Attraction and Beauty

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More attractive people elicit more positive first impressions. This effect is called the attractiveness halo, and it is shown when judging those with more attractive faces, bodies, or voices. Moreover, it yields significant social outcomes, including advantages to attractive people in domains as far-reaching as romance, friendships, family relations, education, work, and criminal justice. Physical qualities that increase attractiveness include youthfulness, symmetry, averageness, masculinity in men, and femininity in women. Positive expressions and behaviors also raise evaluations of a person's attractiveness. Cultural, cognitive, evolutionary, and overgeneralization explanations have been offered to explain why we find certain people attractive. Whereas the evolutionary explanation predicts that the impressions associated with the halo effect will be accurate, the other explanations do not. Although the research evidence does show some accuracy, it is too weak to satisfactorily account for the positive responses shown to more attractive people.

Learning Objectives

- Learn the advantages of attractiveness in social situations.
- Know what features are associated with facial, body, and vocal attractiveness.
- Understand the universality and cultural variation in attractiveness.
- Learn about the mechanisms proposed to explain positive responses to attractiveness.

We are ambivalent about attractiveness. We are enjoined not to "judge a book by its cover," and told that "beauty is only skin deep." Just as these warnings indicate, our natural tendency

is to judge people by their appearance and to prefer those who are beautiful. The attractiveness of peoples' faces, as well as their bodies and voices, not only influences our choice of romantic partners, but also our impressions of people's traits and important social outcomes in areas that have nothing to do with romance. This module reviews these effects of attractiveness and examines what physical qualities increase attractiveness and why.

The Advantages of Attractiveness

Advertisements and films tend to showcase attractive people. [Image: CC0 Public Domain, https://goo.gl/m25gce]

Attractiveness is an asset. Although it may be no surprise that attractiveness is important in romantic settings, its benefits are found in many other social domains. More attractive people are perceived more positively on a wide variety of traits, being seen as more intelligent, healthy, trustworthy, and sociable. Although facial attractiveness has received the most research attention (Eagly, Ashmore, Makhijani, & Longo, 1991), people higher in body or vocal attractiveness also create more positive impressions (Riggio, Widaman, Tucker, & Salinas, 1991; Zuckerman & Driver, 1989). This advantage is termed the **attractiveness halo effect**, and it is widespread. Not only are attractive adults judged more positively than their less attractive peers, but even attractive babies are viewed more positively by their own parents, and strangers consider them more healthy, affectionate, attached to mother, cheerful, responsive, likeable, and smart (Langlois et al., 2000). Teachers not only like attractive children better but also perceive them as less likely to misbehave, more intelligent, and even more likely to get advanced degrees. More positive impressions of those judged facially attractive are shown across many cultures, even within an isolated indigenous tribe in the Bolivian rainforest (Zebrowitz et al., 2012).

Advantages of High Attractiveness
First Impressions
Mating Prospects
Parent and Peer Favoritism
Education and Employment
Electoral Success
Judicial Outcomes

Attractiveness not only elicits positive trait

impressions, but it also provides advantages in a wide variety of social situations. In a classic study, attractiveness, rather than measures of personality or intelligence, predicted whether individuals randomly paired on a blind date wanted to contact their partner again (Walster, Aronson, Abrahams, & Rottman, 1966). Although attractiveness has a greater influence on men's romantic preferences than women's (Feingold, 1990), it has significant effects for both sexes. Attractive men and women become sexually active earlier than their less attractive peers. Also, attractiveness in men is positively related to the number of short-term, but not long-term, sexual partners, whereas the reverse is true for women (Rhodes, Simmons, & Peters, 2005). These results suggest that attractiveness in both sexes is associated with greater reproductive success, since success for men depends more on short-term mating opportunities—more mates increases the probability of offspring—and success for women depends more on long-term mating opportunities—a committed mate increases the probability of offspring survival. Of course, not everyone can win the most attractive mate, and research shows a "matching" effect. More attractive people expect to date individuals higher in attractiveness than do unattractive people (Montoya, 2008), and actual romantic couples are similar in attractiveness (Feingold, 1988). The appeal of attractive people extends to platonic friendships. More attractive people are more popular with their peers, and this is shown even in early childhood (Langlois et al., 2000).

The *attractiveness halo* is also found in situations where one would not expect it to make such a difference. For example, research has shown that strangers are more likely to help an attractive than an unattractive person by mailing a lost letter containing a graduate school application with an attached photograph (Benson, Karabenick, & Lerner, 1976). More attractive job applicants are preferred in hiring decisions for a variety of jobs, and attractive people receive higher salaries (Dipboye, Arvey, & Terpstra, 1977; Hamermesh & Biddle, 1994; Hosoda, Stone-Romero, & Coats, 2003). Facial attractiveness also affects political and judicial outcomes. More attractive congressional candidates are more likely to be elected, and more attractive defendants convicted of crimes receive lighter sentences (Stewart, 1980; Verhulst, Lodge, & Lavine, 2010). Body attractiveness also contributes to social outcomes. A smaller percentage of overweight than normal-weight college applicants are admitted despite similar high school records (Canning & Mayer, 1966), parents are less likely to pay for the education of their heavier weight children (Crandall, 1991), and overweight people are less highly recommended for jobs despite equal qualifications (Larkin & Pines, 1979). Voice qualities also have social outcomes. College undergraduates express a greater desire to affiliate with other students who have more attractive voices (Miyake & Zuckerman, 1993), and politicians with more attractive voices are more likely to win elections (Gregory & Gallagher, 2002; Tigue, Borak, O'Connor, Schandl, & Feinberg, 2012). These are but a few of the research findings clearly demonstrating that we are unable to adhere to the conventional wisdom not to judge a book by its cover.

What Makes a Person Attractive?

Most research investigating what makes a person attractive has focused on sexual attraction. However, attraction is a multifaceted phenomenon. We are attracted to infants (nurturant attraction), to friends (communal attraction), and to leaders (respectful attraction). Although some facial qualities may be universally attractive, others depend on the individual being judged as well as the "eye of the beholder." For example, babyish facial qualities are essential to the facial attractiveness of infants, but detract from the charisma of male leaders (Hildebrandt & Fitzgerald, 1979; Sternglanz, Gray, & Murakami, 1977; Mueller & Mazur, 1996), and the sexual attractiveness of particular facial qualities depends on whether the viewer is evaluating someone as a short-term or a long-term mate (Little, Jones, Penton-Voak, Burt, & Perrett, 2002). The fact that attractiveness is multifaceted is highlighted in research suggesting that attraction is a dual process, combining sexual and aesthetic preferences. More specifically, women's overall ratings of men's attractiveness are explained both by their ratings of how appealing a man is for a sexual situation, such as a potential date, and also by their ratings of how appealing he is for a nonsexual situation, such as a potential lab partner (Franklin & Adams, 2009). The dual process is further revealed in the finding that different brain regions are involved in judging sexual versus nonsexual attractiveness (Franklin & Adams, 2010).

More attractive facial features include youthfulness, unblemished skin, symmetry, a facial configuration that is close to the population average, and femininity in women or masculinity in men, with smaller chins, higher eyebrows, and smaller noses being some of the features that are more feminine/less masculine. Similarly, more feminine, higher-pitched voices are more attractive in women and more masculine, lower-pitched voices are more attractive in men (Collins, 2000; Puts, Barndt, Welling, Dawood, & Burriss, 2011). In the case of bodies, features that increase attractiveness include a more sex-typical waist-to-hip ratio—narrower waist than hips for women but not for men—as well as a physique that is not emaciated or grossly obese. Negative reactions to obesity are present from a young age. For example, a classic study found that when children were asked to rank-order their preferences for children with various disabilities who were depicted in pictures, the overweight child was

Hallmarks of High Attractiveness
Youthfulness
Unblemished Skin
Symmetry
Averageness
Femininity in Women
Masculinity in Men
Positive Expressions
Positive Behaviors

ranked the lowest, even lower than a child who was missing a hand, one who was seated in a wheelchair, and one with a facial scar (Richardson, Goodman, Hastorf, & Dornbusch, 1961).

