

## THE NEUROBIOLOGICAL, SOCIAL AND EVOLUTIONARY ASPECTS OF INTER PERSONAL ATTRACTION

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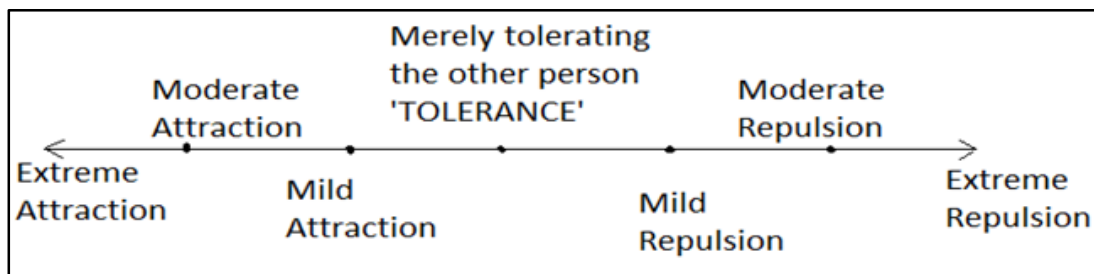
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**ABSTRACT:** Interpersonal Attraction is the attraction between two people, which leads to friendships and even romantic relationships. Although Interpersonal Attraction has been a long-standing concept, only recently it is being studied regarding its neurobiological and socio evolutionary basis. It is now a major area of research in Social as well as Evolutionary Psychology.

**KEYWORDS:** Interpersonal attractions, neurobiological, social, evolutionary, theories.

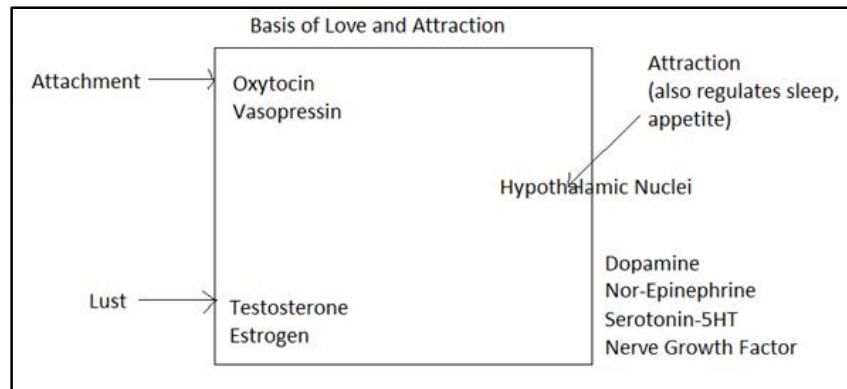
**INTRODUCTION: DEFINITION:** Interpersonal Attraction is defined as a force acting between two people that tends to draw them together and resists their separation.<sup>1</sup> The concept of interpersonal attraction is different from physical attraction which is merely a perceptive view (a view based on individual's own perception) as regards what is and what is not considered beautiful.<sup>1,2</sup> Interpersonal attraction is not only about attraction but also about repulsion. It takes into account as to how much a person is attracted to or repelled by another person. A lot of factors like personality of the persons involved, contextual situations, qualities of the attracted as well as the person who attracts need to be considered<sup>1,2</sup>. Basically interpersonal attraction can be reviewed as a spectrum, at one end of which is extreme attraction and at the other end being extreme repulsion, with moderate attractions, merely tolerating the other person, and mild to moderate repulsion between the two ends of the spectrum.<sup>3</sup>



Hence the phenomenon of interpersonal attraction is not a Be-All or an End-All phenomenon but rather it encompasses the entire range of the spectrum.

**THEORIES OF INTERPERSONAL ATTRACTION:** Various theories have been founded to explain this very interesting, and at the same time, very elusive phenomenon of Interpersonal Attraction. The theories can be broadly divided into:-

- Neuro-biological theories.
- Social theories.
- Evolutionary theories.



Before describing these theories it must be emphasized that interpersonal attraction is also an individual phenomenon, besides being a group phenomenon. For example, a particular person may be found attractive by one person but may not be found attractive by another. Similarly, the same person who is repulsive to one person may be quite attractive to another.

