Attraction Science

By Jake Teeny

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Chapter 1: What is Love?

Have you ever wished that love potions were real? That you could go down to your local corner store, look to the left of the Tylenol and find *Loveable®: Taking the 'un' out of unrequited.* I imagine these would require a prescription.

Now, although this class won't teach you how to exactly brew one of those pink and smoky potions, I will describe some of the ingredients that go into the formula. But before we start on the recipe, we should first have a better idea of what we're actually making.

That is, what is love?

To the ancient Greeks, love consisted of many categories, the more common ones being *eros* (passionate love), *philia* (parental love), and *agape* (God's love for man). In modern psychology, however, love is classified into four subtypes:

Companionate love: the love between friends, one of intimacy and commitment

Romantic love: the all-consuming sexual arousal paired with comfort and security

Fatuous love: sexual attraction and commitment to the other without the emotional closeness

Consummate love: the love that contains intimacy, passion, and commitment; this is the love we strive for in romantic relationships

But if we expand our analysis of love, turning from our conscious experience of it to how it emerged in our evolutionary history, we can gain even further insight into what this magical emotion really is.

In the early 90's, researchers were studying prairie voles, when they discovered a very important neuropeptide involved in their social and romantic behaviors: oxytocin. For example, the monogamous voles had oxytocin receptors all throughout their brain, whereas the polygamous voles had only a small, localized region of them.

In humans, oxytocin receptors are replete in our brains, with study after study showing that this neuropeptide is involved with many of our own social and romantic behaviors—along with a host of other neurochemicals, like dopamine and serotonin.

During human evolution, our brains grew to reward us for forming social groups (as this improved survival) and becoming romantically involved (in order to spread on our genes). For example, just as food brings us pleasure when we eat it (to encourage that we do it), so do our brains release these "feel-good" neurochemicals to encourage socializing behaviors.

But it's not just that we feel better when we have social relationships; we also don't do so hot when we're alone, either. Thus, psychologists today have described our inclination for social connection as the *need to belong*: our innate desire to form and maintain strong and stable interpersonal relationships.

For example, divorced, single, and widowed individuals (compared to married individuals) have a significantly increased chance for heart attacks, tuberculosis, and even cancer. From this perspective, the crazy things we do for love may seem slightly more rational.

But whatever love exactly is or results from, we cannot definitively say. So although I can't tell you the exact consequences of ingesting this "love potion," I can at least promise that it will taste good going down.

* * *

Love on the Brain? Ever wondered if "love at first sight" is real? See what the science has to say.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497.

Insel, T. R., & Shapiro, L. E. (1992). Oxytocin receptor distribution reflects social organization in monogamous and polygamous voles. *Proceedings of the National Academy of Sciences*, *89*(13), 5981-5985.

Chapter 2: Women & Men

When it comes to love and attraction, centuries of writers and philosophers—from the ancient poet Ovid to the modern-day book *Men Are from Mars, Women Are from Venus*—have regarded our sexes as *similar* but distinct species. But rather than relying on personal introspection for insight into gender differences, let's turn to the science.

In 1989, one study had two college aged research assistants (one male, one female[1]) pretend to be normal students as they stood in separate spots around campus. And when a passing college student was deemed to be good looking, the research assistant approached, complimented the other's attractiveness, and then asked one of following three things:

Would you 1) *…go out with me tonight?* or 2) *…come over to my apartment tonight?* or 3) *…go to bed with me tonight?*

When the women were approached, they agreed to go on a date about 55% of the time. However, when it came to the second two requests, it dropped down to 5 and then 0% agreement.

When the men were approached, however, only about 50% agreed to the date, while coming back to her apartment or simply skipping to sex resulted in agreement at rates of 70 – 75%.

So as you can see, there are some differences.

According to evolutionary psychology, women—who have the responsibility of bearing the child—must be selective about who they want to mix genes with. On the other hand, men—who are able to spread their genes like Johnny Appleseed—are inherently predisposed for casual sexual encounters. And in fact, as a result of men's "sexual freedom," they are more likely to misperceive sexual invitation, too.

When researchers bring men and women into the lab to interact, men consistently rate the woman as being more flirtatious than she rates herself. And in fact, even males who are simply *observing* the interaction report this bias!