Although there are many physical qualities that influence attractiveness, no single quality seems to be a necessary or sufficient condition for high attractiveness. A person with a perfectly symmetrical face may not be attractive if the eyes are too close together or too far apart. One can also imagine a woman with beautiful skin or a man with a masculine facial features who is not attractive. Even a person with a perfectly average face may not be attractive if the face is the average of a population of 90-year-olds. These examples suggest that a combination of features are required for high attractiveness. In the case of men's attraction to women, a desirable combination appears to include perceived youthfulness, sexual maturity, and approachability (Cunningham, 1986). In contrast, a single quality, like extreme distance from the average face, is sufficient for low attractiveness. Although certain physical qualities are generally viewed as more attractive, anatomy is not destiny. Attractiveness is positively related to smiling and facial expressivity (Riggio & Friedman, 1986), and there also is some truth to the maxim "pretty is as pretty does." Research has shown that students are more likely to judge an instructor's physical appearance as appealing when his behavior is warm and friendly than when it is cold and distant (Nisbett & Wilson, 1977), and people rate a woman as more physically attractive when they have a favorable description of her personality (Gross & Crofton, 1977).

Figure 1. The Kayan people are known for accentuating the neck line with neck rings. [Image: Leslie Zebrowitz, used with permission]

Why Are Certain People Attractive?

Cultural, cognitive, evolutionary, and overgeneralization explanations have been offered to account for why certain people are deemed attractive. Early explanations suggested that attractiveness was based on what a culture preferred. This is supported by the many variations in ornamentation, jewelry, and body modification that different cultures use to convey attractiveness.

For example, the long neck on the woman shown in Figure 1 is unlikely to be judged attractive by Westerners. Yet, long necks

have been preferred in a traditional Myanmar tribe, because they are thought to resemble a mythological dragon who spawned them. Despite cultural variations like this, research has provided strong evidence against the claim that attractiveness is only due to social learning. Indeed, young infants prefer to look at faces that adults have judged to be highly attractive rather than those judged to be less attractive (Kramer, Zebrowitz, San Giovanni, & Sherak, 1995; Langlois et al., 1987). Moreover, 12-month-olds are less likely to smile at or play with a stranger who is wearing a lifelike mask judged unattractive by adults than a mask judged as attractive (Langlois, Roggman, & Rieser-Danner, 1990). In addition, people across many cultures, including individuals in the Amazon rainforest who are isolated from Western culture, view the same faces as attractive (Cunningham, Roberts, Barbee, Druen, & Wu, 1995; Zebrowitz et al. 2012). On the other hand, there are more cultural variations in body attractiveness. In particular, whereas people from diverse cultures agree that very thin, emaciated-looking bodies are unattractive, they differ more in their appraisal of heavier bodies. Larger bodies are viewed more negatively in Western European cultures than other countries, especially those with lower socioeconomic statuses (Swami et al., 2010). There also is evidence that African Americans judge overweight women less harshly than do European Americans (Hebl & Heatherton, 1997).

Although cultural learning makes some contribution to who we find attractive, the universal elements of attractiveness require a culturally universal explanation. One suggestion is that attractiveness is a by-product of a more general cognitive mechanism that leads us to recognize and prefer familiar stimuli. People prefer category members that are closer to a category **prototype**, or the average member of the category, over those that are at the extremes of a category. Thus, people find average stimuli more attractive whether they are human faces, cars, or animals (Halberstadt, 2006). Indeed, a face **morph** that is the average of many individuals' faces is more attractive than the individual faces used to create it (Langlois & Roggman, 1990). Also, individual faces that have been morphed toward an average face are more attractive than those that have been morphed away from average (see Figure 2; face from Martinez & Benevente, 1998). The preference for stimuli closer to a category prototype is also consistent with the fact that we prefer men with more masculine physical qualities and women with more feminine ones. This preference would further predict that the people who are most attractive depend on our learning experiences, since what is average or prototypical in a face, voice, or body will depend on the people we have seen. Consistent with an effect of learning experiences, young infants prefer face morphs that are an average of faces they have previously seen over morphs that are an average of novel faces (Rubenstein, Kalakanis, & Langlois, 1999). Short-term perceptual experiences can influence judgments of attractiveness even in adults. Brief exposure to a series of faces with the same distortion increases the rated attractiveness of new faces with that distortion (Rhodes, Jeffery, Watson, Clifford, & Nakayama, 2003), and exposure to morphs of human and chimpanzee faces increases the rated

attractiveness of new human faces morphed with a small degree of chimpanzee face (Principe & Langlois, 2012).

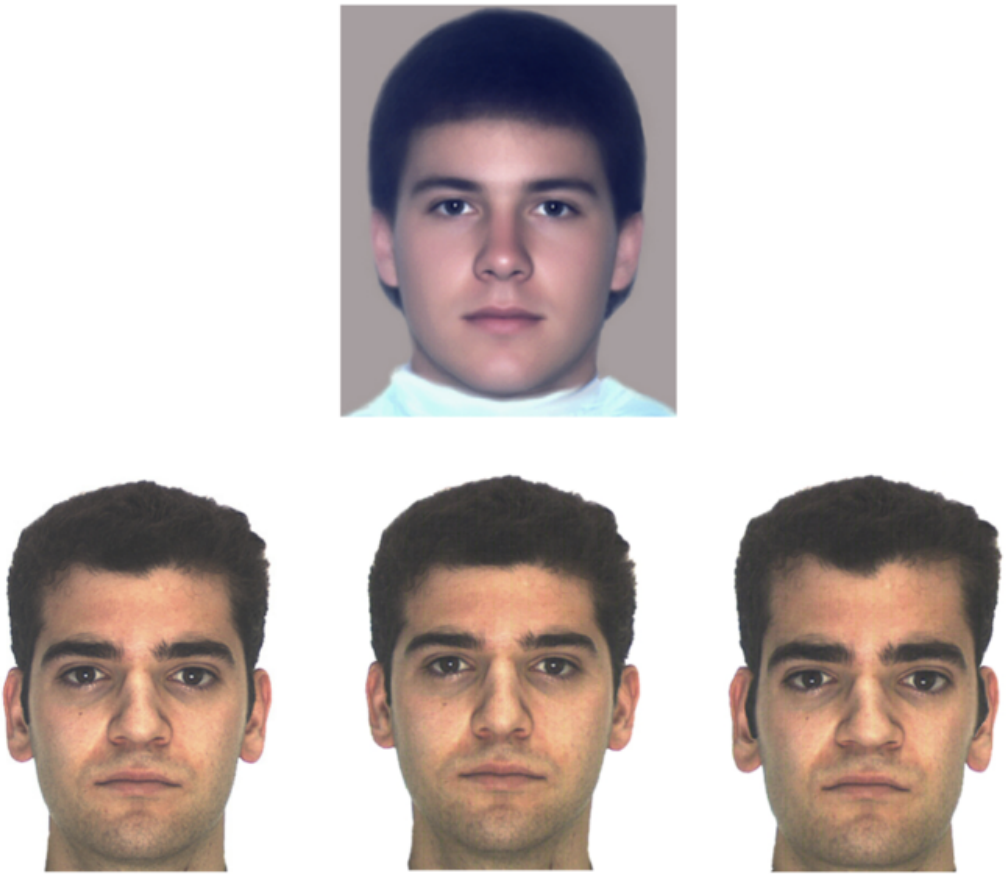


Figure 2.
Top. An averaged face created from 32 individual faces.
Bottom left. Original face from Martinez & Benevente (1998).
Bottom middle. Original face morphed toward the average face.
Bottom right. Original face morphed away from the average face.

One reason average stimuli, including faces, may be preferred is that they are easy to categorize, and when a stimulus is easy to categorize, it elicits positive emotion (Winkielman, Halberstadt, Fazendeiro, & Catty, 2006). Another possible reason average stimuli may be preferred is that we may be less apprehensive about familiar-looking stimuli (Zajonc, 2001). All other things equal, we prefer stimuli we have seen before over novel ones, a **mere-exposure effect**, and we also prefer stimuli that are similar to those we have seen before, a generalized mere-exposure effect. Consistent with a reduced apprehensiveness mechanism, exposure to other-race faces reduced neural activation in a region that responds to negatively valenced stimuli, not only for the faces the participants saw, but also new faces from the familiarized

other-race category (Zebrowitz & Zhang, 2012). Such a generalized mere-exposure effect also could explain the preference for average stimuli, which look more familiar, although the effect may be more reliable for judgments of likeability than attractiveness (Rhodes, Halberstadt, & Brajkovich, 2001; Rhodes, Halberstadt, Jeffery, & Palermo, 2005). Whether due to ease of categorization or less apprehensiveness, the cognitive explanation holds that certain people are more attractive because perceptual learning has rendered them more familiar.

