

# Love & The Brain

## The New Brain Science of Romance, Relationship & Intimacy

*How brain science can help you create  
more passion, greater trust, and longer-  
lasting romantic relationships.*



Mark Waldman



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The New Brain Science of  
Romance, Relationship & Intimacy

By Mark Waldman  
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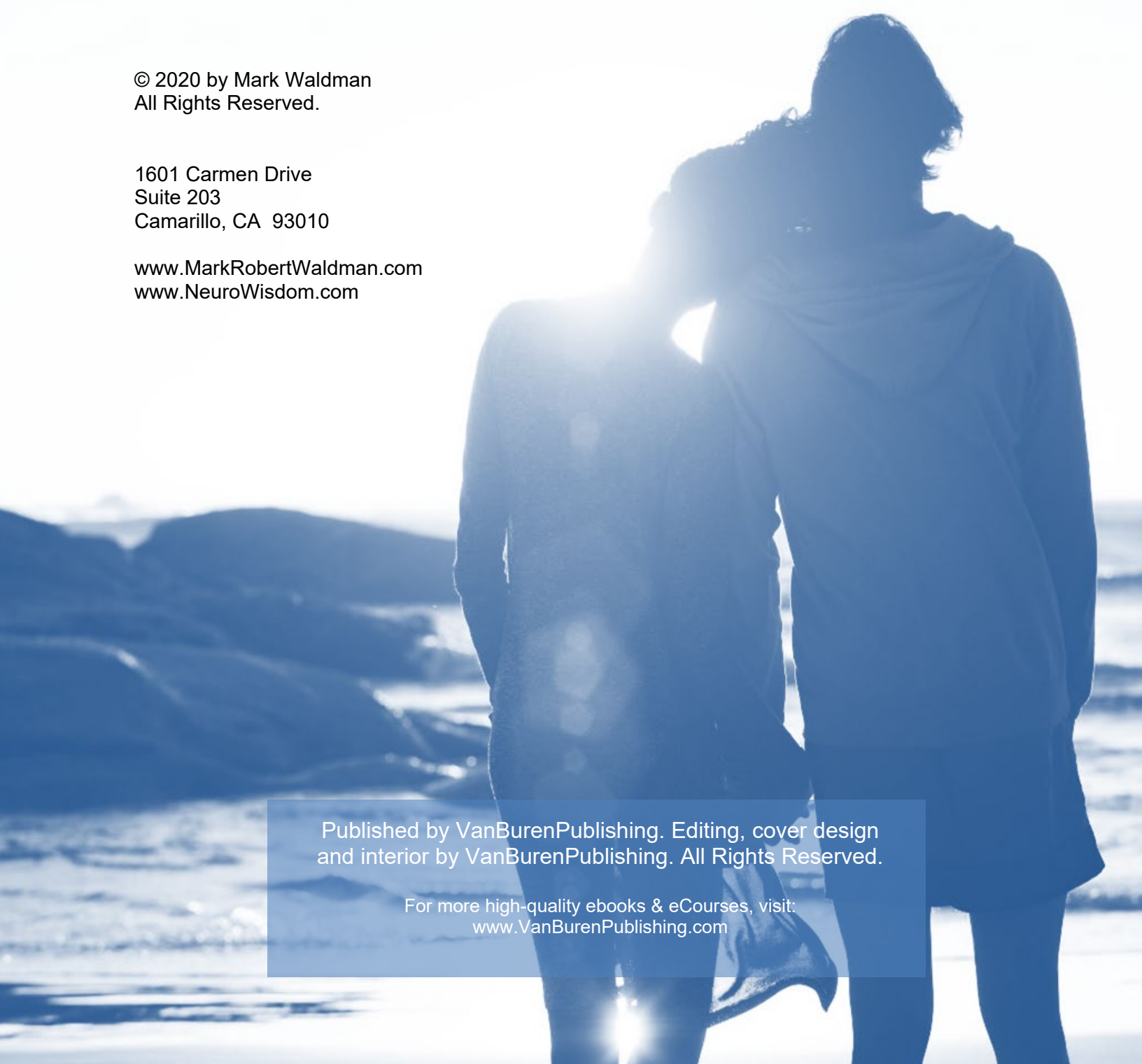
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**Mark Waldman** is one of the world's leading experts on communication, spirituality, and the brain. He is on the faculty of the Executive MBA program at Loyola Marymount University's College of Business and the Holmes Institute.