**Now a description of the above mentioned theories follows:**

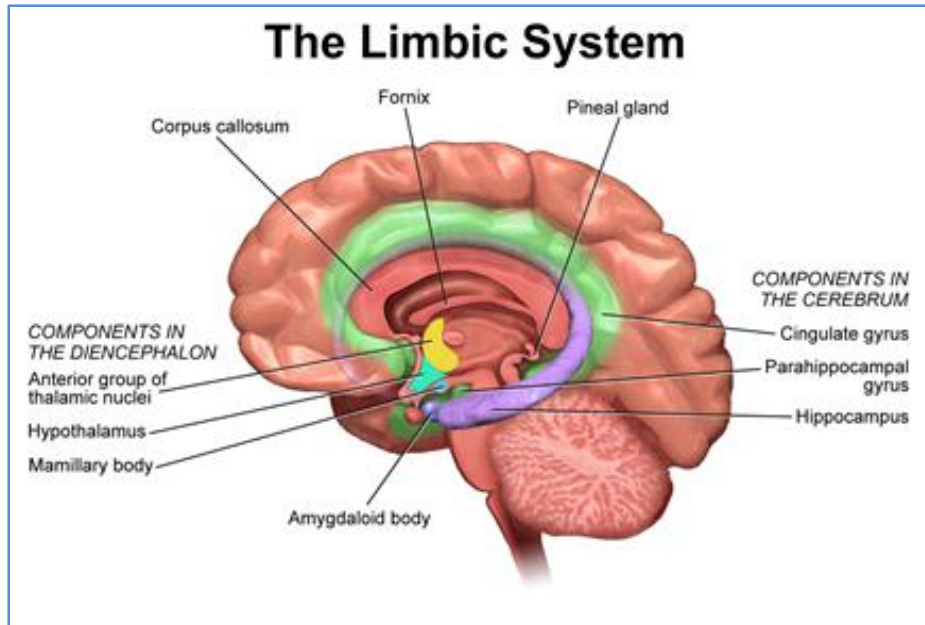
**NEURO BIOLOGICAL THEORIES OF INTER-PERSONAL ATTRACTION:** The Neuro-Biological Theories of Interpersonal Attraction include Reward-Attachment Theory and The Limbic Resonance Theory.

**REWARD-ATTACHMENT THEORY:** The combination of reward and attachment to the partner leads to a long term relationship/almost a lasting addiction for the partner.<sup>4</sup> The combination of Dopamine (which induces feelings of pleasure), Oxytocin (which is associated with feelings of attachment) and Vasopressin (promotes attachment and allows social recognition) leads to a learned behaviour in which one becomes addicted to his/her mate and has Long Term Attraction towards him/her.<sup>4</sup>

The chemicals oxytocin and vasopressin help humans to experience lasting monogamous interpersonal attraction.

**LIMBIC RESONANCE THEORY:** The limbic system plays an important role in love, attachment, and continuing interpersonal attraction and bonding. The regions of the limbic system involved in these are caudate nucleus, insula, bilateral fusiform regions, parahippocampal gyrus, right angular gyrus, occipital cortex and the cerebellum<sup>4</sup>. According to Limbic Resonance Theory, the mammalian nervous systems are not self-contained but rather demonstrably very finely tuned to those around us and to those who are close to us/to those whom we are most close. This empathy is called as Limbic Resonance.<sup>4,5</sup> This is a capacity which we share, along with the anatomical characteristics of the limbic systems, with all other mammalian brains. Another definition of limbic resonance is "A symphony of mutual exchange and internal adaptation whereby two mammals become attuned to each other's inner states".<sup>4,5</sup>

It is this limbic resonance which allows us to form Long Term Interpersonal Attraction with others which results in "learned addiction" to ones mate.



It does not just stop at limbic resonance. Our systems synchronize with one another in such a way that it has profound implications for personality and lifelong emotional health (Limbic Regulation).<sup>4,5,6</sup> Furthermore these set patterns can even be modified through therapeutic practice (Limbic Revision). This capacity for empathy and non-verbal connections present in mammals forms the basis for our social connections and long term interpersonal attraction<sup>4,5,6</sup>.

**SOCIAL THEORIES:** Social theories include the Physical Attraction Theory, The Propinquity Effect, The Exposure/Familiarity Effect, The Similarity Attraction Effect, The Concepts of Actual Similarity and Perceived Similarity and The Concept of Complementarity as opposed to Similarity in a Relationship.

