IB Extended Essay:

Psychology (3962 words)

To what extent does Biology determine gender differences in attraction between heterosexuals?
Abstract

The goal of this Extended Essay is to answer the research question, “To what extent does Biology determine gender differences in attraction between heterosexuals?” The investigation begins by providing definitions for key terms and phrases, such as “attraction,” and gives an overview of the roles of biological, evolutionary and sociocultural psychologists. The introduction is followed by the first section of the main body of the essay, which focuses on examining evolutionary and physiological research and evaluating the strengths and limitations of the research that has been collected. Evolutionary psychologists such as Cashdan (1993) and Buss (1989), as well as biological psychologists such as Aron et al. (2005) and Fisher et al. (2005) have been cited. The following section focuses on evaluating the strengths and limitations of evolutionary and physiological research on attraction, and examining in greater depth, the flaws in the methodology of evolutionary studies, and how these emphasize that there are more valid similarities between men and women in attraction, then there are differences. This was also observed in the findings of physiological studies that demonstrated that both men and women have neural reward mechanisms that are triggered upon viewing a photograph of someone they are attracted to. Overall, the evidence demonstrated that biological explanations, due to the use of brain-scanning technologies and controlled laboratory conditions, hold the most valid answers to the body and brain’s physiological responses to attraction. The conclusion drawn was that (a) there are more valid similarities across both genders in attraction, as evident from physiological studies, and (b) sociocultural factors demonstrate that differences in attraction-based behaviors are not innate, but due to cultural or other social factors.
1. Introduction

It is the “natural feeling of being drawn to other individuals and desiring their company” (“What is Attraction?” 2016). This definition of “attraction” highlights that there are physical characteristics that draw heterosexuals to people of the opposite sex upon viewing their body or face. Braxton-Davis (2010) argues that in order for humans to form a romantic partnership, “there must be some type of attraction, either physical or on a personality level” (6). She agrees that initial attraction to a potential partner is triggered by one's physical attractiveness.

There is a general stereotype, particularly in the Western world, that men and women are attracted to these distinct things: men to women who are good looking, with large breasts, and who are able to reinforce their masculinity, and women to rich and strong men who make them feel special and wanted. These differences in attraction are what society generally expects of men and women who are seeking partners. Gender is arguably a way for men and women to distance themselves from each other and maintain their own identity as a way of belonging. However, to what extent can we attribute the differences found in attraction between heterosexual men and women, to biology? This essay will be investigating the extent that biology is useful in explaining attraction differences in heterosexual men and women. The implications of this are that it could help eliminate misunderstandings between men and women in relationships and perhaps inform dating services and match those who are the most likely to find each other attractive. Researchers have attempted to explain heterosexual attraction, in the past. However, research is often flawed or lacks validity, therefore, it must be evaluated to make an unbiased conclusion.
Biological psychologists believe that behavior is innate and due to a person’s physiology. The use of brain-imaging technologies strengthens the validity and accuracy of findings, yet a limitation of biological research, is that it has a lot of face validity: people could be more willing to accept scientific explanations for behavior, rather than theories developed by sociocultural or evolutionary psychologists. Physiology is useful in explaining attraction in terms of the neural activations of reward systems it triggers in the brain (Francesco and Cervone 2014).

Evolutionary psychologists propose that human behavior can be based off Charles Darwin’s (Darwin 1859) theories of natural selection: male and female behavior has evolved to enable humans to adapt to and survive environmental pressures. Additionally, the behavior of men and women in relationships could be due to an innate need to satisfy reproductive demands and pass on genetic information (Miller 2012). Evolutionary explanations, though convincing, can be scrutinized due to their lack of temporal validity: it is impossible to go back in time to test such theories.

The role of social psychologists is to partake in investigations that allow for a better understanding of the way that society and the environment can impact the behaviors of others. Bandura’s (1971) Social Learning Theory, for example, explains how a person’s behavior might influence an observer to replicate the same behavior. His theory suggests that the behavior of heterosexuals, who find a suitable partner, may be learned through external forces. Although influential to understanding behavior, sociocultural research might encourage people to consider the theories to be the only explanations for behavior.

Considering the abovementioned strengths and limitations of psychological research, this essay will be answering the question: “To what extent does Biology
determine gender differences in attraction between heterosexuals?” Within the essay, the term, “biology” will refer to physiological research and evolutionary theories. Biology is emphasized, as, given the advancement of brain-imaging technologies, people are inclined to believe in science when making their opinions, and therefore, it is important to evaluate whether biology is really the best way to identify behavioral differences across the genders.

2. Biological Explanations

2.1. Evolutionary Theories

Evolutionary psychologists like Clark and Hatfield (1989), suggest that heterosexual men have developed a desire for a variety of sexual partners whereas women have not. Furthermore, men are genetically programmed to reproduce with, and “actively pursue women” (40) in order to successfully transfer his genes. This reasoning might suggest that men are more likely have to become attracted to numerous women, and are likely to accept sexual invitations more readily (Schmitt 2003). However, there might be sociocultural explanations for the behavior that men exhibit and why psychologists might think it is due to natural selection. Consequently, it is difficult to test evolutionary theories and ideas because it is impossible to go back in time and observe the development of human behavior from the beginning of the human race, until now.

