Romantic relationships can begin anywhere. When Cupid’s arrow strikes, you might be at church or at school, playing chess or softball, flirting with a friend of a friend at a party or minding your own business on the train. Sometimes, however, Cupid goes on vacation, or takes a long nap, or kicks back for a marathon of Lifetime original movies. Instead of waiting for the capricious arrow slinger to get back to work, people are increasingly joining online-dating sites to assert some control over their romantic lives.

For millennia cultures have invented practices to fulfill the evolutionary imperatives of mating and reproduction. In the Western world today, individuals are largely expected to identify romantic partners on their own, a process that can consume significant time, effort and emotional energy. The ability to hunt for dates online offers singles a modicum of control over a seemingly random process and grants them access to hundreds, potentially thousands, of eligible mates.

The unprecedented opportunity to pursue romance beyond one’s social circles and neighborhood haunts has developed into a billion-dollar industry. Most online-dating sites work in this way; users create profiles describing themselves and then search a Web site for possible romantic partners according to various criteria—within a town or city, for example, or perhaps by educational levels, age range or religion. Some sites attempt to play the role of matchmaker and use proprietary algorithms to suggest pairings between users, whereas other services give their customers free rein. Our best estimate is that online dating will launch 20 to 25
With online dating, singles can now search for romance whenever they want, including while cozy in their pajamas.

percent of new romantic relationships this year.

Two decades ago almost no couples met online, whereas now it is the second most common way to find a partner, trailing slightly behind connecting through friends. Rather than dabbing on perfume or cologne and preparing for a night on the town, singles can peruse potential partners while drinking their morning cup of coffee, during meetings at work or when lying in bed for 10 minutes before nodding off. In short, online services have fundamentally altered the dating landscape.

The changes are not all constructive, however. Critical assumptions lurk in the mechanisms of online dating. One supposition is that people are good judges of which qualities described in an online profile will appeal to them in person. A second premise is that comparing multiple potential partners side by side is an effective way to evaluate compatibility. A third is that having many options allows people to make good decisions about their romantic future. Several lines of scientific work suggest that none of these guesses is likely to be true.

This disconnect between the assumptions underlying online dating and the realities of human psychology often yields dissatisfaction. Users may invest tens of hours every month in browsing profiles and only rarely arrange a date. They may contact dozens of users and hear back only from a small fraction of them. They may set up dates with individuals who seem perfect “on paper” only to learn on the first date that as a pair they have no chemistry.

For online daters, what follows is a survival guide. For others, a look at today’s dating methods offers revealing insights into the human psyche.

Set Limits for Yourself

Online dating is almost nothing like a typical night out on the prowl. At a bar, a man might size up the room before letting his gaze settle on the thirtysomething brunette with the welcoming smile and the serious eyes. If he approached her and managed to strike up a conversation, he could take in her nonverbal cues—such as her gestures, posture and scent—as he tried to make her laugh.

If he were instead reading her profile on an online-dating site, he would have learned that she plays board games on the weekends, works as a pastry chef and loves horror movies. A connoisseur of art-house films, he might have already dismissed her for her questionable taste.

With the carrot of romance always dangling a mere mouse click away, the temptation to scan—and cavalierly dismiss—dozens of profiles is strong. We all value having options, but too many can produce choice overload, undermining our ability to make good decisions. In a famous illustration of this effect, supermarket shoppers encountered a tasting booth that displayed either six or 24 flavors of jam. Although shoppers were more likely to stop at the display with the larger array of jams than the booth with the smaller selection, they were 10 times more likely to purchase an item from the smaller group than the larger. Presumably the larger array paralyzed them with indecision.

Similarly, several studies in the romantic domain suggest that people become overwhelmed as the number of online-dating profiles they browse

FAST FACTS

Mindful Matchmaking

1. Online dating, a billion-dollar industry, offers singles an unparalleled opportunity to meet and arrange dates with people outside their own social circles.

2. Often these services encourage users to rely on decision-making styles that are not well suited to the development of successful relationships.

3. Awareness of the obstacles in this psychological terrain can help online daters make the most of these services.
grows larger. In a recent study, participants viewed either four or 20 such profiles. Those considering the larger set were more prone to misremembering information in them. In a second experiment, as the number of profiles grew from four to 24 to 64, users increasingly switched from time-consuming choice strategies that attend to and integrate multiple cues to more frugal strategies that examine few elements and do not combine them effectively.

No studies have investigated how satisfied online daters are with their choices after considering small versus large numbers of profiles, but other research suggests that exposure to numerous options leads to low satisfaction with a given choice. Those who selected one chocolate out of six, for example, thought the treat tasted significantly better than did participants who picked their chocolate from an array of 30. By analogy, online daters choosing from a small rather than a large batch of potential partners are more likely to enjoy the person with whom they end up sharing a candlelit dinner.