However, it is hard to determine whether these gender differences really emerge because of our evolutionary biology versus what we were simply raised to believe and expect.

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[1] Most of the research on love and attraction has focused on heterosexual relationships. As such, many of the studies referenced in this course (including this one) have men matched with women and vice versa. However, the research discussed in this course can be applied to anyone, regardless of sexuality.

For example, research shows that men become more agitated at *sexual* infidelities, whereas women become more agitated at *emotional* infidelities (i.e., the man is worried about someone else's genes impregnating his partner, while the woman is more worried about losing the resources associated with her partner's affection).

And even though data support these findings, our society has force fed us this narrative of men as the breadwinners and women as the baby incubators since our birth. Thus, maybe if we had a different social structure, these differences would have never emerged.

However, more important than knowing these sex differences, it is simply valuable to understand that we are *all* different. Activities and jokes which appeal to you won't always interest your romantic other. So, as we go through this course—and as you court your own partner—keep this awareness in mind, treating every person as an individual just as unique as yourself with their own unique and worthy pursuits.

* * *

Love on the Brain? Recent research supports another difference between men and women: the effect of their storytelling ability on attractiveness.

Abbey, A. (1982). Sex differences in attributions for friendly behavior: Do males misperceive females' friendliness?. *Journal of Personality and Social Psychology*, *42*(5), 830.

Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and brain sciences*, *12*(01), 1-14.

Clark, R. D., & Hatfield, E. (1989). Gender differences in receptivity to sexual offers. *Journal of Psychology & Human Sexuality*, *2*(1), 39-55.

Chapter 3: Physical Attraction

If you've ever used a dating website, you've probably answered a number of quizzes about your personality and interests before waiting for the website's complex and discerning algorithm to match you with your soul mate.

Unfortunately, though, only one metric consistently predicts whether you'll be interested in romantic pursuit: the other person's physical attractiveness.

However, before you deem humans as the shallowest of creatures, consider this: If you had a potential mate who had all the personality qualities you could desire in another, but you simply did *not* find them sexually attractive, would you consider dating them?

One theory on why physical attraction is so powerful comes from evolutionary psychology and the *good genes hypothesis*. Because physical attractiveness serves as a marker of physical health, the more attractive you are, the more physically healthy you seem. Thus, in order to give our genes/offspring the best chance at survival, we want to mate with the healthiest (i.e., most attractive) people.

For example, research shows that we find symmetrical faces (a sign of healthiness) to be more attractive than *a*symmetrical faces (a sign of deformity or unhealthiness). In fact, this preference for symmetry even extends to babies who spend more time looking at pictures of symmetrical (vs. asymmetrical) faces!

But in today's society, attractiveness implies far more than just healthiness.

In what's known as the *halo effect*, we tend to perceive attractive (vs. unattractive) people as more self-assertive, more exciting, more stable, more honest, more altruistic, and less irritating—all simply because they're attractive.

Generally, heterosexual men find narrower noses and chins, higher eyebrows, and bigger eyes in women to be more attractive. Whereas heterosexual women tend to prefer darker eyebrows and lashes, an upper half of the face that's broader than the lower half, and a prominent jaw/chin.

However, physical attractiveness is perceived in more than just your phenotype, for your social behavior can influence it as well.

In a famous psychology study, male participants were told they'd be speaking with a female participant over the phone. Although these women were randomly assigned to the various men, the men were presented with one of two photos (either an attractive or unattractive woman) that was supposedly who they'd be speaking with (when really, neither picture represented any of the female participants).

After the conversation, both the participants (the man and the woman) as well as observers rated the women assigned the attractive picture as more engaging, more extraverted, more entertaining, and, overall, more attractive.

Although the woman in the photograph was never the woman men were speaking with, because men were more enthusiastic speaking to an "attractive woman," the women in turn responded favorably. That is, being treated as if you are attractive actually makes you appear more attractive.

In this regard, even if you don't think you're physically attractive, simply acting like you are will encourage others to treat you like are, making you more physically attractive in the end.

* * *

Love on the Brain? Research shows that our perception of our *own* attractiveness can be a little distorted—but how so?