Origins of High Attractiveness
Cultural Learning
Preferences for Prototypes
Signal of Mate Quality
Overgeneralized Reactions to Disease or Bad Genes

In contrast to the cognitive explanation for why we find particular people attractive, the evolutionary explanation argues that preferences developed because it was adaptive to prefer those individuals. More specifically, the **good genes hypothesis** proposes that people with physical qualities like averageness, symmetry, sex prototypicality, and youthfulness are more attractive because they are better-quality mates. Mate quality may reflect better health, greater fertility, or better genetic traits that lead to better offspring and hence greater reproductive success (Thornhill & Gangestad, 1999). Theoretically, averageness and symmetry provide evidence of genetic fitness because they show the ability to develop normally despite environmental stressors (Scheib, Gangestad, & Thornhill, 1999). Averageness also signals genetic diversity (Thornhill & Gangestad, 1999), which is associated with a strong immune system (Penn, Damjanovich, & Potts, 2002). High masculinity in male faces may indicate fitness because it shows an ability to withstand the stress that testosterone places on the immune system (Folstad & Karter, 1992). High femininity in female faces may signal fitness by indicating sexual maturity and fertility. The evolutionary account also can explain the attractiveness of youthfulness, since aging is often associated with declines in cognitive and physical functioning and decreased fertility.

What do you look for in a mate – attractiveness, intelligence, both or something completely different? [Image: Will Fisher, CC BY-NC-SA 2.0, https://goo.gl/Toc0ZF]

Some researchers have investigated whether attractiveness actually does signal mate quality by examining the relationship between facial attractiveness and health (see Rhodes, 2006, for a review). Support for such a relationship is weak. In particular, people rated very low in attractiveness, averageness, or masculinity (in the case of men) tend to have poorer health than those who are average in these qualities. However, people rated high in attractiveness, averageness, or masculinity do not differ from those who are average (Zebrowitz & Rhodes, 2004). Low body attractiveness, as indexed by overweight or a sex-atypical waist-to-hip ratio, also may be associated with poorer health or lower fertility in women (Singh & Singh, 2011). Others have assessed whether attractiveness signals mate quality by examining the relationship with intelligence, since more intelligent mates may increase reproductive success. In particular, more intelligent mates may provide better parental care. Also, since intelligence is heritable, more intelligent mates may yield more intelligent offspring, who have a better chance of passing genes on to the next generation (Miller & Todd, 1998). The evidence indicates that attractiveness is positively correlated with intelligence. However, as in the case of health, the relationship is weak, and it appears to be largely due to lower-than-average intelligence among those who are very low in attractiveness rather than higher-than-average intelligence among those who are highly attractive (Zebrowitz & Rhodes, 2004). These results are consistent with the fact that subtle negative deviations from average attractiveness can signal low fitness. For example, minor facial anomalies that are too subtle for the layperson to recognize as a genetic anomaly are associated with lower intelligence (Foroud et al., 2012). Although the level of attractiveness provides a valid cue to low, but not high, intelligence or health, it is important to bear in mind that attractiveness is only a weak predictor of these traits, even in the range where it has some validity.

The finding that low, but not high, attractiveness can be diagnostic of actual traits is consistent with another explanation for why we find particular people attractive. This has been dubbed **anomalous face overgeneralization**, but it could equally apply to anomalous voices or bodies. The evolutionary account has typically assumed that as attractiveness increases, so does fitness, and it has emphasized the greater fitness of highly attractive individuals, a *good genes* effect (Buss, 1989). In contrast, the overgeneralization hypothesis argues that the level of attractiveness provides an accurate index *only* of low fitness. On this account, the *attractiveness halo* effect is a by-product of reactions to low fitness. More specifically, we overgeneralize the adaptive tendency to use low attractiveness as an indication of lower-than-average health and intelligence, and we mistakenly use higher-than-average attractiveness as an indication of higher-than-average health and intelligence (Zebrowitz & Rhodes, 2004). The overgeneralization hypothesis differs from the evolutionary hypothesis in another important respect. It is concerned with the importance of detecting low fitness not only when choosing a mate, but also in other social interactions. This is consistent with the fact that the attractiveness halo effect is present in many domains.

Whereas the cultural, cognitive, and overgeneralization accounts of attractiveness do not necessarily predict that the halo effect in impressions will be accurate, the evolutionary "good genes" account does. As we have seen, there is some support for this prediction, but the effects are too weak and circumscribed to fully explain the strong halo effect in response to highly attractive people. In addition, it is important to recognize that whatever accuracy there is does not necessarily imply a genetic link between attractiveness and adaptive traits, such as health or intelligence. One non-genetic mechanism is an influence of environmental factors. For example, the quality of nutrition and that a person receives may have an impact on the development of both attractiveness and health (Whitehead, Ozakinci, Stephen, & Perrett, 2012). Another non-genetic explanation is a self-fulfilling prophecy effect (Snyder, Tanke, & Berscheid, 1977). For example, the higher expectations that teachers have for more attractive students may nurture higher intelligence, an effect that has been shown when teachers have high expectations for reasons other than appearance (Rosenthal, 2003).

Conclusions

Although it may seem unfair, attractiveness confers many advantages. More attractive people are favored not only as romantic partners but, more surprisingly, by their parents, peers, teachers, employers, and even judges and voters. Moreover, there is substantial agreement about who is attractive, with infants and perceivers from diverse cultures showing similar responses. Although this suggests that cultural influences cannot completely explain attractiveness, experience does have an influence. There is controversy about why certain people are attractive to us. The cognitive account attributes higher attractiveness to the ease of processing *prototypes* or the safety associated with familiar stimuli. The evolutionary account attributes higher attractiveness to the adaptive value of preferring physical qualities that signal better health or genetic fitness when choosing mates. The overgeneralization account attributes higher attractiveness to the overgeneralization of an adaptive avoidance of physical qualities that signal poor health or low genetic fitness.

If you were to be asked to imagine an attractive person, what would they look like? What would they be like? Why? [Image: WOCinTech Chat, https://goo.gl/R8zJJu, CC BY 2.0, https://goo.gl/BRvSA7]

Although there is debate as to which explanation is best, it is important to realize that all of the proposed mechanisms may have some validity.

Love, Friendship, and Social Support

Debi Brannan & Cynthia D. Mohr

Friendship and love, and more broadly, the relationships that people cultivate in their lives, are some of the most valuable treasures a person can own. This module explores ways in which we try to understand how friendships form, what attracts one person to another, and how love develops. It also explores how the Internet influences how we meet people and develop deep relationships. Finally, this module will examine social support and how this can help many through the hardest times and help make the best times even better.

Learning Objectives

- Understand what attracts us to others.
- ~~Review research that suggests that friendships are important for our health and well-being.~~
- ~~Examine the influence of the Internet on friendship and developing relationships.~~
- ~~Understand what happens to our brains when we are in love.~~
- ~~Consider the complexity of love.~~
- ~~Examine the construct and components of social support.~~

~~Introduction~~

~~The importance of relationships has been examined by researchers for decades. Many researchers point to sociologist Émile Durkheim's classic study of suicide and social ties (1951)~~

Interpersonal relationships are vital to our physiological and psychological health. [CC0 Public Domain, https://goo.gl/m25gce]

as a starting point for this work. Durkheim argued that being socially connected is imperative to achieving personal well-being. In fact, he argued that a person who has no close relationships is likely a person who is at risk for suicide. It is those relationships that give a person meaning in their life. In other words, suicide tends to be higher among those who become disconnected from society. What is interesting about that notion is when people are asked to describe the basic necessities for life—people will most often say food, water, and shelter, but seldom do people list "close relationships" in the top three. Yet time and time again, research has demonstrated that we are social creatures and we need others to survive and thrive. Another way of thinking about it is that close relationships are the psychological equivalent of food and water; in other words, these relationships are necessary for survival. Baumeister and Leary (1995) maintain that humans have basic needs and one of them is the need to belong; these needs are what makes us human and give a sense of purpose and identity to our lives (Brissette, Cohen, & Seeman, 2000; Ryff, 1989).

Given that close relationships are so vital to well-being, it is important to ask how interpersonal relationships begin. What makes us like or love one person but not another? Why is it that when bad things happen, we frequently want to talk to our friends or family about the situation? Though these are difficult questions to answer because relationships are complicated and unique, this module will examine how relationships begin; the impact of technology on relationships; and why coworkers, acquaintances, friends, family, and intimate partners are so important in our lives.

Attraction: The Start of Friendship and Love

Why do some people hit it off immediately? Or decide that the friend of a friend was not likable? Using scientific methods, psychologists have investigated factors influencing attraction and have identified a number of variables, such as similarity, proximity (physical or functional), familiarity, and reciprocity, that influence with whom we develop relationships.