These cognitive biases are hard but not impossible to counteract. Remain aware of how many profiles you have scanned in a browsing session and impose a time limit. View profiles in manageable clusters and consider reaching out to, say, one out of every 20 users. Keep in mind that behind the profile is a flesh-and-blood person, with nuance and depth that is easily lost online.

**Monitor Your Mind-set**

People also tend to evaluate romantic prospects differently depending on how they encounter them. Many studies in nonromantic domains have demonstrated that people frequently prioritize different qualities when they compare multiple options side by side—referred to as a joint evaluation mind-set—than when they size up one specific possibility in isolation, known as a separate evaluation mind-set.

A study of incoming college freshmen explored...
this idea in the context of their dormitory assignments. Before learning which one of 12 dormitories they would be randomly assigned to, the students tended to predict that physical features, such as the building’s location and the size of its rooms, would strongly influence their future happiness. None of these attributes ultimately predicted their well-being. Instead experiential qualities—such as the relationship with one’s roommate and the social atmosphere of the dormitory—trounced any of the lodgings’ physical characteristics.

One explanation for this discrepancy between expectation and reality is that the freshmen were in a joint evaluation mind-set when making the predictions and in a separate evaluation mind-set when living in the assigned dorm. Before moving in, they were more sensitive to unimportant physical variations simply because those differences were easy to judge. Browsing profiles of potential romantic partners is also likely to trigger a joint evaluation mind-set and cause users to overvalue qualities that are easy to assess but unlikely to determine compatibility.

Cast a Wide Net

Studies suggest that online daters typically aim too high. They contact the most objectively desirable individuals at massively higher rates than others. In a real-world dating scenario, attendees at a party would not all strive to mob one attractive individual, which is effectively what happens online, because these daters cannot see how much attention a person is already receiving. These highly sought-after people are the least likely to respond to e-mails, and both the deluged daters and the pursuers can experience frustration as a result.

Part of the problem appears to stem from the attitude that daters adopt, intentionally or not, when on these sites. In one 2010 study Rebecca Heino of Georgetown University and her colleagues described online dating as “relationshopping.” The metaphor of shopping is apt. Much like hunting for size 8 leather shoes on Zappos.com, online daters seek partners by searching through profiles using attributes such as income and hair color, as opposed to arguably more important factors, such as a sense of humor or rapport. One online dater illustrated the shopping mentality as follows: “You know, I’ll take her, her, her—like out of a catalogue.” A second online dater agreed: “I can pick and choose; I can choose what size I want, it’s like buying a car, what options am I looking for.”

This checklist mentality underscores our lack of self-knowledge when it comes to romance. In one experiment, research participants who evaluated an online dater’s written profile expressed more attraction toward a person whose description was rigged to match their own idiosyncratic preferences. After a brief live interaction, however, the participants’ ideals no longer predicted romantic interest. These experiments tell us a few things. First, daters by and large think they covet the same things. Further, we are bad at predicting what we will find attractive in real life. Last, the easy access...
sibility of profiles may exacerbate these tendencies by encouraging us to evaluate potential partners in an ineffectual manner.

Rather than reaching out to the most desirable people “on paper,” consider looking for more idiosyncratic features that are likely to appeal to some daters more than others. More important, get away from profiles as soon as you can and do not expect too much from them in the first place. Stay open-minded about whom you might end up falling for—and who might love you back.

Communicate with Care

Online-dating sites include easy methods, such as e-mail and online chat functions, for users to communicate with prospective dates. In fact, dating hopefuls must converse through one of these methods before switching to a personal e-mail account or arranging for a telephone call. If these interactions go well, the romance seekers typically agree to meet in person in short order.

Unfortunately, many matches never get the chance to blossom. One reason is that not all profiles on a site represent paying or active users. In addition, responses to initial overtures can be few and far between. In one recent study, men replied to one out of four messages they received through a dating site, and women replied to one in six. More promisingly, this study found no evidence that eager responses were a turnoff; the faster the reply, the more likely that reciprocal communication continued. If you sense a spark, don’t play hard to get.

Putting some effort into the initial e-mail can also pay off. A linguistic analysis of 167,276 initial e-mails sent by 3,657 online daters revealed that the messages more likely to receive a response were characterized by less use of the pronoun “I” and of leisure words such as “movie” and by higher use of the pronoun “you” and of social-process words such as “relationship” and “helpful.”