1. **PHYSICAL ATTRACTION:** As mentioned earlier in this article, the interpersonal attraction phenomenon, is different from the phenomenon of physical attraction. But the former is definitely influenced by the latter.<sup>7</sup> It is based on one's individual perception of what is beautiful or appealing.<sup>7</sup>
2. **PROPINQUITY EFFECT:** According to Rowland Miller, Propinquity Effect is defined as "the likelihood/chances of a friendship or a romantic relationship blossoming is directly proportional to the amount of visual and verbal interactions between the two people".<sup>7,8</sup> Thus, the more one sees and interacts with a person the more likely he/she is likely to become his/her friend/partner.<sup>7,8</sup>
3. **EXPOSURE EFFECT/FAMILIARITY EFFECT:** Exposure effect is defined as "the more a person is exposed to a stimulus, the more he/she starts liking it because he/she becomes familiar with

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it". When we are familiar with someone or something, we start liking him/her because the person or thing does not appear to be strange or remote or threatening<sup>8,9</sup>. When a person is familiar to us, we also tend to have an idea about the person's nature, temperament and good or bad qualities. So we deal with him accordingly<sup>8,9</sup>. Thus familiarity breeds liking and tends to lower our guard towards those who are familiar to us<sup>9</sup>.

**EXCEPTIONS TO THESE TWO RULES:** It goes without doubt that there are a few exceptions to these rules. "Familiarity may also breed contempt"-thus goes a popular saying. Sometimes in exceptional circumstances a person with persistent exposure and over familiarity with another person starts becoming increasingly annoyed by the other person's habits/personality or attitudes instead of growing fond of them.<sup>9</sup> This phenomenon is called Social Allergy Effect. This may happen when our nature, temperament, likes/dislikes are in stark contrast to the other person so that the closer we become to the other person the more glaring is the disparity between our nature and hence closeness starts breeding annoyance.<sup>9</sup>

**SIMILARITY ATTRACTION EFFECT:** The similarity attraction effect re-affirms the saying "Birds of the same feather flock together". Thus, similarity is a crucial determinant of interpersonal attraction. There are six aspects to be considered when we are discussing about 'Similarity Attraction Effect'. They are:-

- a. Similarity in physical appearance.
- b. Actual and perceived similarity.
- c. Similarities in different/other aspects.
- d. Covergence phenomenon.
- e. Initial assortment phenomenon.
- f. Active assortment phenomenon.

A brief description of each of these is given below.

**SIMILARITY IN PHYSICAL APPEARANCE:** According to Erving Goffman, people are likely to get attracted and form long standing relationships with those people who match them in terms of physical attractiveness<sup>10</sup>. Studies conducted by Walster have shown that partners who are similar in terms of physical attractiveness expressed the maximum liking for each other.<sup>10</sup> Penton-Voak, Perrett and Peirce (1999) found that subjects rated photographs with their own face morphed into them as more attractive. Thus similarity in physical appearance between two people translates into mutual attraction.

**SIMILARITY IN DIFFERENT/OTHER ASPECTS:** It has been found that people are attracted to those persons who are similar to them in, besides physical appearance, other aspects, like demographics, attitudes, interpersonal style, social and cultural background, personality, interests and activities, communication and social skills.<sup>10,11</sup> Besides these, people also look for similarities in their educational background, profession and occupation, academic achievements, moral values and others<sup>10,11</sup>

Now what does all this show? Where all this information does leads us to? This information leads and re-leads us to the basic theory about human nature called as Self-Affirmation Theory. To

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understand this theory, let us first understand a few basic facts about human nature. Humans are born narcissists-They love themselves so much that they are most attracted to themselves.<sup>12</sup> Since they cannot form any relationship with themselves, they seek people who are “like” them or “similar” to them or those who fit in their actual or perceived self-image. Sometimes, people may look in others for their own “Idealized Self” which may be different from their “Actual Self/Real Self”. Thus this also explains how people end up choosing partners who are different from themselves.<sup>12</sup> This is because there may be a huge disparity between the person's ‘Actual or Real Self’ and the ‘Idealized Self’. Actual or Real Self is how a person actually is with all his abilities and short-comings, positive and negative points. The person loves his idealized self-much more than his actual self.<sup>12</sup> Thus, that particular person may get attracted and choose a partner, who is seemingly different from his own self/personality but in reality is an improvised/idealized image of himself.

This brings us to a related concept of “Self-Affirmation”. According to the Self-Affirmation Theory, a person typically enjoys receiving confirmation of every aspect of his/her life, ideas, attitude and personal characteristics.<sup>12</sup> It may even seem that persons are looking for an image of themselves to spend their life with. The very principle of interpersonal attraction, therefore, is similarity. Similarity is attractive, similarity causes/leads to attraction in both friendships as well as romantic relationships.