Mark has authored 14 books, including the national bestseller, *How God Changes Your Brain*, an Oprah pick for 2012. His research has been published throughout the world and featured in *Time*, the *Washington Post*, the *New York Times*, *Forbes*, *Entrepreneur*, *Investor's Business Weekly*, and *Oprah Magazine*.

Mark lectures throughout the world teaching communication, conflict resolution, and productivity-enhancement strategies to schools, corporations, and spiritual organizations. His clients include world-renowned universities, psychological associations, educational institutes, and government/civic organizations. He has appeared on PBS Television and NPR Radio, and he received the Distinguished Speaker award from the Mind Science Foundation.

Introduction...

# Love & Your Brain

I am thrilled that you felt a desire to read the passages in this book. I have been researching and writing about love since I published my first book, *The Art of Staying Together*, in 1998. Of course I, like you, have probably pondered what love actually is – from being cared for as a child, through the turbulent lusts of adolescence, to romance and marriage and possibly unconditional love – but I hope you never find an answer to what love is.

Our brain is filled with memorable experiences we may have labeled “love,” but those memories and labels are obstacles for experiencing what is actually occurring in the present moment with someone you care for or respect.

I will never write a book on love (there are too many of them anyway) because I know that by the time I’ve finished it, I will question everything I wrote. Instead, I’ve collected some of my favorite brief reflections on love, a few dating back ten years, for you to ponder. Some are academic but most contain a semblance of poetry which, for me, comes close to the experience of love.

Put yourself in a deeply relaxed state of mindful awareness as you read passages, searching for gems that will deepen search for serenity and love.

Mark Waldman




# Love is Not an Emotion

Love is one of those words that means something different to nearly everyone you ask. Even using a dictionary won't help, and here are just some of the synonyms people may use: synonyms: affection, fondness, tenderness, warmth, intimacy, attachment, endearment, devotion, adoration, doting, idolization, worship, passion, ardour, desire, lust, yearning, infatuation, compassion, care, caring, regard, concern, friendliness, friendship, kindness, charity, goodwill, sympathy, kindness, altruism, unselfishness, philanthropy, benevolence... the list is long, and many philosophers equated it with a form of madness.

Biologists consider it an instinctual drive to mate, but psychologists haven't been able to come to an agreement in over a 100 years, but here is what neuroscience shows (I'm specifically using Jaak Panksepp's brilliant research on mammalian emotions): love is not emotion; it's concept that is intensely meaningful for the individual, and through constant repetition the idea of love" becomes deeply encoded in long-term memory.

But feelings of lust, sexual desire, and the instinctual impulse to feel a sense of caring for another person...those are genuinely felt neurological emotions that happen in the present moment but do not last very long. Paul Ekman, who is the leading expert on tying conscious feelings to facial expressions, says this:

*"Is love an emotion? Let's put aside loving your job or a piece of clothing, in which the use of the word "love" is as a superlative. That still leaves romantic love and parental love: Are either of these emotions? I think not and here's why: the time frame for emotions and love are radically different. Emotions come and go, sometimes lasting as little as a few seconds, and rarely*



Consider this: Emotions are fleeting experiences. Most of our thoughts and feelings and ideas are also fleeting experiences but they aren't emotions. They are the conceptual product of an active imagination. If "love" is not an emotion, is it a fleeting impression coming from our imagination, or is it a long term memory that reflects all of our past beliefs about love and the strong emotional experiences of desire and lust?

It's both! We have thousands of conceptual memories reflecting our ideas and beliefs about love, and we have thousands of emotional memories from past romantic experiences. When, in the present moment, we are emotionally stirred by another person who appears attractive, our conscious minds rapidly vacillate between all of those old memories, blinding us to what we actually experiencing in the present moment with that person.

I believe, based on current neuroscientific evidence, that when we are emotionally involved with another person of interest, new concepts of love will emerge if we can keep our old beliefs at bay. If we enjoy that brief experience, we can capture a brand new feeling of love that transcendent, wordless, and enriching. It is something we cannot turn into idea but we can savor that brief moment before it is quickly replaced with another new loving/pleasurable/valued experience waiting for us to discover.

Simply put: when you are fully in the present moment with someone who is also fully present, you'll experience a form of love that will never turn stale, a love that is constantly changing – timeless, universal, and deeply spiritual

## NeuroTip

Write down your definition of love and look at the words. Does it fill you with bliss? If not, eradicate that useless belief!


