Origins of attraction:

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What is attraction: **Attraction** is psychologically defined as The **action or power of evoking interest, pleasure, or liking** for someone or something. For the sake of this objective, we will define attraction as **the romantic desire for a specific person**

Biological origins of attraction:

Evolutionary explanations: Romantic love has evolved to ensure mate selection, protection and mating.

As with any other behavior in the universe; Evolutionary Psychologist have hypothesized that attraction has an evolutionary explanation. Evolutionary Psychologist (including Darwin himself) have argued that much of what men and women find attractive in a mate is innate and may sometimes override psychological and social desires. Therefore, it is hypothesized that although the modern human brain has the ability to make rational decisions when choosing a mate, sexual attraction (for the purpose of gene survival) is still the driving force behind partner choice.

Finding the right partner in primitive society made the difference between the life and death of an offspring. Darwin theorized that sexual admiration could interfere tremendously with the struggle for survival. However, he also postulated that females choose their male partners carefully; evaluating which males will provide the best genes to contribute to successful reproduction and healthy offspring.
Because reproduction is the key to survival of the human species, men appear to have developed a short-term sexual strategy, as men who pursue multiple partners are more likely to out-reproduce men with one partner. Therefore, men's mating strategies includes a desire for sexual variety making the chances higher if reproduction is not successful with one female, it will be with another. According to the journal article *Sex Differences in Sexual Psychology Produce Sex-Similar Preferences for a Short-Term Mate*:

Men desire nearly five times as many sexual partners than do women over a lifetime. Men's sexual fantasies also reveal a psychology attuned to sexual variety. Men's sexual fantasies more than women's sexual fantasies include multiple and unfamiliar partners. This modern day psychology of the human male is no doubt an offshoot from his male ancestors who were physiologically prompted to over-reproduce to insure survival of the species. Women, on the other hand, do not appear to have such a physiological need to procreate with multiple males, as women do not compete with other females in terms of reproduction during sexual encounters. Therefore, short-term sexual partners for women may function only to evaluate possible long-term mates, and serve more of a social function than a sexual or reproductive one.
(Read more: http://www.elainehatfield.com/79.pdf)

Other research studies supporting an evolutionary explanation for attraction:

Buss (1979): In all cultures in the world, men generally desire a younger woman (more fertile, can bear more children) and women desire an older man (have more resources to protect the man)

Wedekind (1995): Men and women prefer the body odour of someone whose MHC genes are different from them. This will lead to a stronger immune system in the potential offspring

Clarke & Hatfield (1989): Men are more likely than women to accept casual sex. This is because, from an evolutionary view, is less risky for men (increase chances of having children) and more risky for women (a woman can only carry one child at a time, need protection)

As it is continuously said in regards to evolutionary theories: the theory is practical- *yet the human research is lacking.*

Hormones and neurotransmitters: *As we have previously learned; Hormones (oxytocin) and neurotransmitters (dopamine) are present at the scene of many behaviors.*

Attraction, love and relationships are argued by biopsychologists to be fueled by *actual chemicals*. So when one says, "We have chemistry", they are partly correct! Many different hypotheses of the processes of falling in love and out of it were recently proposed. Although some are came and gone, two particularly distinct chemicals have lasted the test of time…

That initial giddiness that comes when we're first falling in love includes a racing heart flushed skin and sweaty palms. Researchers say this is due to the dopamine and norepinephrine we're releasing. **Dopamine** is thought to be the "pleasure chemical," producing a feeling of bliss. **Norepinephrine** is similar to adrenaline and produces the racing heart and excitement.

According to Helen Fisher, anthropologist and well-known love researcher from Rutgers University, together these two chemicals produce **attraction**; which is measured by intense energy, sleeplessness, craving, loss of appetite and focused attention. She also says, "The human body releases the "cocktail of love rapture" only when certain conditions are met and ... men more readily produce it than women, because of their more visual nature." In many research conditions, dopamine and norepinephrine have continuously been found at the scene of those who display attraction towards another person. Researchers are using functional magnetic resonance imaging (fMRI) to watch people's brains when they look at a photograph of their object of affection. According to Helen Fisher, what they see in those scans during that "crazed, can't-think-of-anything-but stage of romance" -- *the attraction stage* -- is the biological drive to focus on one person. The scans showed increased blood flow in areas of the brain with high concentrations of receptors for dopamine -- associated with states of euphoria, craving and addiction (this speaks to why we can become attracted to things such food, objects, etc.).