Finkel, E. J., Eastwick, P. W., Karney, B. R., Reis, H. T., & Sprecher, S. (2012). Online dating a critical analysis from the perspective of psychological science. *Psychological Science in the Public Interest, 13*(1), 3-66.

Franklin, R. & Zebrowitz, L (2015). Attraction and Beauty. *Noba: Knowledge Evolved*: http://nobaproject.com/modules/attraction-and-beauty

Chapter 4: Reciprocal Liking

Before we start today's lesson, I want to take a moment to thank you for reading this course—or rather, for signing up for Highbrow courses in general. Already, I know that if we met, I would like you and I'd want to spend time with you.

Now, considering you just read that, don't you like *me* just a little bit more?

One of the surest ways to increase attraction is to express your liking for the other person. In a psychological phenomenon known as *reciprocal liking*, when you convey your liking for another person, they automatically increase their liking for you.

For example, researchers brought participants into the lab and had them interact with a *confederate* (i.e., an experimenter who is posing as a legitimate participant). In this study, the participant and confederate had a 5 – 10 minute conversation, before they each wrote down their thoughts about the interaction.

And after separating them into different rooms, the participant received his or her partner's "impression" of the interaction.

Although the partner's impressions were always canned responses, the researchers tweaked them slightly to see what would make the participant like their partner the most. However, one variable consistently emerged the most useful: if the participant learned that their partner "liked and really enjoyed working with them," then the participant really liked and enjoyed working with them, too!

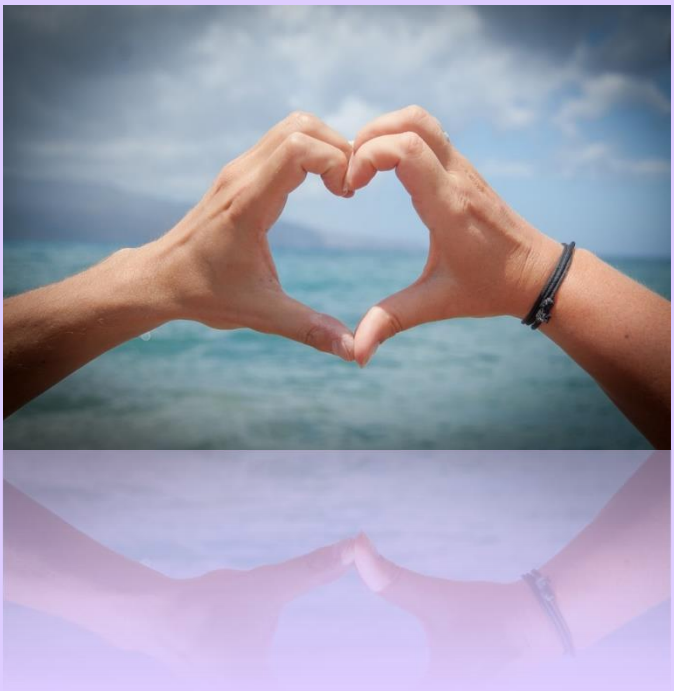
Expressions of liking like this work in part through boosting the other's self-esteem. For according to *sociometer theory*, self-esteem serves as an "internal barometer" for how valuable you believe you are to others. That means, if you have high self-esteem, you tend to believe others like you, whereas having low self-esteem indicates you don't believe you're liked.

As we discussed in the first lesson, being liked by others is highly motivating (evolutionarily, we needed to be liked by others in order to join groups and increase our survival rate). However, reciprocal liking can increase attraction even further if you enact a similar psychological phenomenon called *reciprocal sharing*.

Research has shown that people tend to share information about themselves to the same extent (or depth) as others are willing to share about themselves. For example, if I tell you

something shallow about myself (e.g., I like dogs more than cats), in return, you're only going to tell me something shallow about yourself, too.

Instead, if I simply *start* with cursory information about myself, but then progress to increasingly deeper remarks, you in turn will share deeper information about yourself. And as a result, the heightened intimacy of these deeper questions leads to heightened attraction overall.



In fact, this technique has been refined so precisely, that there are a set of experimentally validated questions that have been shown to reliably increase attraction. In fact, a pair of individuals who had participated in the original research on these questions actually went on to get married!