# From the Heart (of your brain)

It's a beautiful metaphor, but to a surgeon, speaking from the heart seems odd. Why? Because you can replace the heart with a machine and still feel deep love. However, there is a part of your brain that processes all of the nuances that poets and mystics attribute to the heart – the Anterior Cingulate (AC) – and it sits neatly between the prefrontal areas of cognition and the limbic centers of the emotional brain.

What a perfect place for our neurological “heart,” a circuit that mediates our feelings and our thoughts. If too much emotion comes through, you'll react with anger or fear. But if you're too logical, you'll feel less empathy for others.

The AC plays a critical role in evaluating social situations, making moral decisions, and establishing empathy, trust, self-love and compassion. If damaged, these essential skills can be compromised or lost. It's also the newest evolutionary part of the brain, containing unique spindle neurons rarely found in other mammals. These von Economo neurons generate the intuitive processes that allow you to find creative solutions to your problems.

It takes three to four decades before it's fully functional, which may explain why teenagers have so many problems feeling empathy and have the highest numbers of divorce than any other age group. Women, it turns out, have slightly larger ACs than men, which may explain their greater capacity for care-giving and building deep loving relationships with others.



Unfortunately, it's highly susceptible to aging diseases. But here's the good news: our research shows that you can "exercise" the AC through mindfulness and other forms of contemplative meditation, which can increase its metabolic activity by an average of 25%.

Indeed, highly advanced practitioners exhibit capacities for compassion in situations that normally stimulate disgust in others, demonstrating the value of having a daily meditation practice which has the power to stimulate unique brain networks that regulate selfishness, altruism, and prosocial behavior toward others.

But it happens just beyond the reach of your normal everyday consciousness. Thus love is an intuitional experience, having deep, ineffable qualities that defy language and speech. No wonder why we call love the language of the heart and the soul that others capture in their poetry and songs.

When you practice loving-kindness meditations, you train your brain to feel compassion toward yourself and others, giving you more control when dealing with others who cause you difficulty and pain.

So by all means focus intensely on the qualities of kindness, compassion, and love, even for just a few minutes during the day, because you'll neurologically strengthen your heart-felt connection to the world.