Proximity

Often we "stumble upon" friends or romantic partners; this happens partly due to how close in proximity we are to those people. Specifically, **proximity** or *physical nearness* has been found to be a significant factor in the development of relationships. For example, when college students go away to a new school, they will make friends consisting of classmates, roommates, and teammates (i.e., people close in proximity). Proximity allows people the opportunity to get to know one other and discover their similarities—all of which can result in a friendship or intimate relationship. Proximity is not just about geographic distance, but rather **functional distance**, or the frequency with which we cross paths with others. For example, college students are more likely to become closer and develop relationships with people on their dorm-room floors because they see them (i.e., cross paths) more often than they see people on a different floor. How does the notion of proximity apply in terms of online relationships? Deb Levine (2000) argues that in terms of developing online relationships and attraction, functional distance refers to being at the same place at the same time in a virtual world (i.e., a chat room or Internet forum)—crossing virtual paths.

Great and important relationships can develop by chance and physical proximity helps. For example, seeing someone regularly on your daily bus commute to work or school may be all that's necessary to spark a genuine friendship. [Image: Cheri Lucas Rowlands, https://goo.gl/crCc0Q, CC BY-SA 2.0, https://goo.gl/rxiUsF]

Familiarity

One of the reasons why proximity matters to attraction is that it breeds *familiarity*; people are more attracted to that which is familiar. Just being around someone or being repeatedly exposed to them increases the likelihood that we will be attracted to them. We also tend to feel safe with familiar people, as it is likely we know what to expect from them. Dr. Robert Zajonc (1968) labeled this phenomenon the **mere-exposure effect**. More specifically, he argued that the more often we are exposed to a stimulus (e.g., sound, person) the more likely we are to view that stimulus positively. Moreland and Beach (1992) demonstrated this by

exposing a college class to four women (similar in appearance and age) who attended different numbers of classes, revealing that the more classes a woman attended, the more familiar, similar, and attractive she was considered by the other students.

There is a certain comfort in knowing what to expect from others; consequently research suggests that we like what is familiar. While this is often on a subconscious level, research has found this to be one of the most basic principles of attraction (Zajonc, 1980). For example, a young man growing up with an overbearing mother may be attracted to other overbearing women *not* because he likes being dominated but rather because it is what he considers normal (i.e., familiar).

Similarity

When you hear about couples such as Sandra Bullock and Jesse James, or Kim Kardashian and Kanye West, do you shake your head thinking "this won't last"? It is probably because they seem so different. While many make the argument that opposites attract, research has found that is generally not true; s*imilarity* is key. Sure, there are times when couples can appear fairly different, but overall we like others who are like us. Ingram and Morris (2007) examined this phenomenon by inviting business executives to a cocktail mixer, 95% of whom reported that they wanted to meet new people. Using electronic name tag tracking, researchers revealed that the executives did not mingle or meet new people; instead, they only spoke with those they already knew well (i.e., people who were similar).

When it comes to marriage, research has found that couples tend to be very similar, particularly when it comes to age, social class, race, education, physical attractiveness, values, and attitudes (McCann Hamilton, 2007; Taylor, Fiore, Mendelsohn, & Cheshire, 2011). This phenomenon is known as the *matching hypothesis* (Feingold, 1988; Mckillip & Redel, 1983). We like others who validate our points of view and who are similar in thoughts, desires, and attitudes.

Reciprocity

Another key component in attraction is *reciprocity*; this principle is based on the notion that we are more likely to like someone if they feel the same way toward us. In other words, it is hard to be friends with someone who is not friendly in return. Another way to think of it is that relationships are built on give and take; if one side is not reciprocating, then the relationship is doomed. Basically, we feel obliged to give what we get and to maintain equity in relationships. Researchers have found that this is true across cultures (Gouldner, 1960).

Friendship

> "In poverty and other misfortunes of life, true friends are a sure refuge. They keep the young out of mischief; they comfort and aid the old in their weakness, and they incite those in the prime of life to noble deeds." — Aristotle

Having best friends make us feel better about ourselves and buffers us from stress. [Image: CC0 Public Domain, https://goo.gl/m25gce]

Research has found that close friendships can protect our mental and physical health when times get tough. For example, Adams, Santo, and Bukowski (2011) asked fifth- and sixth-graders to record their experiences and self-worth, and to provide saliva samples for 4 days. Children whose best friend was present during or shortly after a negative experience had significantly lower levels of the stress hormone cortisol in their saliva compared to those who did not have a best friend present. Having a best friend also seemed to protect their feelings of self-worth. Children who did not identify a best friend or did not have an available best friend during distress experienced a drop in self-esteem over the course of the study.

Workplace friendships

Friendships often take root in the workplace, due to the fact that people are spending as much, or more, time at work than they are with their family and friends (Kaufman & Hotchkiss, 2003). Often, it is through these relationships that people receive mentoring and obtain social support and resources, but they can also experience conflicts and the potential for misinterpretation when sexual attraction is an issue. Indeed, Elsesser and Peplau (2006) found that many workers reported that friendships grew out of collaborative work projects, and these friendships made their days more pleasant.

In addition to those benefits, Riordan and Griffeth (1995) found that people who worked in an environment where friendships could develop and be maintained were more likely to

report higher levels of job satisfaction, job involvement, and organizational commitment, and they were less likely to leave that job. Similarly, a Gallup poll revealed that employees who had "close friends" at work were almost 50% more satisfied with their jobs than those who did not (Armour, 2007).

Internet friendships

What influence does the Internet have on friendships? It is not surprising that people use the Internet with the goal of meeting and making new friends (Fehr, 2008; McKenna, 2008). Researchers have wondered if the issue of not being face-to-face reduces the authenticity of relationships, or if the Internet really allows people to develop deep, meaningful connections. Interestingly, research has demonstrated that virtual relationships are often as intimate as in-person relationships; in fact, Bargh and colleagues found that online relationships are sometimes more intimate (Bargh et al., 2002). This can be especially true for those individuals who are more socially anxious and lonely—such individuals who are more likely to turn to the Internet to find new and meaningful relationships (McKenna, Green, & Gleason, 2002). McKenna et al. (2002) suggest that for people who have a hard time meeting and maintaining relationships, due to shyness, anxiety, or lack of face-to-face social skills, the Internet provides a safe, nonthreatening place to develop and maintain relationships. Similarly, Penny Benford (2008) found that for high-functioning autistic individuals, the Internet facilitated communication and relationship development with others, which would have been more difficult in face-to-face contexts, leading to the conclusion that Internet communication could be empowering for those who feel frustrated when communicating face-to face.

Romantic relationships are so central to psychological health that most people in the world are or will be in a romantic relationship in their lifetime. [Image: CC0 Public Domain, https://goo.gl/m25gce]

Love

Is all love the same? Are there different types of love? Examining these questions more closely, Robert Sternberg's (2004; 2007) work has focused on the notion that all types of love are comprised of three distinct areas: intimacy, passion, and commitment. Intimacy includes caring,

closeness, and emotional support. The passion component of love is comprised of physiological and emotional arousal; these can include physical attraction, emotional responses that promote physiological changes, and sexual arousal. Lastly, commitment refers to the cognitive process and decision to commit to love another person and the willingness to work to keep that love over the course of your life. The elements involved in intimacy (caring, closeness, and emotional support) are generally found in all types of close relationships—for example, a mother's love for a child or the love that friends share. Interestingly, this is not true for passion. Passion is unique to romantic love, differentiating friends from lovers. In sum, depending on the type of love and the stage of the relationship (i.e., newly in love), different combinations of these elements are present.