Interested in what these questions may be? See below ;)

* * *

Love on the Brain? Follow this link to see the scientifically tested "love inducing" questions.

Aronson, E., & Worchel, P. (1966). Similarity versus liking as determinants of interpersonal attractiveness. *Psychonomic Science*, *5*(4), 157-158.

Collins, N. L., & Miller, L. C. (1994). Self-disclosure and liking: a meta-analytic review. *Psychological Bulletin*, *116*(3), 457.

Chapter 5: Seductive Similarity

Have you ever told someone: "I would never date a person who believes *X*," where '*X*' could be a social or political belief, maybe a religious one, or even something as minimal as whether they use Apple versus Google Maps (don't even get me started on this…)

Over 2,000 years ago, Aristotle tapped into this idea when he expressed that the best friends (platonic or otherwise) are those who agree on the most valued virtues. For example, a disagreement on TV show preference probably won't end a relationship, but disagreement on something more substantial (e.g., whether littering is okay) may cause a divide.

This illustrates the idea of *self-other overlap*: the closer you feel to another person, the more you perceive them as similar to (or as an extension of) yourself. For example, when participants were brought into a brain scanner and asked to imagine that their good friend (vs. an acquaintance) was going to receive a shock, the participant's brain lit up in the same area as if the participant him or herself were going to be zapped.

However, just as interpersonal closeness makes another person seem more similar to you, so does a similar other suddenly seem closer to you.

For example, similarity is so powerful that there is a better than average chance you will marry someone with a similar first or last name—even if that's just a single initial! And this effect extends to even more trivial similarities, too. In one study, participants who saw a confederate's experiment-number was similar to the participant's own birthday ended up liking them more!

However, just as similarity increases liking, *dissimilarity* increases disliking. For as the science shows time and time again, opposites, in fact, *do not* attract.

For example, one study looked at over 1,500 different friend pairs and examined their personality traits, attitudes, values, and recreational activities. For all of these pairs, 86% of the measured variables were similarly scored between friends.

In another study, the researchers recruited a large lecture class, this time randomly assigning participants into pairs to interact with one another. And although only 23% of these pairs actually spent time together outside of the research session, those pairs were significantly more similar than the pairs who didn't hang out again.

When it comes to romance, the allure of someone "different" may be enough to motivate interest; however, too many differences will end up in too many clashes and the relationship is unlikely to persist.

Still, the same rules don't always apply to everyone; for example, people high in *sensation seeking* (i.e., those who seek out varied, novel, or intense experiences) do prefer dissimilar partners. As well, other research suggests that if both partners acknowledge their discrepant interests, this can help sustain the relationship, too.

At the end of the day, though, it's probably better to settle on someone similar to you. Or at least make sure they use Google Maps over any other alternative.

* * *

Love on the Brain? Maybe dissimilarity isn't a dealbreaker for you, but what does the science suggest are common dealbreakers in relationships?

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of Other in the Self Scale and the structure of interpersonal closeness. *Journal of personality and social psychology*, *63*(4), 596.

Bahns, A. J., Crandall, C. S., Gillath, O., & Preacher, K. J. (2016). Similarity in Relationships as Niche Construction: Choice, Stability, and Influence Within Dyads in a Free Choice Environment. *Journal of Personality and Social Psychology*.

Beckes, L., Coan, J. A., & Hasselmo, K. (2013). Familiarity promotes the blurring of self and other in the neural representation of threat. *Social cognitive and affective neuroscience*, *8*(6), 670-677.

Jones, J. T., Pelham, B. W., Carvallo, M., & Mirenberg, M. C. (2004). How do I love thee? Let me count the Js: implicit egotism and interpersonal attraction. *Journal of Personality and Social Psychology*, *87*(5), 665.

Chapter 6: The Secret of Secrecy

Anyone who has heard of love has heard of *Romeo and Juliet*; however, they may not have heard that this play inspired an actual, social psychological term: the *Romeo and Juliet effect*.

This phenomenon asserts that when there is interference or suppression of a romantic relationship (usually by parents) feelings of romantic love intensify—an effect occurring due to *reactance*. That is, when we are told we can't do something, we feel that our freedom is being constrained, and to prove that we are in fact "still free," we want to do exactly what's being prohibited.