So can biological factors help us to explain our attraction? We will look at this biological origin empirically…

Romance + Attraction + Oxytocin = Love???

At a university in Stony Brook, N.Y., a handful of young people who had just fallen madly in love volunteered to have their brains scanned to see what areas were active when they looked at a picture of their sweetheart. The brain areas that "lit up" were precisely those known to be rich in a powerful "feel good" chemical, dopamine -- the substance that brain cells release in response to cocaine and nicotine. Dopamine is the key chemical in the brain's "reward system," a network of cells associated with pleasure -- and addiction.

In the same lab, older volunteers who claimed to still be intensely in love after two decades of marriage participated in the same experiment. The same brain areas lit up, showing that, at least in some lucky couples, that honeymoon feeling can last. But in these folks, other areas lit up, too -- those rich in oxytocin, the "cuddling" chemical that helps new mothers make milk and bond with their babies, is secreted by both sexes during orgasm, and that, in animals, has been linked to monogamy and long-term attachment.

It's way too soon - and hopefully, always will be - to say that brain scientists have translated all those warm and fuzzy feelings we call romantic love into a bunch of chemicals and electrical signals in the brain.

But they do have a plausible hypothesis: that **dopamine plays a big role in the initial attraction of love, and oxytocin is key for the calmer experience of consistent attachment.** Granted, the data are preliminary. But the findings so far are challenging.

And it's conceivable that, as Emory University neurobiologist Larry J. Young pointed out in the journal Nature earlier this year, once scientists understand the chemistry of love; drugs to *manipulate* the process "may not be far away."

In fact, a study published this year in Biological Psychiatry supports that idea, showing that oxytocin may help human couples stay attracted to each other (the "attraction" drug). Swiss researchers gave 47 couples a nasal spray containing either oxytocin or a placebo. The couples then participated in a videotaped "conflict" discussion. Those that got oxytocin exhibited more positive and less negative behavior than those given the placebo. Oxytocin was also linked to lower secretion of cortisol, a stress hormone.

Emory's Young noted in the Nature paper that Prozac, an antidepressant, and Viagra, an erection enhancer, appear to affect the oxytocin system, though it's not yet known whether such drugs affect relationships by changing brain chemistry.
In the initial love study at SUNY-Stony Brook, 10 women and 7 men in intense, "early-stage" love were put into a functional MRI brain scanner, which can detect activity in specific parts of the brain. They were then shown pictures of their loved one or a neutral person.

One dopamine-rich region in particular consistently lit up when these lovebirds viewed the loved one, but not the neutral person, according to the research, published in 2005. The intensity of the brain's response to falling in love, says coauthor Lucy L. Brown, a neuroscientist at Albert Einstein College of Medicine, suggests that it "is not just an emotion but a *drive*, a real goal like food or water."

The team found the same brain areas at work in people recently rejected by a loved one. Perhaps loss of love triggers the same kind of craving as withdrawal from cocaine or cigarettes, suggests Helen Fisher, a biological anthropologist at Rutgers University who also worked on the study.

In new data presented at scientific meetings in 2011, Bianca Acevedo, formerly at Stony Brook and now a post-doctoral fellow at the University of California-Santa Barbara, focused on 10 women and 7 men still in love after 21 years of marriage. Like the young lovers, when these volunteers were put in scanners and shown pictures of their partners, their dopamine-rich areas lit up. "But in contrast to those newly in love," says Acevedo, other brain regions did, too, including areas rich in oxytocin, vasopressin (a similar chemical) and serotonin, a brain chemical associated with well-being and calmness.

The link between long-term attachment and oxytocin has long fascinated researchers, among them, Sue Carter, a neuroendocrinologist at the University of Illinois in Chicago.

Carter's work has centered on *prairie voles*, known for their enduring bonds. Compared with other rodents, prairie voles -- among the only 3 percent of mammals that form monogamous bonds -- *have more active oxytocin*. Moreover, brain cells with "receptors" that specifically latch onto oxytocin lie in the very brain regions believed to be important in forming attachments, Carter says.

Other researchers have shown that when mice (not known for their monogamous ways) are injected with a gene containing instructions for making the receptor for oxytocin, the mice cozy up to their mates like voles.

Lack of oxytocin is important, too. For instance, if female animals are stressed by being isolated, their oxytocin drops. In humans, Emory University research shows that women who were seriously abused as children have low oxytocin levels as adults. Low levels of oxytocin have been correlated with lower measureable attraction in animals and humans.