At this stage, the incipient relationship is still fragile. Do not wait too long to set up a date. Most of the pairings that start communicating outside the dating site’s messaging systems meet face-to-face within a month, frequently within a week, according to two studies from 2008. Doing so is wise, as research shows that although a small amount of e-mailing or chatting online can increase attraction when two daters meet, too much of it tends to instill overly specific expectations.

**MORE SCIENCE** See the Psychological Science in the Public Interest article, “Online Dating: A Critical Analysis from the Perspective of Psychological Science,” on which this story for Scientific American Mind is based, at the Association for Psychological Science’s Web site: www.psychologicalscience.org
Ultimately there is something that people must assess face-to-face before a romantic relationship can begin. Scholars are still working to identify exactly what that something is, but it appears to reside at the intersection of experiential attributes, chemistry and gut-level evaluations. Some emotional reactions could even be based on sensory experiences, such as olfaction, that cannot be gleaned any other way. Meeting in person also serves as an important reality check before intimacy progresses: people are less likely to misrepresent their observable attributes in a real-world setting as compared with online correspondence.

**Don’t Bet on Matching Algorithms**

Several high-profile dating sites promise to match users with an especially compatible individual using a proprietary matching algorithm. Unfortunately, these companies have so far failed to offer convincing evidence supporting this claim. We encourage users to consider this limitation before investing the sometimes considerable resources required to join such services.

To their credit, dating-site algorithms can probably discern which people have an increased risk of experiencing relationship problems by assessing individual differences such as neuroticism and a history of substance abuse. Evidence that some people are better at sustaining intimacy than others is strong and unequivocal. By assessing these types of characteristics, online-dating sites can in principle screen out the relationally challenged more efficiently and effectively than a human can. This is a potentially useful service, as long as you are not one of the unlucky folks who gets eliminated.

This filtering service, however, yields far less than what algorithm-based matching sites typically promise their users. They pledge to identify potential mates who are particularly compatible with their customers—even soul mates—a claim that is hard to swallow for two simple reasons. No matching site has mustered any scientifically compelling evidence that its algorithm is effective. Second, decades of research on relationships suggest that the most important determinants of a relationship’s fate emerge only after the pair have met—factors such as the way the couple navigates interpersonal conflict, responds to unpredictable events or shares good news. Because matching sites have demonstrated insufficient ambition or creativity, their ap-
approaches are based solely on qualities of individuals that can be known prior to meeting in person. As a result, these algorithms are poorly equipped to predict whether strangers on a date will linger over dessert or quickly demand the check. Discerning whether two people will live happily ever after is even further out of reach.

Particularly exasperating is the fact that these matching sites could so easily test whether their algorithm actually works. If the proprietors would reveal their secret sauce—perhaps with patent protection from the federal government, as in the pharmaceutical industry—scientists could test its validity by randomly assigning online daters to one of four experimental conditions. In the wait-list control group, participants would experience no intervention. A placebo-control group would consist of subjects who believe they are being matched by the site’s algorithm but are actually matched at random. Daters in a relationship-aptitude control group would be paired with people who tend to be good at relationships in general and are not, say, especially neurotic. Last, individuals in an algorithm group would view profiles selected by the site’s matching technology.

If the members of the fourth group experienced romantic outcomes superior to those of the participants in the other three groups, then we would have evidence that the algorithm is effective. Given that we have repeatedly spelled out how matching sites could demonstrate their value, it seems suspicious than no site has done so—or allowed independent scholars to perform the study on its behalf. Until matching sites that claim to use science actually conduct minimally adequate experiments, online daters should think twice before paying a premium for such services.

Know What Works

Some aspects of online-dating services are marvelous. They open up access to potential sources of romance that might never otherwise be available to their clients. They can transcend geographic and social-network boundaries to an unprecedented degree. These benefits may be especially powerful for those people who need it the most—including those who are socially anxious, have struggled to find like-minded partners or have recently moved to a new city.

Even though our decision making falters under trying conditions, it is worth noting that we are actually quite skilled at deducing certain personality characteristics from sparse amounts of information. Past research demonstrates that people can accurately assess a broad range of facts about others based on a brief exposure to their photographs. For example, when study participants viewed snapshots of the faces of chief executive officers from Fortune 1,000 companies, their ratings of those CEOs’ leadership ability correlated strongly with the companies’ profits. What people cannot discern from an image, however, is how compatible they might be with the individual pictured. This capability also so far eludes online-dating sites, unfortunately.

In general, however, online-dating sites present a unique opportunity to bring happiness into the world. The industry is still in its infancy, which is probably one reason it contains so many flaws. As these services increasingly incorporate the best relationship science, they will evolve and improve. When wielded with skill and rigor, these tools can help millions of lonely hearts find love. M

(Further Reading)