Thus, if a parent tells you that you can't date someone, you're innate desire to freely make your own decisions means you pursue the romantic interest even more strongly, resulting in augmented attraction.

However, as we age, outsider approval becomes less dictating in romantic pursuits; but in its place, a related factor emerges with similar effects, namely, *secrecy*.

Researchers brought participants into the lab in groups of four and put them into heterosexual pairs, informing the participants they'd be playing a card game against the other pair. And while one of the pairs played the game normally, the other pair was additionally told to have their feet touching during the game (i.e., play footsie).

Importantly, though, half of all footsie-partners were told to play their flirtatious game in secret, while the other half of footsie-partners played with the other pair aware of their side game.

Afterward, the researchers looked at how attractive the participants rated their partners, and although playing footise increased overall attraction, those who played it in secret were attracted to their partners the most.

Other studies conducted by these researchers also showed that people think more about previous secret (vs. non-secret) relationships, and furthermore, secret (vs. non-secret) relationships result in more obsessive preoccupation with it.

So why is a dash of secrecy so powerful?

First, if you're in a secret relationship, you are thinking about it more frequently to remember what should not be revealed. And simply by thinking extensively about something, you infer (via *self-perception*) that this relationship must be important to you. That is, considering your own behavior, you conclude: "If I'm thinking about this other person so much, I much really like them!"

Second, with the relationship being secret, it implies a sense of *scarcity*. That is, because you're keeping this relationship from other people, you are treating this partner as if they were something "rare" and not to be lost. And as decades of research has shown, the rarer we think something is—even if we're not interested in it!—the more valuable we tend to perceive it.

However, although secrecy may boost attraction in the beginning, sustained secrecy reduces commitment and trust, decreasing relationship satisfaction in the long run. So if you're in a secret relationship (or plan to use "secrecy to your advantage"), don't keep it a secret for too long or all your progress may very well be lost.

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Love on the Brain? Secret romances can have some other effects on you that probably wouldn't have believed possible.

Driscoll, R., Davis, K. E., & Lipetz, M. E. (1972). Parental interference and romantic love: the Romeo and Juliet effect. *Journal of Personality and Social Psychology*, *24*(1), 1.

Wegner, D. M., Lane, J. D., & Dimitri, S. (1994). The allure of secret relationships. *Journal of Personality and Social Psychology*, *66*(2), 287.

Lane, J. D., & Wegner, D. M. (1994). Secret relationships: The back alley to love. In: *Theoretical Frameworks for Personal Relationships*. Eds.: Erger, R. & Gilmour, R. Hillsdale. (pp. 67-85). Hillsdale, NJ, England: Lawrence Erlbaum Associates

Chapter 7: Body Language

Often times when we imagine attracting a potential interest, we fantasize of writing beautiful love poetry, or composing a moving song, or rose petals and compliments and fancy dinners and fireworks. But sometimes, subtler attempts are better.

That is, let's talk about *body language*.

The way we sit and how we position ourselves communicate a lot to romantic interests; in fact, if verbal and nonverbal information contradict one another, people are five times more likely to believe the nonverbal information.

In general, leaning forward or angling your knees toward someone implies that you want to be there and are paying attention to them. However, leaning back or pointing your knees toward the door (or maybe even another potential interest) says otherwise.

But one pretty failsafe body gesture to increase attraction is called *social mimicry.*

Social mimicry involves mirroring another person's posture and pose, which results in increased liking for the copycat. For example, if the date across from you has both arms on the table, and subtly, you duplicate that position with your arms on the table, s/he will naturally come to have greater affection for you.

To document this phenomenon, researchers went to multiple bars where speed dating was being conducted. Prior to the event, they instructed half of the female participants to mimic the verbal and nonverbal behaviors of their male partners, while the other half did not get these directions.

Looking at the data, the researchers found that the women who had mimicked the men (vs. those who hadn't) were rated to have better interactions, were more likely to be offered contact information, *and* were actually evaluated as more sexually attractive.

Researchers contend that mimicking the other person makes him/her feel more similar to you, by which, that person becomes more willing to trust, help, and subsequently like you. However, rather than jumping straight to mimicry (and thus subtly expressing your liking), another psychological phenomenon can be used to your advantage first.