**ATTRACTION SIMILARITY MODEL – ACTUAL SIMILARITY AND PERCEIVED SIMILARITY:** There are two types of similarities which are self-explanatory. One is the Actual Similarity and the other is the Perceived Similarity. When two persons get attracted to each other initially (called as Initial attraction) the attraction is based on Actual Similarity.<sup>12,13</sup> Perceived Similarity is something which develops in the later stages of the relationship/ partnership. Here there may not be an Actual Similarity but the person feels that his/her partner is similar to himself/herself.<sup>12,13</sup> This is useful in order to maintain a balance in the relationship and is a good predictor of ongoing Interpersonal Attractions in long term relationships.

**CONCEPT OF SIMILARITY WITH REGARD TO MARRIAGE/SPOUSE:** When we talk of spouse-similarity in marriage, there are three terms which deserve a passing reference. These are: Actual similarity between partners which led to initial attraction and are responsible, to some extent, for carrying the relationship forward.

Another aspect is the phenomenon of Convergence. Convergence is defined as the development of increasing similarities between two partners/spouses over time.<sup>13</sup> For example, If two partners have been staying together for several years, their likes and dislikes, view-points, ways of thinking and behaving may become similar over time. This is called as Convergence.

Lastly, there is the concept of “initial assortment and active assortment”. The former refers to the already existing similarity between the couples at the beginning of marriage, because of which they might have chosen each other initially as partners.<sup>13,14</sup> The latter refers to the direct effects of choosing somebody similar to themselves in political or religious attitudes for the purpose of mating and procreation.<sup>15</sup>

**CONCEPT OF COMPLEMENTARITY IN A RELATIONSHIP-TWO SIDES OF THE SAME COIN:** Complementarity in a relationship basically implies that, “opposites attract”. The qualities which the

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second partner lacks in are present in the first partner.<sup>16</sup> Thus the two partners complete each other forming a "whole" where there are no deficits and each partner attempts to compliment and thus complete the other. This forms the basis of a loving and harmonious relationship.<sup>16</sup> For example, a dominant partner may seek a partner who is submissive by nature. A low self-esteem partner may seek an individual with a high degree of self-esteem and self-worth.<sup>16</sup>

It has been found that while similarity is important in initial attraction, complementarity assumes importance in the later years of the relationship, as the relationship becomes more mature over time.<sup>16</sup> Thus allows couples to:

- a) Maintain their own preferred style of behaviour.<sup>16,17</sup> For example, a submissive individual who has a dominant partner will continue to be submissive as he or she knows that his or her submissiveness is being complemented by the dominant nature of his or her partner.
- b) Allows both partners to have a sense of self-validation and security.<sup>16,17</sup> This is because, each partner knows that he or she need not change for their partners, since the qualities absent/found lacking in one are being balanced/complemented by the qualities present in the other.

**SOCIAL EXCHANGE THEORY:** According to the social exchange theory the initiation and the subsequent maintenance of the relationship depends upon the rewards and costs of the relationship. Rewards are defined as those aspects of the relationship which make the relationships worthwhile and enjoyable. Rewards may be of various types:-

- a. Social Rewards.
- b. Psychological/ Emotional Rewards.
- c. Financial/ Monetary Rewards.
- d. Sexual Rewards.

Costs are defined as the unpleasant or not likeable aspects of the relationship which can produce cracks/emotional distances in the relationship. For example, costs are also several types.

**Emotional cost:** If the partner has a very difficult nature, gets angry easily then the other person has to spend a lot of time cajoling him/her.

**Social Cost:** If a person is involved with a person who is ostracized by the society, for example a smuggler, robber, Commercial Sex Worker.

**Financial Cost:** If the partner is making the person spend exorbitant sums of money on herself/himself, demands money for sexual or other favors, etc.

If the rewards in the relationship far outweigh the costs in the relationship, it will be a healthy relationship.<sup>18</sup> If the costs of maintaining the relationship become higher than the rewards, there are high chances of a break up or an unhealthy relationship in which both partners are unhappy.<sup>18</sup>

Another factor that deserves a mention in this article while elaborating about Evolutionary Theories is the comparison level. If the rewards in the relationship are just equal to the costs of the relationships, then this factor of comparison comes into the picture.<sup>19</sup> Thus in such a relationship, if there is availability and accessibility of a more desirable partner who can substitute the previous partner and increase the level of rewards then there are higher chances of a break-up.<sup>19</sup>

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It should be noted that even in relationships wherein the rewards and costs are just equal, in spite of unhappiness and dissatisfaction in both the partners, there may not be an immediate break-up and the relationship may still be carried forward till a better and a more desirable partner becomes available as an alternative/option.<sup>19,20</sup>

**EVOLUTIONARY THEORIES OF INTERPERSONAL ATTRACTION:** The Evolutionary Theories of Interpersonal Attraction include The Four Year/Seven Year Itch Theory, The Fertility Theory, The Health Attraction Theory and The Narcissist Theory.