Biological psychologists make a very important contention for the explanation of attraction. However, as we have previously learned; biological factors can *interact and be influenced by cognitive factors.* Thus, we must look at attraction from a cognitive perspective as well…

Cognitive origins of attraction:

Does your "attractions" and preferences change over time? Can our experiences impact our cognitive labels for attractiveness? It can be argued that humans develop "types". Cognitive psychologists have empirically defined these "types" as *schemas.*

As previously noted, schemas contain both abstract knowledge and specific examples about a particular preference developed through experience. **These schemas can guide our preferences for people, friends, and even romantic relationships.**

Researchers have suggested that people possess different love schemas and that these schemas may shape attraction and reactions to impending commitments (Hatfield, E., Singelis, T., Levine, T., Bachman, G., Muto, K., & Choo, P. (2007). Hatfield and Rapson (1996) pointed out that the people's love schemas may have multiple determinants. They are shaped by children's early experiences (see Scharfe & Bartholomew, 1994) and they deepen as young people mature (see Erikson, 1982) and gain experience with the world (see also Cassidy & Shaver, 1999; Simpson & Rholes, 1998). Depending on their romantic experiences, people may become better (or less) able to deal with the changes of love relationships. Finally, of course, people may react differently in different kinds of relationships. The same person, for example, may cling to a cool and detached mate but become skittish with a smothering one (Cassidy & Shaver, 1999; Napier, 1977; Simpson & Rholes, 1998). The strong research support of "personal preference" speaks to the triangulated explanation of attraction.

The role of cognition in attraction

Are we drawn to people who we perceive are attracted to us? An analysis of interpersonal relationship shows that there are three important cognitive factors hat help to form such a relationship: 1) how individuals *perceive* themselves; 2) how an individual perceives the other person; and 3) how an individual believes the other person perceives him/her. Individuals enter into dating relationships and maintain a relationship based on if the other person was perceived as supporting their own self-concept (Bailey ad Kelly, 1984).

Past research on similarity and attraction has all been fairly *consistent*. The studies have indicated that the more similar someone *perceives* one to be to another person, the more he/she will tend to like that person (Buss, 1985; Davis, 1985; and Rubin, 1973). According to the cognitively driven **similarity-attraction hypothesis**, the assumed or perceived similarity serves as a predictor for the attraction response (Byrne and Nelson, 1965). Individuals only enter into and maintain a relationship with people whom they perceive as supporting their own self-concept (Bailey and Kelly, 1984).

According to the similarity-attraction hypothesis, similarity doesn't require you to see the person everyday in order to become familiar with him because sometimes you might meet a person who appears familiar even if its the first time you meet him (this also speaks to schemas that we form from our experiences). This happens because this person has similar looks to someone who is already familiar to you, for example your father, mother or a close friend. This theory also states that people get attracted to those who share *similar beliefs and similar personality traits with them*. So *perceived* similarity is needed for attraction to happen because people prefer the ones they are familiar with to the ones they know nothing about. This theory is a strong predictor of many interpersonal relationships; as we *perceive* our friends to be very similar to us. We even tend to experience *self-serving bias* to confirm this assumption.

To test this hypothesis, Donn Byrne conducted a study to investigate the relationship between interpersonal attraction and attitude similarity. In this experiment, participants' attitudes were recorded on a variety of issues that ranged from those they

thought were extremely important (e.g., integration, God, premarital sex relations) to those considered be of minor importance (e.g., western movies and television programs). Afterward, subjects evaluated a fictional character based on given information of that character's attitudes. Subjects indicated significantly more positive feelings toward the "stranger" when there were attitude similarities, rating that person higher in intelligence, morality, and adjustment than characters with dissimilar attitude scales (Byrne, 1961). However, this finding is often criticized for its failure to satisfy external validity, since there was no actual human interaction. In response to such criticisms, Griffitt and Veitch conducted a study where thirteen unacquainted males lived together for ten days under simulated fall-out shelter conditions. Result indicated a positive correlation between attraction and attitude similarity, even when a participant's attitude was neither explicitly nor implicitly informed by the investigators (Griffitt & Veitch, 1974).

