable natural experiment. In about one of out every 250 births, the fertilized egg, or “zygote,” splits into two copies called identical twins; for this reason, they’re also called “monozygotic” twins. Identical twins therefore share 100% of their genes. By comparing the personalities of identical twins raised apart from birth with identical twins raised together, researchers can estimate the effect of shared environment: the combined environmental influences that increase the resemblance among family members.

The largest study of identical twins reared apart, conducted by University of Minnesota psychologist Thomas Bouchard and his colleagues, examined over 60 pairs of identical twins separated at birth and raised in different homes. Playfully termed the “Minnesota Twin” studies after the state’s baseball team, this study reunited many adult twin pairs at the Minneapolis-St. Paul airport for the first time since their separation only a few days following birth.

Bouchard and his colleagues, including Auke Tellegen and David Lykken, found that these twins often exhibited eerie similarities in personality and habits. In one case of male twins raised in different countries, both flushed the toilet both before and after using it, read magazines from back to front, and got a kick out of startling others by sneezing loudly in elevators. Another pair consisted of two male twins who unknowingly lived only 50 miles apart in New Jersey. To their mutual astonishment, they discovered that they were both volunteer firefighters, big fans of John Wayne westerns and, although fond of beer, drinkers of only Budweiser. While attending college in different states, one installed fire detection devices, the other fire sprinkler devices. Amazing as these anecdotes are, they don’t provide convincing evidence. Given enough pairings among unrelated individuals, one could probably detect a number of equally bizarre coincidences (Wyatt, Posey, Welker, & Seamonds, 1984).

More important was Bouchard and his colleagues’ remarkable finding that on questionnaire measures of personality traits—like anxiety-proneness, risk-taking, achievement motivation, hostility, traditionalism, and impulsivity—identical twins raised apart were as similar as identical twins raised together (Tellegen et al., 1988). Being raised in entirely different families exerted little or no impact on personality similarity. Other studies of identical twins raised apart have yielded similar results (Loehlin, 1992). Walter Mischel was wrong. In fact, he deleted his thought experiment from later editions of his personality textbook.

Another method of investigating the nurture assumption takes advantage of what Nancy Segal (1999) called “virtual twins.” Don’t be fooled by this term, because they’re not twins at all. Instead, virtual twins are unrelated individuals raised in the same adoptive family. Studies of virtual twins indicate that unrelated individuals raised in the same household are surprisingly different in personality. For example, one study of 40 children and adolescents revealed weak resemblance in personality traits, like anxiety-proneness, and most behavior problems within virtual twin pairs (Segal, 1999).

The results of identical and virtual twin studies suggest that the extent that you’re similar to your parents in extraversion, anxiety, guilt-proneness, and other traits is due almost entirely to the genes you share with them. This research also suggests some counterintuitive advice to parents and would-be parents. If you’re stressprone and want your children to turn out to be stress-free as adults, don’t stress out over it. It’s unlikely that your parenting style will have as large a long-term impact on your children’s anxiety levels as you think.

That’s not to say that shared environment has no effect on us. For one thing, shared environment generally exerts at least some influence on childhood personality. But the effects of shared environment usually fade away once children leave the household and interact with teachers and peers (Harris, 1998). Interestingly, as Bouchard notes, this finding offers yet another example of how popular wisdom gets it backward. Most people believe that our environments exert increasing or even cumulative effects on us over time, whereas the opposite appears to be true, at least insofar as personality is concerned (Miele, 2008).

In addition, it’s likely that extremely neglectful or incompetent parenting can produce adverse effects in later life. But within the broad range of what psychoanalyst Heinz Hartmann (1939) called the “average expectable environment,” that is, an environment that affords children basic needs for nourishment, love, and intellectual stimulation, shared environmental influence on personality is nearly invisible. Finally, at least one important psychological characteristic seems to be influenced by shared environment: antisocial behavior (by the way, don’t confuse “antisocial” behavior with “asocial” behavior, which means shyness or aloofness). Studies of children adopted into criminal homes often show that being raised by a criminal parent increases one’s risk of criminality in adult hood (Lykken, 1995; Rhee & Waldman, 2002).

It’s easy to see why most people, including parents, find the nurture assumption so plausible. We observe that parents and their children tend to be similar in personality, and we attribute this similarity to something we can see—parenting practices—rather than to something we can’t—genes. In doing so, however, we’re falling prey to post hoc, ergo propter reasoning, the mistake of assuming that because A comes before B, A causes B (see Introduction, p. 14). The fact that parenting practices precede the similarity between parents and children doesn’t mean that they produce it