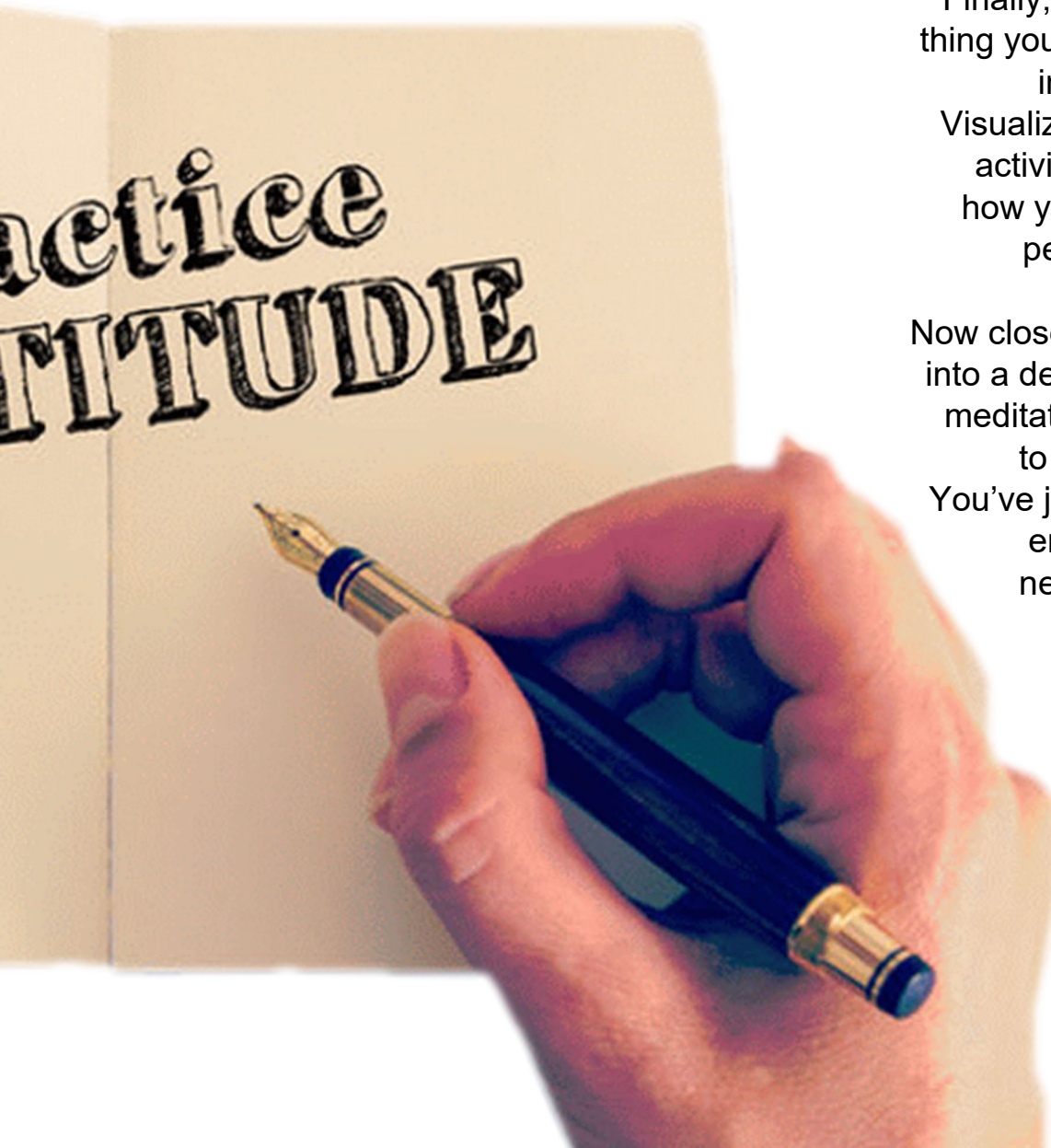
# Change Your Brain With Gratitude

Practicing gratitude for a few minutes a day can change your brain in ways that will enhance your confidence and mood, your self-love, and your ability to feel compassion for others. When you experience deep gratitude you'll also strengthen those circuits that are involved with moral decision-making which means that you can help your children become more socially responsible – simply by asking them to write down, each day, the things they feel grateful for.

If you create a ritual of writing letters expressing gratitude – especially if you are feeling anxious, depressed, or stressed out – you'll strengthen those parts of your brain that give you the power to improve your behavior and to change habits that limit your ability to achieve the goals you want.

The research is robust: People who practice gratitude are healthier, happier, more effective, and more resilient. They report better physical and psychological health, they engage in more healthy activities, and they are more willing to seek help for health concerns than individuals who do not consciously practice gratitude. When children and adolescents practice gratitude, their grades go up, their stress goes down, family relationships improve, and high-risk behaviors decline.





## **Exercise**

Let me show you how powerful gratitude can be.

Take out a sheet of paper and write down one negative thought or emotion you've been struggling with. Then write down at least 3 things you feel grateful for. The more you write, the more you'll feel your negativity melt away.

Finally, write down one kind thing you will do for someone in the next few hours.

Visualize yourself doing this activity and then visualize how you imagine the other person might respond.

Now close your eyes and sink into a deeply relaxed state of meditation, paying attention to how you feel. Voila! You've just strengthened the empathy and self-love networks in your brain!