**THE FOUR YEAR OR THE SEVEN YEAR ITCH THEORY:** This theory explains regarding break up in a Relationship. According to this theory, couples often begin their marriage/union with a high level of marital quality. But over a period of four years or seven years after childbirth, this high level of quality begins to decline and at the end of the fourth year, the couples may have started experiencing significant dysfunction and dissatisfaction in the marriage.<sup>19,20</sup> They miss the excitement and passion that comes from the newness of the relationship. They may even find that the idiosyncrasies and annoying habits of their spouses are just too much to bear.<sup>19,20</sup> This time period is consistent with the evolutionary aspect/social aspect, since young children may be involved who demand care and affection from both parents. If another child is born, this four year period may extend up to seven years.

It must be noted that in spite of dissatisfaction, the marriage may not necessarily end in divorce.<sup>19,20</sup> The couples may swallow their unhappiness and try to make do with the marriage as best as they can.<sup>20</sup> They may fear the change of divorce more than fearing the complacency of the ongoing marriage.

**FERTILITY THEORY:** The pivotal point or main point which this theory emphasizes is that opposite sex attraction occurs between a male and a female when the male thinks that a particular female is most fertile.<sup>21</sup> One primary purpose of all opposite sex attractions and consequent conjugal relationships is reproduction, as is deeply ingrained in the male psyche.<sup>21</sup> So males make sexual and emotional investment preferably in those female partners who appear very fertile, thereby increasing the chances of their genes being passed on to the next generation.<sup>21</sup>

**The characterizes in females which men perceive as indicating high fertility in female are:**

1. Fair complexion.
2. A small Waist-Hip ratio. (Hourglass figure).
3. Long, luxuriant hair.
4. Well-nourished skin.

It is interesting to note while males give more emphasis on fertility of the potential female partner, females place significant emphasis on wealth, social status and ambition because these indicate the ability of the male to provide resources and protection to her and her off spring.<sup>21</sup>

**HEALTH-ATTRACTION THEORY:** According to this theory, those persons whose physical features suggest good health are perceived as more attractive.<sup>21,22</sup> This is because a healthy male is assumed to possess genetic traits related to good health that would be passed on to the offspring and thus the

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offspring would also be healthy and the “good quality genes” would have a higher chance of spreading.<sup>21,22</sup>

**NARCISSIST THEORY:** As mentioned earlier also, human beings are narcissists by nature. Thus persons are attracted to those faces which are similar/appear similar to their own.<sup>21,22</sup> In fact, studies have shown that if a photograph of a woman is superimposed to include some features of a man’s face, that particular man would almost always rate such a photograph of the woman as more attractive.<sup>21,22</sup> Each human being wants to replicate their own facial features and personality traits in the next generation because each human being is consciously or unconsciously in love with their own selves.<sup>22</sup>

**THEORY OF IMPLICIT EGOTISM:** Implicit Egotism refers to the idea that people’s positive associations about themselves can spill over into their evaluations of objects associated with the self<sup>23</sup>. People gravitate towards cities, states, careers, partners, mates, whose labels or names share letters or numbers with their own names or important dates because of the positive association people have about themselves.<sup>23</sup>

According to the perspective of Implicit Egotism even arbitrary similarities can enhance people’s attractions to others because such similarities activate people’s unconscious positive self-associations.<sup>23</sup> Thus one may get attracted to a potential mate whose name sounds similar to one’s own or whose name has the same sounding letters or who shares important dates with him/her.<sup>23</sup>

**CONCLUSION:** Homo sapiens is the most evolved species socially, psychologically, emotionally and intellectually with a very fine and intricate tuning of the nervous system. Human beings are, therefore, capable of forming long-term emotionally stable relationships with others for which the way is paved only by Interpersonal Attraction. Interpersonal Attraction can be thus viewed as the first step towards lasting relationships. Interpersonal Attraction is necessary but not sufficient in itself for a lasting relationship. This article is a sincere attempt to go into the Neurobiological, Social and Evolutionary Aspects of what comprises the Interpersonal Attraction which is unique to the human brain and the human psyche. This article is also meant to allow us to enrich and treasure our relationships which have so richly evolved, by surmounting so many obstacles.

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