According to the *gain-loss effect*, we respond more positively to increases in attraction rather than a constant expression of it. For example, if I smile right when I see you, naturally, you will feel good. However, if I don't smile right when I see you, and instead, wait a few moments for you to say something before smiling, then you will feel even better.

This slight delay in expressing your affection makes the other person feel like they've "earned" it. In which case, they now evaluate that smile (and you) more positively than if you'd given it right off the bat.

Similarly, this effect can occur with head nodding as well. That is, rather than nodding at everything the other person says, wait to do so after more substantial remarks (especially ones that convey something meaningful) to increase your liking.

Just be careful not to restrict your smiling or nodding too much. No one likes to hang around a sourpuss for very long.

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Love on the Brain? Not only can our words and body language be used to increase attraction, but under the right circumstances, simply sitting quietly can make others like us more, too.

Argyle, M., Alkema, F., & Gilmour, R. (1971). The communication of friendly and hostile attitudes by verbal and non-verbal signals. *European Journal of Social Psychology*, *1*(3), 385-402.

Aronson, E., & Linder, D. (1965). Gain and loss of esteem as determinants of interpersonal attractiveness. *Journal of Experimental Social Psychology*,*1*(2), 156-171.

Hale, J., & Hamilton, A. F. D. C. (2016). Cognitive mechanisms for responding to mimicry from others. *Neuroscience & Biobehavioral Reviews*,*63*, 106-123.

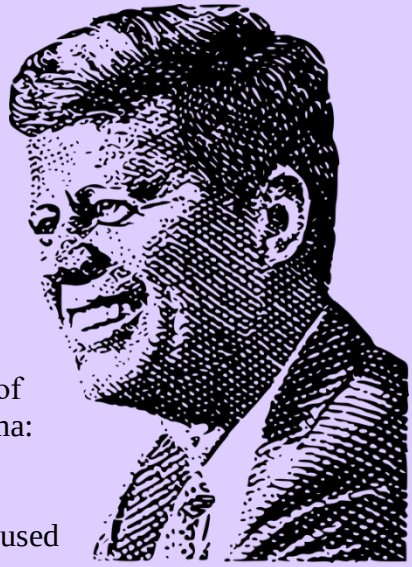
Guéguen, N. (2009). Mimicry and seduction: An evaluation in a courtship context. *Social Influence*,*4*(4), 249-255.

Chapter 8: Becoming Charismatic

Have you ever met someone, who, within only a few moments of conversation, you liked immediately? There was just something about them…but whatever it was, you couldn't help feeling awed by little more than their presence.

Charisma is the personal quality of an individual who is capable of influencing or attracting large varieties of people. For example, research shows people are happier around charismatic friends and employees rate their work environments more positively under charismatic bosses.

Needless to say then, being charismatic does wonders for your attractiveness. But what exactly makes a person charismatic?



Frankly, the research is relatively underdeveloped on this topic; however, there are a few general characteristics that have been ascribed to the charismatic: 1) they speak with vocal variety (i.e., they use speech inflection), 2) they tend to maintain eye contact while also keeping a relaxed posture, and 3) they often have very animated facial expressions.

To a recipient of the charismatic's attention, these various traits exhibit engagement with the person, inspiring a sense of "specialness" in the recipient. But rather than trying to juggle all of those qualities on the fly, here's a simple trick to simulate charisma: *ask questions*.

Research shows that on average, 30 – 40% of everyday speech is used to communicate information about ourselves and our relationships, with about 80% of social media posts simply announcing one's personal experiences. For when researchers put participants in brain scanners and have them disclose information about themselves, the *reward centers* in the brain (i.e., the same areas activated in eating or having sex) light up.

That is, simply getting people to reveal information about themselves makes them feel intrinsically happier; however, rather than attributing this emotional boost to their brain's neurochemistry, they will instead attribute it to the "charisma" of the person in front of them.

Although simply asking questions (and being engaged when listening to the other's answers) can increase perceptions of charisma, so, too, will the speed with which you provide your own answers to questions or remarks.

Research published in 2015 had participants come into the lab and answer 30 general knowledge questions (e.g., "Name a precious gem"). Next, the researchers interviewed friends from the participants' social networks to see how much they rated the participants as charismatic.