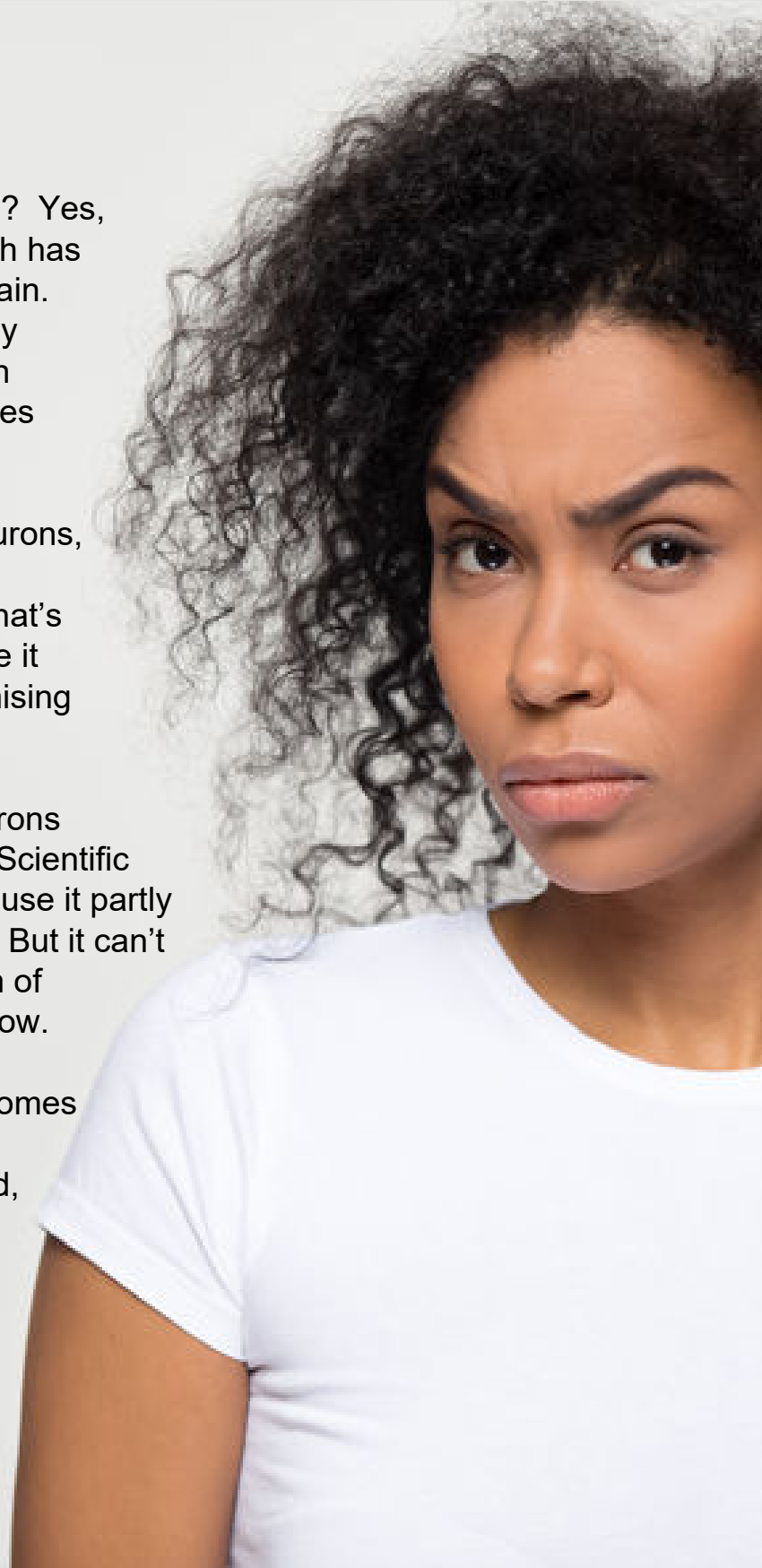
# With Matters of Love...

Does the heart have a “mind” of its own? Yes, but so does every other organ, and each has neurons similar to those found in the brain. They communicate with each other, they can “think” for themselves, and they can even act on their own, ignoring messages from your brain!

Your heart has thousands of cardiac neurons, but there's little evidence that it directly influences our feelings and thoughts. That's good, because if it fails, you can replace it with a synthetic pump without compromising your emotional or cognitive health.

Your gut, however, has 100 million neurons secreting dozens of neurotransmitters. Scientific American calls it our second brain because it partly determines our mental state and mood. But it can't make decisions or generate of any form of consciousness, at least as far as we know.

That's the job of the brain. So when it comes to love, it's safer to trust your gut-brain connection, and maybe even your blood, which carries the neurochemicals of kindness and compassion to every body cell.



A woman with dark, curly hair is shown in profile from the back, wearing a white t-shirt. The image is partially cut off on the left side.

# ...Trust Your Gut, Not Your Heart

The brain is the head honcho, but it is informed by electrochemical changes in your heart. If it beats too fast as you look at a potential lover, your gut will tighten up, which wakes up your limbic brain. Your amygdala gets excited, releasing a variety of hormones and neurochemicals. These speed up the heart, which pumps extra energy into your muscles. You might even notice a tingling in your toes they prepare to propel your body into action. If it's "love at first sight," you'll leap into the arms of your partner. If not, then you'll probably "leave at first fright."