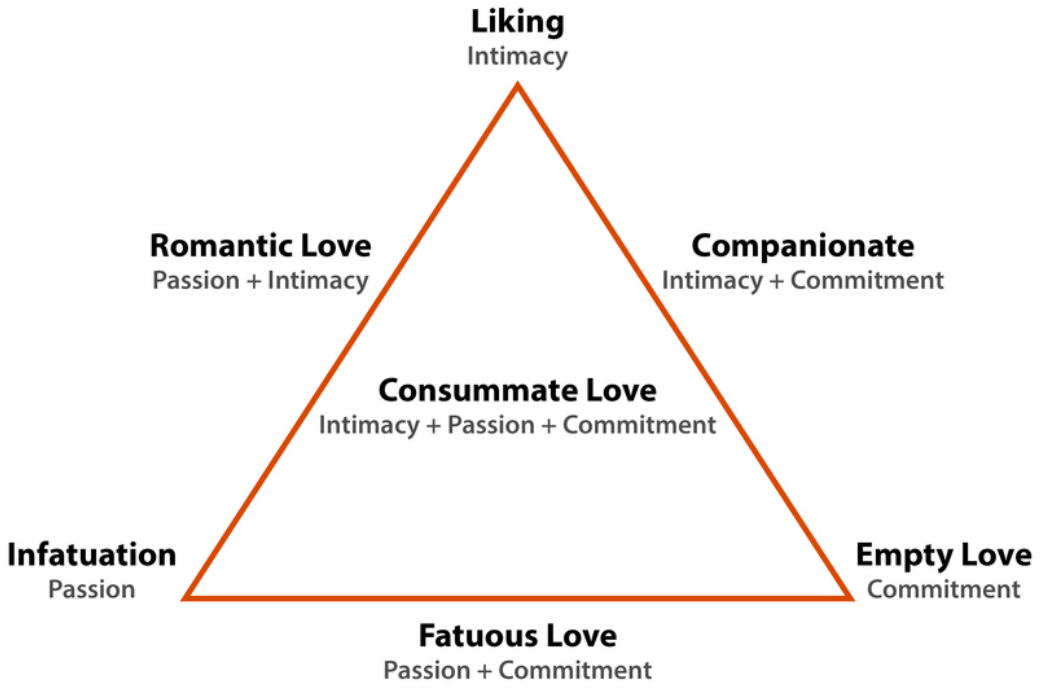


Figure 1: Triangular Theory of Love. Adapted from Wikipedia Creative Commons, 2013

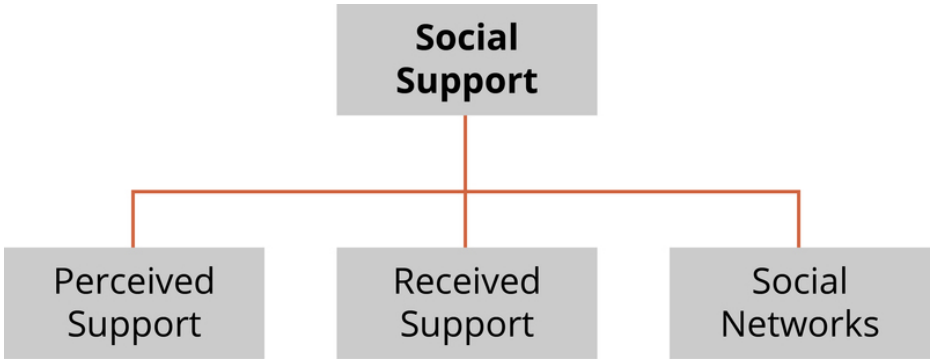
Taking this theory a step further, anthropologist Helen Fisher explained that she scanned the brains (using fMRI) of people who had just fallen in love and observed that their brain chemistry was "going crazy," similar to the brain of an addict on a drug high (Cohen, 2007). Specifically, serotonin production increased by as much as 40% in newly in-love individuals. Further, those newly in love tended to show obsessive-compulsive tendencies. Conversely, when a person experiences a breakup, the brain processes it in a similar way to quitting a heroin habit (Fisher, Brown, Aron, Strong, & Mashek, 2009). Thus, those who believe that breakups are physically painful are correct! Another interesting point is that long-term love and sexual desire activate different areas of the brain. More specifically, sexual needs activate the part of the brain that

~~is particularly sensitive to innately pleasurable things such as food, sex, and drugs (i.e., the striatum—a rather simplistic reward system), whereas love requires conditioning—it is more like a habit. When sexual needs are rewarded consistently, then love can develop. In other words, love grows out of positive rewards, expectancies, and habit (Cacioppo, Bianchi-Demicheli, Hatfield & Rapson, 2012).~~

~~Love and the Internet~~

~~The ways people are finding love has changed with the advent of the Internet. In a poll, 49% of all American adults reported that either themselves or someone they knew had dated a person they met online (Madden & Lenhart, 2006). As Finkel and colleagues (2007) found, social networking sites, and the Internet generally, perform three important tasks. Specifically, sites provide individuals with access to a database of other individuals who are interested in meeting someone. Dating sites generally reduce issues of proximity, as individuals do not have to be close in proximity to meet. Also, they provide a medium in which individuals can communicate with others. Finally, some Internet dating websites advertise special matching strategies, based on factors such as personality, hobbies, and interests, to identify the "perfect match" for people looking for love online. In general, scientific questions about the effectiveness of Internet matching or online dating compared to face-to-face dating remain to be answered.~~

~~It is important to note that social networking sites have opened the doors for many to meet people that they might not have ever had the opportunity to meet; unfortunately, it now appears that the social networking sites can be forums for unsuspecting people to be duped. In 2010 a documentary, *Catfish*, focused on the personal experience of a man who met a woman online and carried on an emotional relationship with this person for months. As he later came to discover, though, the person he thought he was talking and writing with did not exist. As Dr. Aaron Ben-Zeév stated, online relationships leave room for deception; thus, people have to be cautious.~~



Social Support

When bad things happen, it is important for people to know that others care about them and can help them out. Unsurprisingly, research has found that this is a common thread across cultures (Markus & Kitayma, 1991; Triandis, 1995) and over time (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000); in other words, social support is the active ingredient that makes our relationships particularly beneficial. But what *is* social support? One way of thinking about social support is that it consists of three discrete conceptual components.

Perceived Social Support

Have you ever thought that when things go wrong, you know you have friends/family members that are there to help you? This is what psychologists call **perceived social support** or "a psychological sense of support" (Gottlieb, 1985). How powerful is this belief that others will be available in times of need? To examine this question, Dr. Arnberg and colleagues asked 4,600 survivors of the tragic 2004 Indian Ocean (or Boxing Day) Tsunami about their perception of social support provided by friends and family after the event. Those who experienced the most amount of stress found the most benefit from just knowing others were available if they needed anything (i.e., perceived support). In other words, the magnitude of the benefits depended on the extent of the stress, but the bottom line was that for these survivors, knowing that they had people around to support them if they needed it helped them all to some degree.

Perceived support has also been linked to well-being. Brannan and colleagues (2012) found that perceived support predicted each component of well-being (high positive affect, low negative affect, high satisfaction with life) among college students in Iran, Jordan, and the United States. Similarly, Cohen and McKay (1984) found that a high level of perceived support can serve as a buffer against stress. Interestingly enough, Dr. Cohen found that those with higher levels of social support were less likely to catch the common cold. The research is clear—perceived social support increases happiness and well-being and makes our live better in general (Diener & Seligman, 2002; Emmons & Colby, 1995).

Received Social Support

Received support is the actual receipt of support or helping behaviors from others (Cohen & Wills, 1985). Interestingly, unlike perceived support, the benefits of *received* support have been beset with mixed findings (Stroebe & Stroebe, 1996). Similar to perceived support, receiving support can buffer people from stress and positively influence some individuals—however,

Social support is one of the ways people maintain healthy communities. [Image: Fort Belvoir Community Hospital, https://goo.gl/9f1c9N, CC BY-NC 2.0, https://goo.gl/VnKlK8]

others might not want support or think they need it. For example, dating advice from a friend may be considered more helpful than such advice from your mom! Interestingly, research has indicated that regardless of the support provider's intentions, the support may not be considered as helpful to the person receiving the support if it is unwanted (Dunkel-Schetter, Blasband, Feinstein, & Herbert, 1992; Cutrona, 1986). Indeed, mentor support was viewed negatively by novice ESOL teachers (those teaching English as a second language in other countries; Brannan & Bleistein, 2012). Yet received support from family was perceived as very positive—the teachers said that their family members cared enough to ask about their jobs and told them how proud they were. Conversely, received mentor support did not meet teachers' needs, instead making them feel afraid and embarrassed to receive mentor support.

Quality or Quantity?

With so many mixed findings, psychologists have asked whether it is the quality of social support that matters or the quantity (e.g., more people in my support network). Interestingly, research by Friedman and Martin (2011) examining 1,500 Californians over 8 decades found that while quality does matter, individuals with larger social networks lived significantly longer than those with smaller networks. This research suggests we should count the number of our friends / family members—the more, the better, right? Not necessarily: Dunbar (1992; 1993) argued that we have a cognitive limit with regard to how many people with whom we can maintain social relationships. The general consensus is about 150—we can only "really" know (maintain contact and relate to) about 150 people. Finally, research shows that diversity also matters in terms of one's network, such that individuals with more diverse social networks (i.e., different types of relationships including friends, parents, neighbors, and classmates) were less likely to get the common cold compared to those with fewer and less diverse networks (Cohen, Doyle, Turner, Alper, & Skoner, 2003). In sum, it is important to have quality relationships as well as quantity—and as the Beatles said, "all you need is love—love is all you need."