And as the research revealed, the faster that participants had been able to answer the questions (i.e., the quicker they were on their feet) the more likely their friends rated them as charismatic.

Impressively, this finding was true above and beyond one's intelligence or extraversion. Thus, being able to come up with answers, thoughts, and questions on the fly is a definitive quality of the charismatic.

So, the next time you want someone to describe *you* as charismatic, be sure to ask engaging questions, while providing "speedy" thoughts or witticisms of your own.

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Love on the Brain? Crazy for charisma? Here's some more research on this most sought after personality trait.

Awamleh, R., & Gardner, W. L. (1999). Perceptions of leader charisma and effectiveness: The effects of vision content, delivery, and organizational performance. *The Leadership Quarterly*, *10*(3), 345-373.

Baeza, A. H., Lao, C. A., Meneses, J. G., & Romá, V. G. (2009). Leader charisma and affective team climate: The moderating role of the leader's influence and interaction. *Psicothema*,*21*(4), 515-520.

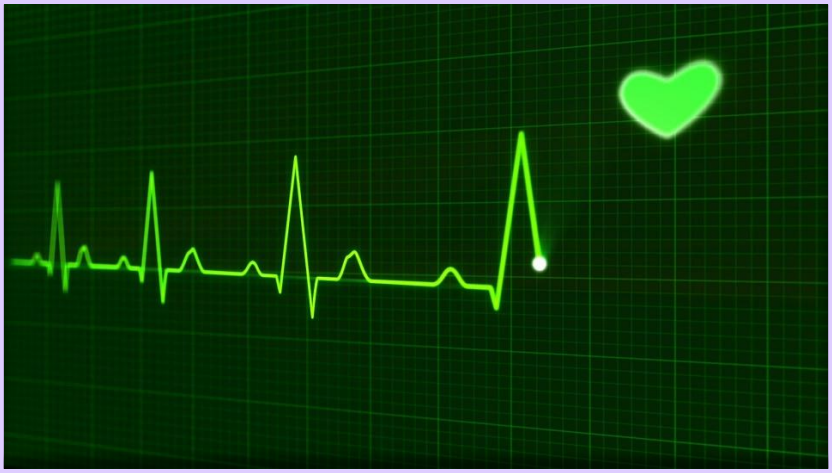
Tamir, D. I., & Mitchell, J. P. (2012). Disclosing information about the self is intrinsically rewarding. *Proceedings of the National Academy of Sciences*,*109*(21), 8038-8043.

von Hippel, W., Ronay, R., Baker, E., Kjelsaas, K., & Murphy, S. C. (2016). Quick Thinkers Are Smooth Talkers Mental Speed Facilitates Charisma. *Psychological science*, *27*(1), 119-122.

Chapter 9: Awesome Arousal

We've all been there, struggling to come up with a good date for our romantic interest. You want it to be memorable but comfortable, fun but not crazy. So here's my professional recommendation: *take your date to a have their blood drawn*.

Researchers brought male participants into the lab and had them causally converse with a female confederate (i.e., an experimenter in disguise). However, for half of those participants, there was a subtle change to the experimental procedure: they believed they'd have their blood drawn at the end of the session.



Amazingly, those who thought they'd be stuck with a needle reported that the confederate was significantly more attractive, and consequently, they would be willing to work much harder to secure her affection.

So…what's going on here? A classic example of the *misattribution of physiological arousal*.

High physiological arousal refers to internal, physical activation in the body which is marked by rapid breathing or a racing heart. Typically, we become aroused like this when we're surprised, when we're angry, or—as is relevant to today's lesson—when we're in the presence of an attractive other.

Take a moment and imagine your crush is suddenly approaching you. Naturally, your heartrate quickens; your hands begin to sweat; the muscles in your back go tight. But now ask yourself this: how different are these feelings from those elicited by a looming syringe prick?

As error-prone humans, we're not always great at discerning what caused our arousal or if we're even aroused in the first place. For example, after exercising, participants tend to report that their heartrate (i.e., arousal) has returned to baseline a full five minutes before cardiac monitors actually demonstrate this.