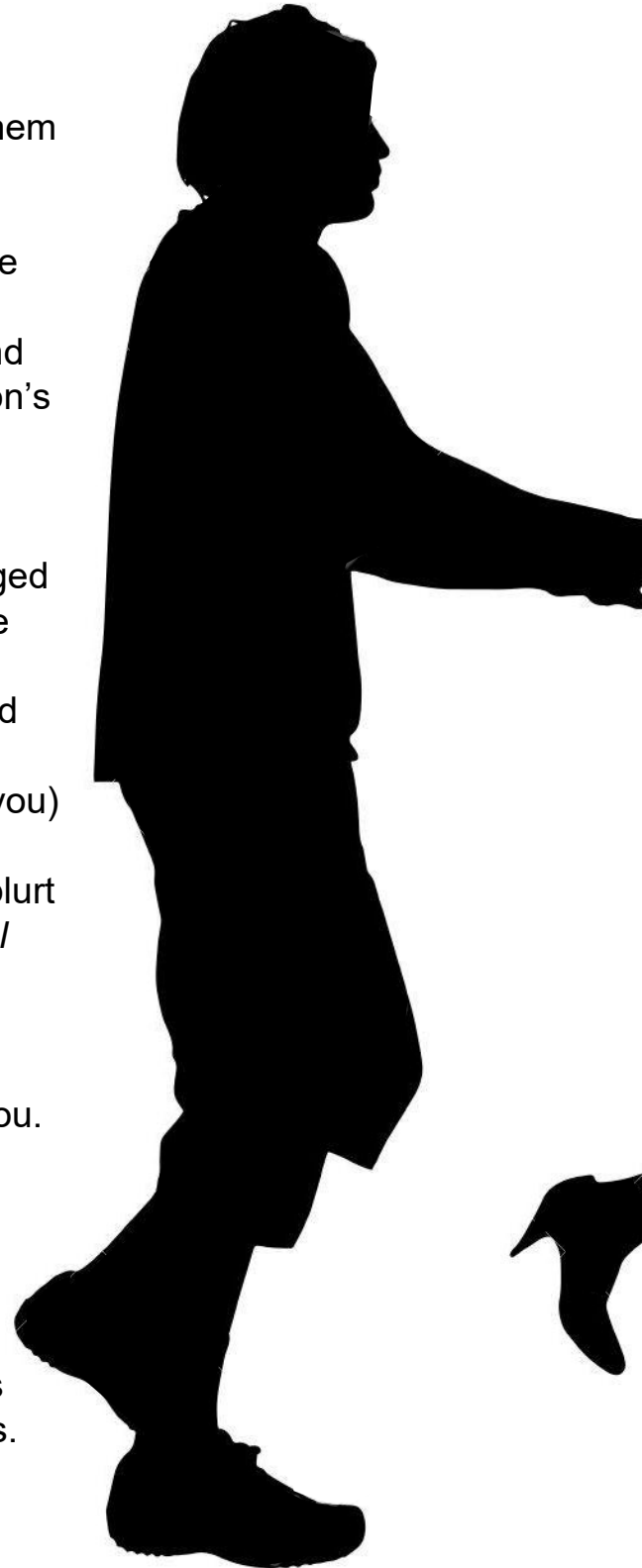
After this neural cacophony recedes, a glimmer of consciousness finally emerges in the brain. But now it's too late: you're either bitten or smitten, and there's nowhere left to run! So what can you do to protect yourself from a "broken" heart? Trust in your inner and higher wisdom, which, as far as neuroscience is concerned, is generated by an orchestra of every organ, neuron, and cell. Truly, a symphony of the soul!

# Honesty is Rarely the Best Policy

Telling someone how you "honestly" feel about them can easily cause defensiveness and neurological conflict in the listener's brain. Usually, when a person says "Let me be honest with you," they are usually intending to criticize you, something your brain doesn't handle very well. And if you respond by sharing your negativity without the other person's explicit consent, you'll offend, not enlighten.

Honesty is a subjective opinion, not a truth, and brain-scan research shows that it's a highly charged and biased emotion, and not a fact. The next time you feel the urge to be honest about something that bothers you about another person, pause and consider this: Will that person be appreciative or overwhelmed by your "honesty?" Can they (and you) handle strong expressions of anger, hurt, or disappointment? If you can interrupt the urge to blurt by briefly dropping into a state of *Relaxed Mindful Awareness* you'll be able to watch what is really behind your honesty.