Outside Resources

Article: For Couples, Time Can Upend the Laws of Attraction - This is an accessible New York Times article, summarizing research findings that show romantic couples' level of attractiveness is correlated if they started dating soon after meeting (predicted by the matching hypothesis). However, if they knew each other or were friends for a while before dating, they were less likely to match on physical attractiveness. This research highlights that while attractiveness is important, other factors such as acquaintanceship length can also be important.
http://nyti.ms/1HtIkFt

Article: Is Faceism Spoiling Your Life? - This is an accessible article that describes faceism, as well as how our expectations of people (based on their facial features) influence our reactions to them. It presents the findings from a few studies, such as how participants making snap judgments of political candidates' faces predicted who won the election with almost 70% accuracy. It includes example photos of faces we would consider more or less competent, dominant, extroverted, or trustworthy.
http://www.bbc.com/future/story/20150707-is-faceism-spoiling-your-life

Video: Is Your Face Attractive? - This is a short video. The researcher in the video discusses and shows examples of face morphs, and then manipulates pictures of faces, making them more or less masculine or feminine. We tend to prefer women with more feminized faces and men with more masculine faces, and the video briefly correlates these characteristics to good health.
http://www.discovery.com/tv-shows/other-shows/videos/science-of-sex-appeal-is-your-face-attractive/

Video: Multiple videos realted to the science of beauty
http://dsc.discovery.com/search.htm?terms=science+of+beauty

Video: Multiple videos related to the science of sex appeal
http://dsc.discovery.com/search.htm?terms=science+of+sex+appeal

Video: The Beauty of Symmetry - A short video about facial symmetry. It describes facial symmetry, and explains why our faces aren't always symmetrical. The video shows a demonstration of a researcher photographing a man and a woman and then manipulating the photos.
http://www.discovery.com/tv-shows/other-shows/videos/science-of-sex-appeal-the-beauty-of-symmetry/

Video: The Economic Benefits of Being Beautiful - Less than 2-minute video with cited statistics about the advantages of being beautiful. The video starts with information about how babies are treated differently, and it quickly cites 14 facts about the advantages of being attractive, including the halo effect.
https://youtu.be/b_gx2Uc95os

Discussion Questions

1. Why do you think the attractiveness halo exists even though there is very little evidence that attractive people are more intelligent or healthy?
2. What cultural influences affect whom you perceive as attractive? Why?
3. How do you think evolutionary theories of why faces are attractive apply in a modern world, where people are much more likely to survive and reproduce, regardless of how intelligent or healthy they are?
4. Which of the theories do you think provides the most compelling explanation for why we find certain people attractive?

Outside Resources

Movie: Official Website of Catfish the Movie
http://www.iamrogue.com/catfish

Video: Ted Talk from Helen Fisher on the brain in love
http://www.ted.com/talks/helen_fisher_studies_the_brain_in_love.html

Video: The Science of Heartbreak
https://youtu.be/lGglw8eAikY

Web: Groundbreaking longitudinal study on longevity from Howard S. Friedman and Leslie R. Martin
http://www.howardsfriedman.com/longevityproject/

Discussion Questions

1. What is more important—perceived social support or received social support? Why?
2. We understand how the Internet has changed the dating scene—how might it further change how we become romantically involved?
3. Can you love someone whom you have never met?
4. Do you think it is the quality or quantity of your relationships that really matters most?

Vocabulary

Anomalous face overgeneralization hypothesis
Proposes that the attractiveness halo effect is a by-product of reactions to low fitness. People overgeneralize the adaptive tendency to use low attractiveness as an indicator of negative traits, like low health or intelligence, and mistakenly use higher-than-average attractiveness as an indicator of high health or intelligence.

Attractiveness halo effect
The tendency to associate attractiveness with a variety of positive traits, such as being more sociable, intelligent, competent, and healthy.

Good genes hypothesis
Proposes that certain physical qualities, like averageness, are attractive because they advertise mate quality—either greater fertility or better genetic traits that lead to better offspring and hence greater reproductive success.

Mere-exposure effect
The tendency to prefer stimuli that have been seen before over novel ones. There also is a generalized mere-exposure effect shown in a preference for stimuli that are similar to those that have been seen before.

Morph
A face or other image that has been transformed by a computer program so that it is a mixture of multiple images.

Prototype
A typical, or average, member of a category. Averageness increases attractiveness.

Vocabulary

Functional distance
The frequency with which we cross paths with others.

Mere-exposure effect
The notion that people like people/places/things merely because they are familiar with them.

Perceived social support
A person's perception that others are there to help them in times of need.

Proximity
Physical nearness.

Received social support
The actual act of receiving support (e.g., informational, functional).

Support support network
The people who care about and support a person.

References

Benson, P. L., Karabenick, S. A., & Lerner, R. M. (1976). Pretty pleases: The effects of physical attractiveness, race, and sex on receiving help. *Journal of Experimental Social Psychology, 12*, 409–415.

Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences, 12*, 1–49.

Canning, H., & Mayer, J. (1966). Obesity—its possible effect on college acceptance. *New England Journal of Medicine, 275*, 1172–1174.

Collins, S. A. (2000). Men's voices and women's choices. *Animal Behaviour, 60*, 773–780.

Crandall, C. S. (1991). Do heavy-weight students have more difficulty paying for college? *Personality and Social Psychology Bulletin, 17*, 606–611.

Cunningham, M. R. (1986). Measuring the physical in physical attractiveness: Quasi-experiments on the sociobiology of female facial beauty. *Journal of Personality and Social Psychology, 50*, 925–935.

Cunningham, M. R., Roberts, A. R., Barbee, A. P., Druen, P. B., & Wu, C. (1995). 'Their ideas of beauty are, on the whole, the same as ours': Consistency and variability in the cross-cultural perception of female physical attractiveness. *Journal of Personality and Social Psychology, 68*, 261–279.

Dipboye, R. L., Arvey, R. D., & Terpstra, D. E. (1977). Sex and physical attractiveness of raters and applicants as determinants of résumé evaluations. *Journal of Applied Psychology, 62*, 288–294.

Eagly, A. H., Ashmore, R. D., Makhijani, M. G., & Longo, L. C. (1991). What is beautiful is good, but . . . : A meta-analytic review of research on the physical attractiveness stereotype. *Psychological Bulletin, 110*, 109–128.

Feingold, A. (1990). Gender differences in effects of physical attractiveness on romantic attraction: A comparison across five research paradigms. *Journal of Personality and Social Psychology, 59*, 981–993.

Feingold, A. (1988). Matching for attractiveness in romantic partners and same-sex friends: A meta-analysis and theoretical critique. *Psychological Bulletin, 104*, 226–235.

Folstad, I., & Karter, A. J. (1992). Parasites, bright males, and the immunocompetence handicap. *American Naturalist, 139*, 603–622.

Foroud, T. W., Wetherill, L., Vinci-Booher, S., Moore, E. S., Ward, R. E., Hoyme, H. E.... Jacobson, S. W. (2012). Relation over time between facial measurements and cognitive outcomes in

fetal alcohol-exposed children. *Alcoholism: Clinical and Experimental Research, 36*, 1634–1646.

Franklin, R. G., Jr., & Adams, R. B., Jr. (2010). The two halves of beauty: Laterality and the duality of facial attractiveness. *Brain and Cognition, 72*, 300–305.

Franklin, R. G., Jr., & Adams, R. B., Jr. (2009). A dual-process account of female facial attractiveness preferences: Sexual and nonsexual routes. *Journal of Experimental Social Psychology, 45*, 1156–1159.

Gregory, S. W., & Gallagher, T. J. (2002). Spectral analysis of candidates' nonverbal vocal communication: Predicting U.S. presidential election outcomes. *Social Psychology Quarterly, 65*, 298–308.

Gross, A. E., & Crofton, C. (1977). What is good is beautiful. *Sociometry, 40*, 85–90.

Halberstadt, J. B. (2006). The generality and ultimate origins of the attractiveness of prototypes. *Personality and Social Psychology Review, 10*, 166–183.

Hamermesh, D. S., & Biddle, J. E. (1994). Beauty and the labor market. *American Economic Review, 84*, 1174–1194.

Hebl, M., & Heatherton, T. F. (1997). The stigma of obesity: The differences are black and white. *Personality and Social Psychology Bulletin, 24*, 417–426.

Hildebrandt, K. A., & Fitzgerald, H. E. (1979). Facial feature determinants of perceived infant attractiveness. *Infant Behavior and Development, 2*, 329–339.

Hosoda, M., Stone-Romero, E. F., & Coats, G. (2003). The effects of physical attractiveness on job-related outcomes: A meta-analysis of experimental studies. *Personnel Psychology, 56*, 431-462.

