Why do we fall for the people we do? Often we have little control over the way we decide on a partner, says **Martie G. Haselton**, but there are ways to choose well

How to pick a perfect mate

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SELECTING a mate is the most crucial decision of our lives. We spend a huge amount of time and energy trying to find that special someone. Our appetite for a relationship fuels a billion-dollar industry of match-making services, lonely hearts ads and online dating. Yet we're often not satisfied. A survey in 2005 of more than 900 people who had been using online dating services found that three-quarters had not found what they were looking for. We seem as much in the dark as ever about who is a suitable match for us.

As a scientist studying human behaviour, I am not too surprised by the mysterious nature of how we go about choosing a partner. Mate selection is a highly complex process. We are consciously aware of only part of it; the rest is either inherently unpredictable or operates outside our awareness, which leads us to the perception that love is about ineffable chemistry.

Let's start with the conscious part. There are some things we all find attractive. Men tend to desire women with features that suggest youth and fertility, including a low waist-to-hip ratio, full lips and soft facial features. Recent studies confirm that women have strong preferences for a virile male beauty – taut bodies, broad shoulders, clear skin and defined, masculine facial features, all of which may indicate sexual potency and good genes. We also know that women are attracted to men who look as if they have wealth, or the ability to acquire it, and that both men and women strongly value intelligence in a mate. Preferences for these qualities – beauty, brains and resources – are universal. The George Clooneys and Angelina Jolies of the world are sex symbols for predictable biological reasons.

Of course, we don't all fall in love with super-mates like these. An average person who did would be headed nowhere, because super-mates are inaccessible to all but a few. This is likely part of the reason why love evolved: to bond us for cooperative child rearing, but also to assist us in choosing, so that we don't waste time and energy falling for someone who is unattainable. Instead, people tend to fall for others who, on attractiveness, intelligence and status, are of a similar "ranking" to themselves.

So much for outward appearances. What about the less obvious cues of attraction? Fascinating work on genetics and mate preferences has shown that each of us will be attracted to people who possess a particular set of genes, known as the major histocompatibility complex (MHC), which play a critical role in our ability to fight pathogens. Mates with dissimilar MHC genes produce healthier offspring with broad immune systems. And the evidence shows that we are inclined to choose people who suit us in this way: couples tend to be less similar in their MHC than if they had been paired randomly.

How do people who differ in their MHC find each other? This isn't fully understood, but we know that smell is an important cue. People appear to literally sniff out their mates. In studies, people tend to rate the scent of T-shirts worn by others with dissimilar MHC as most attractive. This is what sexual "chemistry" is all about.

The message here is trust your instincts – except that there is an alarming exception. For women taking hormonal contraceptives, the reverse is true: they prefer men whose MHC genes are similar to their own. Thus women on the pill risk choosing a mate who is not genetically suitable (best to smell him first and go on the pill afterwards). This is a prime example of how chemical attraction can depend on your circumstances.

Here's another example: attraction can fluctuate over the menstrual cycle. Men evaluate women's scents as more attractive when they are near ovulation, and in our studies at UCLA we have found that men are more loving towards their partners as ovulation approaches. Women's preferences for certain male scents and other male features change over their cycle. Near ovulation, they prefer masculine traits; at other phases of their cycle they prefer less sexiness and more stability. All this suggests that the path to love can be somewhat random, particularly for women.

Having sex can also complicate the way you perceive a potential partner. After sex, the brain releases oxytocin, which results in that warm, companionable feeling of love and the creation of the social bonds that facilitate cooperative child rearing. Watch out: sex on a whim can lead to feelings of love for a person who is entirely wrong for you.

Sex, of course, is not love. For scientists, love is a conundrum: strictly speaking sexual desire takes care of reproduction, so what could be the purpose of love, especially since it makes us believe we have found our one true "soulmate" in a world filled with billions of alternatives. How would our ancestors have been served by such behaviour? One possibility is that feelings of love act as a "stop rule" that terminates our search for a mate, even if only temporarily, so we commit to one person and get on with the business of mating.

But that still poses the question, if the roads to love are so varied and random, how do we decide on a particular mate? It turns out that the problem of choice under uncertainty can be described and solved mathematically. Evolutionary psychologists Peter Todd at Indiana University in Bloomington and Geoffrey Miller at the University of New Mexico used a computer simulation to determine how a person might best choose from a number of potential partners. They set it up so that the person first assesses a number of the options before them to decide what is the best they can aspire to in terms of attractiveness, and then goes for the next person they come across who meets their aspirations out of those they haven't already encountered.

The researchers found that the optimum proportion of possible mates to examine before setting your aspirations and making your choice is a mere 9 per cent: so at a party with 100 possible mates, it's best to study only the first nine you randomly encounter before you choose. Examining fewer means you won't have enough information to make a good choice, examining more makes it more likely you'll pass the best mate by. No doubt, the models underestimate the complexity of real mate choice, but the fundamental insight is clear: don't search indefinitely before choosing lest you miss out on all the good mates or run out of time altogether.

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Who we fall for is determined by a mix of factors, some of which we are aware of, some of which we experience indirectly. Happenstance can play a major role, especially if we meet someone just after calibrating our aspirations, or at a particular stage of our hormonal cycle. There may be that special someone out there – but they're not necessarily the only one. ●

Martie G. Haselton is in the Center for Behavior, Evolution and Culture at the University of California, Los Angeles

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