Thus, it can be easy to misattribute the cause of one's physiological arousal (e.g., having one's blood drawn) to an entirely different source, namely, a romantic interest.

For example, researchers had men come into the lab and run in place for either 15 seconds (low arousal) or 120 seconds (high arousal) while they watched a videotape of a female peer talk about random topics. And expectedly, those in the high arousal condition found the women on the screen to be more sexually attractive than those in the low arousal condition.

However, this was only true for the participants who *misattributed* that arousal.

When participants were made aware that their increased arousal was due to the exercise, those in the high arousal (vs. low arousal) condition no longer found the woman in the video more attractive. Only when the source of their arousal was disguised from them (and the men could misattribute that arousal to the woman) did it influence their reports of attraction.

Thus, research shows that whether your arousal was elicited from a movie (either a comedy or a horror), a roller coaster ride, or even crossing a shaky bridge, the subsequent arousal can easily be misattributed to the way another person makes you feel.

So, got any ideas for a good date now?

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Love on the Brain? When it comes to a desire for arousal, we're not all born equal. So what does a preference for high- or low-arousing activities say about you?

Foster, C. A., Witcher, B. S., Campbell, W. K., & Green, J. D. (1998). Arousal and attraction: Evidence for automatic and controlled processes.*Journal of Personality and Social Psychology*,*74*(1), 86.

Gold, J. A., Ryckman, R. M., & Mosley, N. R. (1984). Romantic Mood Induction and Attraction to a Dissimilar Other Is Love Blind? *Personality and Social Psychology Bulletin*, *10*(3), 358-368.

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Chapter 10: The Drug of Love

As many people have said before, “love is one hell of a drug.” But this comparison extends further than just their similar experience of bliss (or terrible longing): sensations of love activate the same brain regions as actual drug use.

For example, researchers brought participants into the lab who were recently rejected by their partner but still intensely “in love” with them. Then, with participants in an fMRI machine (i.e., a scanner that uses magnets to determine brain activity) they looked at pictures of their ex-lover.

In the forebrain, there was significant activation in the same set of regions as those associated with cocaine addiction.

However, even though love and drugs are empirically similar, what happens when you take a drug that is meant to *create* love?

Oxytocin, as we discussed on the first day, is a neuropeptide involved in many socially affiliative behaviors. But did you know that you can actually purchase it as an intranasal spray and experience some effects?

Research has shown that a standard dosage of oxytocin improves your cooperation skills (at least in a computerized drawing task), makes you more comfortable with interpersonal closeness, and influences you to find others more attractive.

However, the consumption of another drug meant for love has even more potent effects.

Methylenedioxymethamphetamine (MDMA) is the active component in the street drug ecstasy—a popular party/rave drug for a reason. As one participant’s autobiographical account expresses: “it feels like the inability to not be happy.”

MDMA works by flooding the brain with a neurochemical called serotonin, which is also highly involved with sensations of love and happiness. For example, when people are *depleted* of serotonin, they report lowered feelings of intimacy and reduced desire for romance. And although the researchers aren't certain about how serotonin really produces these effects, some suggest that it is a result of stress *absence* rather than *excessive* joy.

But if you're like most people, you're likely unfamiliar with at least one of those drugs. However, there is another drug (and one you've surely taken) that can also affect romance:

Acetaminophen—or what you likely know as Tylenol.

Recent research has discovered that after taking Tylenol, we are less hurt by social pain (e.g., what comes with a break-up), but simultaneously, less positive about joyful events (e.g., a surprise kiss from your crush). Granted, the effects of Tylenol are relatively subtle, but the effect has proved robust, replicating in study after study. Which draws me to a broader point:

All of the information you learned in this 10-day class has been tested under strict methodological principles. The researchers were blind to conditions; the participants were randomly assigned. What you have learned is backed by scientific evidence.

However, learning the theory is one thing and applying that knowledge to everyday life is another. So, if you want a free collection of empirically tested and creatively applied tips and tricks for attracting your soulmate, just click the link below.

Oh, and did I mention I like you?

* * *

Love on the Brain? So you still want to know more about love and attraction? My esteemed colleague has created a highly rated video course (admittedly, with a cost) on the topic that you can find here (and you can also find *him* cited in the Tylenol article below!)

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