Kramer, S., Zebrowitz, L. A., San Giovanni, J. P., & Sherak, B. (1995). Infants' preferences for attractiveness and babyfaceness. In B. G. Bardy, R. J. Bootsma, & Y. Guiard (Eds.), *Studies in Perception and Action III* (pp. 389–392). Hillsdale, N.J.: Erlbaum.

Langlois, J. H., & Roggman, L. A. (1990). Attractive faces are only average. *Psychological Science, 1*, 115–121.

Langlois, J. H., Kalakanis, L., Rubenstein, A. J., Larson, A., Hallam, M., & Smoot, M. (2000). Maxims or myths of beauty? A meta-analytic and theoretical review. *Psychological Bulletin, 126*, 390–423.

Langlois, J. H., Roggman, L. A., & Rieser-Danner, L. A. (1990). Infants' differential social responses to attractive and unattractive faces. *Developmental Psychology, 26*(1), 153–159.

Langlois, J. H., Roggman, L. A., Casey, R. J., Ritter, J. M., Rieser-Danner, L. A., & Jenkins, V. Y. (1987). Infant preferences for attractive faces: Rudiments of a stereotype? *Developmental*

Psychology, 23, 363–369.

Larkin, J. C., & Pines, H. A. (1979). No fat persons need apply: Experimental studies of the overweight stereotype and hiring preference. *Work and Occupations, 6*, 312–327.

Little, A. C., Jones, B. C., Penton-Voak, I. S., Burt, D. M., & Perrett, D. I. (2002). Partnership status and the temporal context of relationships influence human female preferences for sexual dimorphism in male face shape. *Proceedings of the Royal Society of London B, 269*, 1095–1100.

Martinez, A. M., & Benavente, R. (1998). The AR face database, CVC Tech. Report #24.

Miller, G. F., & Todd, P. M. (1998). Mate choice turns cognitive. *Trends in Cognitive Sciences, 2*, 190–198.

Miyake, K., & Zuckerman, M. (1993). Beyond personality impressions: Effects of physical and vocal attractiveness on false consensus, social comparison, affiliation, and assumed and perceived similarity. *Journal of Personality, 61*, 411–437.

Montoya, R. M. (2008). I'm hot, so I'd say you're not: The influence of objective physical attractiveness on mate selection. *Personality and Social Psychology Bulletin, 34*, 1315–1331.

Mueller, U., & Mazur, A. (1996). Facial dominance of West Point cadets as a predictor of later military rank. *Social Forces, 74*, 823–850.

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review, 84*, 231–259.

Penn, D. J., Damjanovich, K., & Potts, W. K. (2002). MHC heterozygosity confers a selective advantage against multiple-strain infections. *Proceedings of the National Academy of Sciences, 99*, 11260–11264.

Principe, C. P., & Langlois, J. H. (2012). Shifting the prototype: Experience with faces influences affective and attractiveness preferences. *Social Cognition, 30*, 109–120.

Puts, D. A., Barndt, J. L., Welling, L. L., Dawood, K., & Burriss, R. P. (2011). Intrasexual competition among women: Vocal femininity affects perceptions of attractiveness and flirtatiousness. *Personality and Individual Differences, 50*, 111–115.

Rhodes, G. (2006). The evolutionary psychology of facial beauty. *Annual Review of Psychology, 57*, 199–226.

Rhodes, G., Halberstadt, J., & Brajkovich, G. (2001) Generalization of mere-exposure effects to averaged composite faces. *Social Cognition, 19*, 57–70.

Rhodes, G., Halberstadt, J., Jeffery, L., & Palermo, R. (2005). The attractiveness of average faces is not a generalized mere-exposure effect. *Social Cognition, 23*, 205–217.

Rhodes, G., Jeffery, L., Watson, T. L., Clifford, C. W. G., & Nakayama, K. (2003) Fitting the mind to the world: Face adaptation and attractiveness aftereffects. *Psychological Science, 14*, 558–

566.

Rhodes, G. Simmons, L. W. Peters, M. (2005). Attractiveness and sexual behavior: Does attractiveness enhance mating success? *Evolution and Human Behavior, 26*, 186–201

Richardson, S. A., Goodman, N., Hastorf, A. H., & Dornbusch, S.M. (1961). Cultural uniformity in reaction to physical disabilities. *American Sociology Review, 26*, 241–247.

Riggio, R. E., & Friedman, H. S. (1986). Impression formation: The role of expressive behavior. *Journal of Personality and Social Psychology, 50*, 421–427.

Riggio, R. E., Widaman, K. F., Tucker, J. S., & Salinas, C. (1991). Beauty is more than skin deep: Components of attractiveness. *Basic and Applied Social Psychology, 12*, 423–439.

Rosenthal, R. (2003). Covert communication in laboratories, classrooms, and the truly real world. *Current Directions in Psychological Science, 12*, 151–154.

Rubenstein, A. J., Kalakanis, L., & Langlois, J. H. (1999). Infant preferences for attractive faces: A cognitive explanation. *Developmental Psychology, 35*, 848–855.

Scheib, J. E., Gangestad, S. W., & Thornhill, R. (1999). Facial attractiveness, symmetry, and cues of good genes. *Proceedings of the Royal Society of London. Series B: Biological Sciences, 266*, 1913–1917.

Singh, D., & Singh, D. (2011). Shape and significance of feminine beauty: An evolutionary perspective. *Sex Roles, 64*, 723–731.

Snyder, M., Tanke, E. D., & Berscheid, E. (1977). Social perception and interpersonal behavior: On the self-fulfilling nature of social stereotypes. *Journal of Personality and Social Psychology, 35*, 655–666.

Sternglanz, S. H., Gray, J. L., & Murakami, M. (1977). Adult preferences for infantile facial features: An ethological approach. *Animal Behaviour, 25*, 108–115.

Stewart, J. E. (1980). Defendant's attractiveness as a factor in the outcome of criminal trials: An observational study. *Journal of Applied Social Psychology, 10*, 348–361.

Swami, V., Furnham, A., Chamorro-Premuzic, T., Akbar, K., Gordon, N., Harris, T., . . . Tovée, M. J. (2010). More than just skin deep? Personality information influences men's ratings of the attractiveness of women's body sizes. *The Journal of Social Psychology, 150*, 628–647.

Thornhill, R., & Gangestad, S. W. (1999). Facial attractiveness. *Trends in Cognitive Sciences, 3*, 452–460.

Tigue, C. C., Borak, D. J., O'Connor, J. J. M., Schandl, C., & Feinberg, D. R. (2012). Voice pitch influences voting behavior. *Evolution and Human Behavior, 33*, 210–216.

Verhulst, B., Lodge, M., & Lavine, H. (2010). The attractiveness halo: Why some candidates are perceived more favorably than others. *Journal of Nonverbal Behavior, 34*, 111–117.

Walster, E., Aronson, V., Abrahams, D., & Rottman, L. (1966). Importance of physical attractiveness in dating behavior. *Journal of Personality and Social Psychology, 4*, 508–516.

Whitehead, R. D., Ozakinci, G., Stephen, I. D., & Perrett, D. I. (2012). Appealing to vanity: Could potential appearance improvement motivate fruit and vegetable consumption? *American Journal of Public Health, 102*, 207–211.

Winkielman, P., Halberstadt, J., Fazendeiro, T., & Catty, S. (2006). Prototypes are attractive because they are easy on the mind. *Psychological Science, 17*, 799–806.

Zajonc, R. B. (2001). Mere exposure: A gateway to the subliminal. *Current Directions in Psychological Science, 10*, 224–228.

Zebrowitz, L. A., & Zhang, E., (2012). Neural evidence for reduced apprehensiveness of familiarized stimuli in a mere exposure paradigm. *Social Neuroscience, 7*, 347–358.

Zebrowitz, L. A. & Rhodes, G. (2004). Sensitivity to "bad genes" and the anomalous face overgeneralization effect: Accuracy, cue validity, and cue utilization in judging intelligence and health. *Journal of Nonverbal Behavior. 28*, 167–185.

Zebrowitz, L. A., Wang, R., Bronstad, P. M., Eisenberg, D., Undurraga, E., Reyes-García, V., & Godoy, R., (2012). First impressions from faces among U.S. and culturally isolated Tsimane' people in the Bolivian rainforest. *Journal of Cross-Cultural Psychology, 43*, 119–134.

Zuckerman, M., & Driver, R. E. (1989). What sounds beautiful is good: The vocal attractiveness stereotype. *Journal of Nonverbal Behavior, 13*, 67–82.