Sit with your feelings and let them flow through you. Then tell the other person that you'd like to talk about something difficult when they feel ready, ideally on a different day when the emotional impulsivity has died down. If both of you can commit to being gentle and kind when speaking, a problem that would often take weeks or months to work through can be resolved in 10-20 minutes.



# Eliminate Conflicts Before they Begin

Did you know that the slightest form of negativity can instantly sabotage a conversation? If you mumble about the weather, or slightly frown when a colleague says something displeasing, stress neurochemicals are released in both the speaker's and listener's brain.

Even expressing anger in therapy can make the problem worse because it neurologically strengthens the negative memories. If you don't find a way to quickly defuse it, it damages parts of the brain that regulate emotions.

Expressing negativity disrupts the decision-making functions in our frontal lobe, impairing reason and social awareness. Compassion is compromised and empathy is lost.

To make matters worse, when you speak ill of others, it increases prejudice in the listener's brain, even when both parties know that the information is false! That's why political mudslinging continues, and it works by generating neurological distrust. Your instinctual brain assumes that a negative word is a real threat coming from the world.

Anger is a particularly dangerous because it gives the speaker a false sense of certainty, confidence, and optimism, and this misguided pleasure encourages the person to get angrier. However, repressing anger just pushes it into unconsciousness. What's the best solution: just watch those negative feelings thoughts as you remain utterly relaxed. Don't judge them and don't try to make them go away. You'll see that they quickly evaporate. After all, they're just old memories from the past projected onto a future that doesn't exist.



# Soul Mates, Romance...

Spoiler alert: what you are about to read may ruin your belief in soul mates! For example: Did you know that the more smitten you are in the beginning of a relationship, and that the harder you search for that perfect partner, the more likely your relationship will fail?

Enter biology: Romantic love is an evolutionary mating ritual found in many living species, but the desire to remain faithful often fades away. In fact, today's research shows that romantic love is indistinguishable from addiction.

Enter neuroscience: It confirms the addiction hypothesis because the "in-love" feeling is caused by the release of tremendous quantities of dopamine, the pleasure chemical in your brain. Here's the problem: Dopamine fades away with familiarity, similar to eating just one flavor of ice cream every day. Your brain gets bored with the repetition of romantic rituals, and it then seeks new experiences of love.

But there's a bigger problem. A "soul mate" is a fantasy that often grows out of adolescent dreams, and for the past 70 years they have mostly been shaped by Disney movies! We imagine the perfect knight in shining armor, or the beautiful princess who will love us no matter what, believing that we will find the Promised Land of everlasting true love.