(Read more: http://garfield.library.upenn.edu/classics1979/A1979HZ22300001.pdf)

The similarity hypothesis is further supported by several well-validated studies (e.g., Feingold, 1988), which indicate a strong correlation between married couples and similarities in education and socioeconomic status, but also equal levels of physical attractiveness. Is this true with your current relationships? How similar are your current friends? How socioeconomically similar are your parents *(my wife and I are both college graduates from the same college with or seeking doctorate degrees, and are both in a fraternity/sorority)?*

Many cognitive theories of attraction, however, point to a very strong *social* indicator that could possibly lead to attractiveness.

Social origins of attraction

As one of the strongest indicators of attachment/attraction, (and the most empirically supported) *social factors* can play a strong role in influencing those who we are attached and attracted to.

Social exposure and attraction:
Research strongly suggests that we grow attracted to those things that we are consistently exposed to. This phenomenon is known as the **Mere Exposure Effect.** It basically states that the more we are exposed to something the *more we come to like it.* Thus, there is *some benefit* to simply hanging around or being near a girl that you're attracted to (although I would not recommend trying this at school).

This applies equally to both objects and people (this speaks to those who may become addicted to certain drugs/etc. because of mere exposure). This stimulus can be people, commercial products, places, etc. We can even get to like unpleasant things, such as those who are grow attached to unwarranted situations. When we make choices, the familiar is often chosen over the unfamiliar.

Gustav Fechner conducted the earliest known research on the effect in 1876. The effect was also documented by Edward Titchener and described as the glow of warmth one feels in the presence of something familiar. However, several other scientists, such as Robert Zajonc continued to explore this effect. Zajonc theorized

that the more often individuals came into contact with a given stimulus, the more likely they would be to recognize the object and must form their own attitude about the stimulus by thinking about it.

In his studies, Zajonc demonstrated that subjects rated stimuli, which had been presented to them more positively than similar ones that had not been presented. He recognized that the frequency-value correlation does not constitute sufficient evidence for the causal relation between "mere exposure" and attitude enhancement.

He therefore set out to demonstrate the causal relation by carrying out three experiments in which various stimuli (nonsense, paralogs Chinese-type nonsense characters, and photographs of faces) were presented in counterbalanced order to subjects a different number of times (usually varying between 0 and 25), and then rated on a scale of liking or favorableness (usually the "good-bad" scale of the semantic differential).

The results showing changes in affect as a consequence of "mere exposure" are utterly convincing. The more often people saw these signs, the more people liked them although it might have been that they don't even understand the signs (Chinese characters). According to Zajonc, the exposure effect is capable of taking place *without* conscious cognition, and that "preferences need no inferences. This speaks to the social factor exclusively causing the change in the attraction. *Is this true in real world situations?*

Social Proof and Attraction:
Are we attracted to people who are "socially acceptable"? Before you say no, think about the last time you asked for "social validity" in choosing a companion. Research argues that we *socially learn* what is attractive and not attractive based on our social environment.

Inspired by work on animal studies, recent research suggests social learning may influence human mate preferences. While some research has shown that the presence of wedding rings on men did not increase women's preferences for those men, other studies have found that images of men labeled as married were more attractive than those labeled as single and that women rate men as more desirable when they are *shown surrounded by women* than when they are shown alone or with other men.

Benedict Jones and colleagues at Aberdeen University's Face Research Laboratory first asked 28 women and 28 men to rate the attractiveness of several pairs of male faces. Next they were shown the same pairs again, except this time one face in each pair was shown with a woman's face staring at it from the side, either with a smiling or neutral expression. When the participants then rated the male faces for a second time, their ratings had changed for those male faces that had been stared at by a woman.

Female participants rated a male face as more attractive after a smiling woman had stared it at, but less attractive if a woman with a neutral expression had stared at it.

Women therefore appear to mimic the attitude of other women to particular men. By contrast, the reverse was true for male participants (i.e. observing women with neutral

expressions looking at male faces increased male participant's preferences for those men to a greater extent than did observing women smiling at male faces). This latter finding suggests that within-sex competition promotes negative attitudes among men towards other men who are the target of positive social interest from women. The findings demonstrate that social transmission of face preferences influences judgments of men's attractiveness, potentially demonstrating a mechanism for social transmission of mate preferences.

(Read more:http://www.cogs.indiana.edu/spackled/2008readings/JonesDebruine2006-Social%20transmission%20face%20prefs.pdf)

What does this suggest? This would indicate that one may be consciously or subconsciously attracted or un-attracted to a mate based on *social proof* (as Cialdini suggested with compliance).

Overall, attraction is a particularly difficult behavior to isolate. Although social factors have proven empirically stable, both biological and cognitive factors must be considered in a thorough examination.