References

Adams, R. E., Santo, J., & Bukowski, W. M. (2011). The presence of a best friend buffers the effects of negative experiences. *Developmental Psychology, 47(6)*, 1786–1791. doi:10.1037/a0025401

Aristotle. (n.d.). In poverty and other misfortunes of life.... BrainyQuote.com. Retrieved July 25, 2013, from http://www.brainyquote.com/quotes/quotes/a/aristotle148482.html

Armour, S. (2007, August 2). Friendships and work: A good or bad partnership? *USA Today*. Retrieved from http://usatoday30.usatoday.com/money/workplace/2007-08-01-work-friends_N.htm

Bargh, J. A., McKenna, K. Y. A, & Fitsimons, G. G. (2002). Can you see the real me? Activation and expression of the true self on the Internet. *Journal of Social Issues, 58*, 33–48.

Baumeister, R. & Leary, M. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497–529.

Benford, P. (2008). The use of Internet-based communication by people with autism (Doctoral dissertation, University of Nottingham).

Brannan, D., & Bleisten, T. (2012). Novice ESOL teachers' perceptions of social support and self-efficacy. *TESOL Quarterly, 46*, 519–541.

Brannan, D., Biswas-Diener, R., Mohr, C. D., Mortazavi, S., & Stein, N. (2012). Friends and family, a cross-cultural investigation of social support and subjective well-being. Journal of Positive Psychology, 8(1), 65–75.

Brissette, I., Cohen, S., & Seeman, T. E. (2000). Measuring social integration and social networks. In S. Cohen, L. Underwood, & B. Gottlieb (Eds.), Measuring and intervening in social support, (pp. 53–85), New York, NY: Oxford University Press.

Cacioppo, S., Bianchi-Demicheli, F., Hatfield, E., & Rapson, R. L. (2012). Social neuroscience of love. *Clinical Neuropsychiatry, 9(1)*, 3–13.

Cohen, E. (2007, February 15). Loving with all your ... brain. *CNN.com*. Retrieved July 25th, 2013, from http://www.cnn.com/2007/HEALTH/02/14/love.science/.

Cohen, S., & McKay, G. (1984). Social support, stress, and the buffering hypothesis: A theoretical analysis. In A. Baum, J. E. Singer, & S. E. Taylor (Eds.), *Handbook of psychology and health* (pp. 253–267), Volume IV. Hillsdale, NJ: Erlbaum.

Cohen, S., & Wills, T. A. (1985). Stress, social support and the buffering hypothesis. *Psychological Bulletin, 98*, 310–357.

Cohen, S., Doyle, W. J., Turner, R. B., Alper, C. M., & Skoner, D. P. (2003). Sociability and susceptibility to the common cold. *Psychological Science, 14*, 389–395.

Cutrona, C. (1986). Behavioral manifestations of social support: A microanalytic investigation. *Journal of Personality and Social Psychology, 51(1)*, 201–208.

Diener, E. & Seligman, M. E. P. (2002). Very happy people. *Psychological Science, 13*, 81–84.

Dunbar, R. I. M. (1993). Coevolution of neocortical size, group size and language in humans. *Behavioral and Brain Sciences, 16*, 681–735.

Dunbar, R. I. M. (1992). Neocortex size as a constraint on group size in primates. *Journal of Human Evolution, 22*, 469–493. doi:10.1016/0047-2484(92)90081-J

Dunkel-Schetter, C., Blasband, D., Feinstein, L., & Herbert, T. (1992). Elements of supportive interactions: When are attempts to help effective? In Spacapan, S. & Oskamp, S. (Eds.) Helping and being helped: *Naturalistic studies*. (pp. 83–114). Thousand Oaks, CA, US: Sage Publications, Inc.

Durkheim, E. (1951). *Suicide: A study in sociology*. Ornstein, R. & Swencionis, C. (Eds). New York, NY: Free Press.

Elsesser, L., & Peplau, L. A. (2006). The glass partition: Obstacles to cross-sex friendships at work. *Human Relations, 59(8)*, 1077–1100.

Emmons, R. A. & Colby, P. M. (1995). Emotional conflict and well-being relation to perceived availability, daily utilization, and observer reports of social support. *Journal of Personality and Social Psychology, 68*, 947–959.

Fehr, B. (2008). Friendship formation. In S. Sprecher, A. Wenzel, & J. Harvey (Eds.), *Handbook of Relationship Initiation* (pp. 29–54). New York, NY: Psychology Press.

Feingold, Alan (1988). Matching for attractiveness in romantic partners and same-sex friends: A meta-analysis and theoretical critique. *Psychological Bulletin 104*, 226–235.

Finkel, E. J., Burnette J. L., & Scissors L. E. (2007). Vengefully ever after: Destiny beliefs, state attachment anxiety, and forgiveness. *Journal of Personality and Social Psychology, 92*, 871–886.

Fisher, H. E., Brown, L. L., Aron, A., Strong, G., & Mashek, D. (2009). Reward, addiction, and emotion regulation systems associated with rejection in love. *Journal of Neurophysiology, 104*, 51–60.

Friedman, H. S. & Martin, L. R. (2011). *The Longevity Project: Surprising Discoveries for Health and Long Life from the Landmark Eight-Decade Study*. New York, NY: Hudson Street Press.

Gottlieb, B. H. (1985). Social support and community mental health. In S. Cohen & S. Syme (Eds.), *Social Support and Health* (pp. 303–326). Orlando, FL: Academic Press.

Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review, 25*, 169–186.

Ingram, P., & Morris, M. W. (2007). Do people mix at mixers? Structure, homophily, and the "life of the party." *Administrative Science Quarterly, 52*, 558–585.

Kaufman, B. E., & Hotchkiss, J. L. 2003. *The economics of labor markets* (6th ed.). Mason, OH: Thomson South-Western.

Levine, D. (2000). Virtual attraction: What rocks your boat. *Cyberpsychology & Behavior, 3(4)*, 565–573. doi:10.1089/109493100420179

Madden, M. & Lenhart, A. (2006). Americans who are seeking romance use the Internet to help them in their search, but there is still widespread public concern about safety of online dating. Pew/Internet and American Life Project. Retrieved from http://www.pewinternet.-org/Reports/2006/OnlineDating.aspx

Markus, H., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*, 224–253.

McCann Hamilton, V. (2007) *Human relations: The art and science of building effective relationships*. Upper Saddle River, NJ: Pearson Prentice Hall.

McKenna, K. A. (2008) MySpace or your place: Relationship initiation and development in the wired and wireless world. In S. Sprecher, A. Wenzel, & J. Harvey (Eds.), *Handbook of relationship initiation* (pp. 235–247). New York, NY: Psychology Press.

McKenna, K. Y. A., Green, A. S., & Gleason, M. E. J. (2002). Relationship formation on the Internet: What's the big attraction? *Journal of Social Issues, 58*, 9–31.

Mckillip, J., & Redel, S. L. (1983). External validity of matching on physical attractiveness for same- and opposite-sex couples. *Journal of Applied Social Psychology, 13*, 328–337.

Moreland, R. L., & Beach, S. R. (1992). Exposure effects in the classroom: The development of affinity among students. *Journal of Experimental Social Psychology, 28*, 255–276.

Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, R., & Ryan, R. (2000). Daily well being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin, 26*, 419–435.

Riordan, C. M., & Griffeth, R. W. (1995). The opportunity for friendship in the workplace: An underexplored construct. *Journal of Business and Psychology, 10*, 141–154.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57(6)*, 1069–1081.

Sternberg, R. J. (2007). Triangulating Love. In Oord, T. J. *The Altruism Reader: Selections from Writings on Love, Religion, and Science* (pp 331-347). West Conshohocken, PA: Templeton Foundation.

Sternberg, R. J. (2004). A Triangular Theory of Love. In Reis, H. T.; Rusbult, C. E. *Close Relationships*

(pp: 528-276). New York, NY: Psychology Press.

Stroebe, W., & Stroebe, M. (1996). The social psychology of social support. In *Social psychology: Handbook of basic principles* (pp. 597–621). New York, NY: Guilford Press.

Taylor, L. S., Fiore, A. T., Mendelsohn, G. A., & Cheshire, C. (2011). "Out of my league": A real-world test of the matching hypothesis. *Personality and Social Psychology Bulletin, 37*, 942–955.

Triandis, H. C. (1995). *Individualism and collectivism*. Boulder, CO: Westview.

Triangular Theory of Love. (n.d.). In Wikipedia. Retrieved April 3, 2013, from http://en.wikipedia.org/wiki/Triangular_theory_of_love

Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist, 35(2)*, 151–175.

Zajonc, R. B. (1968) Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology, 9*, 1–27.

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