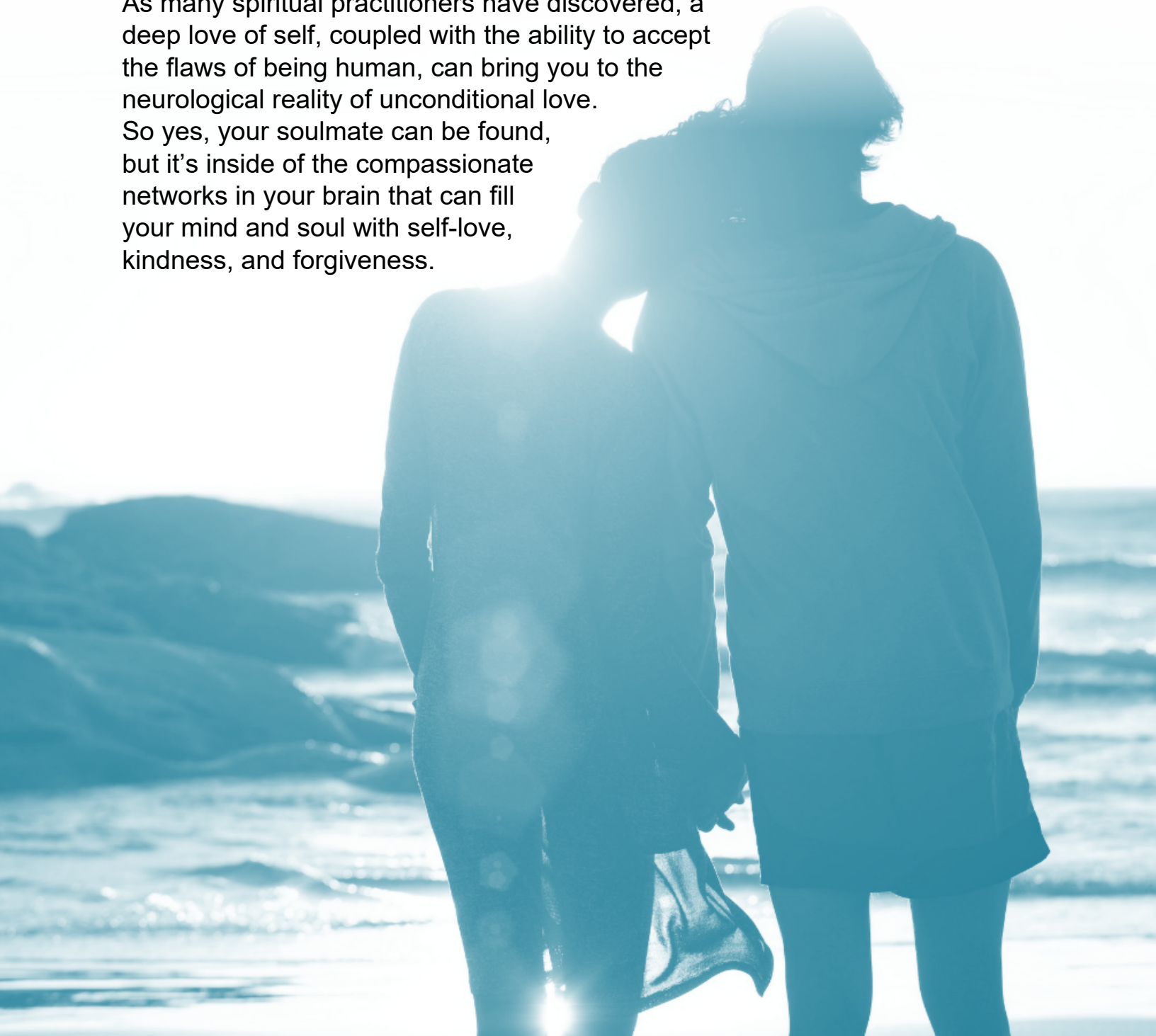
Then, in adolescence and often for many decades beyond, we project that imaginary dream onto others. But when the dopamine attraction wears off, and you begin to see the imperfections (the reality) of the other person, disappointment blossoms point us in the direction of rejection. If too much dopamine is released during that passionate stage of desire, you might even overlook destructive behaviors that can lead to an abusive relationship.

# and Your Brain

Romantic love is a wonderful feeling, but the neurobiology of lasting relationships depends on other universal factors: mutual trust and respect, companionate friendship, shared values and responsibilities, and – at least for most humans – fidelity. The newest research shows that it is your willingness to see relationships as a journey, not as an ideal image of perfection that will lead to mature romantic love.

As many spiritual practitioners have discovered, a deep love of self, coupled with the ability to accept the flaws of being human, can bring you to the neurological reality of unconditional love.

So yes, your soulmate can be found, but it's inside of the compassionate networks in your brain that can fill your mind and soul with self-love, kindness, and forgiveness.





# How We Understand Each Other

Our brains are designed to resonate to the emotional and intellectual state of the other person. It's called neural resonance, and it's the way we learn how to cooperate with others. You enhance neural resonance by listening deeply to the other person, speaking briefly, asking for feedback, and staying focused on what the other person says. Their words are more important than yours!

If they are truly interested and capable of listening to you, they will stay focused on what you say. If they aren't listening to you, or you to them, there's no understanding, connection, or compassion

# We Speak Too Much And Listen Too Little

Our self-centered mind is often thinking about what we're going to say next, so we don't fully listen to the other person. But if you interrupt this habitual tendency and literally meditate on what the other person is saying, an incredible intimacy will be created. If you pay close attention to their tone of voice, a recent Princeton brainscan study demonstrated that you can predict what a person is about to say BEFORE you hear their words.

Everyday consciousness is filled with superficial speech. So before you speak to another person, consider these words of wisdom from an ancient Hasidic Rabbi: Will my words *improve* the silence?

Rumi put it this way:

Silence is an ocean.  
Speech is a river.  
When the ocean is searching for you,  
Do not walk into the language-river.  
Instead, listen to the ocean  
*And bring your talky business to an end!*  
Then wait.  
Soon there will come a trembling from within,  
A place where words are born of silence,  
A place where the whispers of the heart arise.



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