Men are commonly depicted as the more sexually promiscuous and lustful of the genders, and this, perhaps, is due to an innate need to pass on genes to their offspring. Oikkonen (2010) called this phenomenon the neo-Darwinian reproductive imperative. Similarly, women are also thought to have evolved an innate need to find a suitable mate to satisfy reproductive needs with, although, women, seemingly,
have smaller libidos to men. However, this could be due to sociocultural factors such as women wanting to adhere to their gender’s stereotypes. Fisher et al. (2002), for example, states that humans have evolved a sex drive to encourage them “to seek sexual union with any appropriate member of the species” (414). Furthermore, Buss and Schmitt (1993) comment on how women are evolutionarily predisposed to be attracted to men who can offer them financial other resources. It can be argued, however, that the stereotype of women has convinced them that they need a man to provide them with such resources. Alternatively, when stating what they are attracted to, women (and men) might attempt to conform to their gender role and provide artificial results.

Cross-culturally, there are a lot of important correlations made about attraction and inter-gender romance. In fact, Buss (1989) conducted a cross-cultural study investigating evolutionary, “Sex Differences in Human Mate Preferences” across thirty-seven different cultures, evaluating how, “each sex valued earning capacity, ambition-industriousness, youth, physical attractiveness, and chastity” (1). Females liked a man’s ability to attain useful resources, and men preferred women whose features suggested a higher reproductive capacity. Amongst the cultural differences, South Americans, Asians, Africans and North Americans tended to be attracted to a person with a high earning capacity, more times than people from the Western European samples. Furthermore in all but the Spanish sample, females were generally more attracted to males with “good financial prospect” more than males were attracted to women with the same. Rusbult's (1979) Investment Model states that the greater an organism's investment, whether extrinsic or intrinsic, the greater the value of the relationship and the harder it is to stop commitment to the relationship. Consequently, Pillsworth and Haselton (2006) note that women are
believed to seek “long-term relationships with investing partners” (59) and find the
best genes to mate with hers, as ancestral females found it difficult to secure
“sufficient material resources for reproduction” (59) and relied on the male to bring
back food and security when they came back from hunting.

Interestingly, Cashdan (1993) states that in order for a woman to initially
attract a mate, she must emphasize her resourcefulness and skillfulness. However,
to encourage him to invest in her offspring, she must portray her naivety and need
for his investment. Contrastingly, men must show their willingness to invest in order
to attract a potential mate. Once again, these findings, based on self-report data,
may be tainted with social biases and demand characteristics, and are unreliable in
making completely valid conclusions. Cashdan’s (1993) study demonstrates that
researcher bias may lead to over-extrapolation of minor or invalid data; reflexivity:
the researcher began the experiment with the aim of finding evidence that matched
with her assumption and therefore, analysis of the data may have been
contaminated with personal biases.

Buss (1989) discovered a “sex difference reversal” (7) amongst the Zulu
people, and researchers suggested that this could be due to the “local division of
labor” (7) of its people. This means that culture and geographical location affect the
way that men and women behave and what they are attracted to in a mate. Logically,
however, men and women are the same species, and have the same brain
physiology, so they must be attracted to each other in the same ways and should not
have many differences between each other. Therefore, the sociocultural environment
exerts social pressures on people to behave in certain ways, and this increases the
likelihood of different behaviors due to social desirability biases.
Interestingly, Buss (1988) hypothesized that, “Women more than men will show greater intrasexual competition for displaying cues that correlate with reproductive value or fertility” (617) and will attempt to enhance their physical appearance, youth and health. Results of the questionnaire provided strong evidence for this particular hypothesis. This finding, however, may have been influenced by society, as photo-shopped models on the covers of magazines encourage women to alter their appearance and strive to look as beautiful as their role models. Society has encouraged women that beauty, symmetry, and youth is desirable and should be coveted, and numerous research has found that physically attractive people are stereotyped and perceived as more social and successful than less physically attractive people (Dion et al. 1972). Therefore, it might not be an evolutionary force that drives women to compete with one another and alter themselves; it may be the influence of external factors that lead to this behavior.

Physical attractiveness arguably serves an evolutionary purpose, and there are certain characteristics that might have evolved to initiate the mating process between two appropriate partners. Symmetry, a physical facial trait, is desired due to its connotations with survival and endurance from environmental pressures, and it also signals strong genes. Furthermore, a male’s sperm number and speed may be reflected in the symmetry of a male’s body, possibly explaining why muscular and larger men are often idealized by society. A larger male figure may also be coveted due to its connotations with strength and ability to protect. However, although Western cultures, for instance, popularize the muscular male figure, other cultures might recognize males for their softer features and high intelligence levels. The cultural variations that exist reiterate that there must be external factors that influence behaviors of attraction, as men and women are the same species and
should behave the same way, innately. Once again, there seem to be a lot more logical and valid similarities between men and women then there seem to be differences.

Furthermore, Wade (2009) propositions that men with higher levels of testosterone appear naturally larger and more muscular, and this correlates with greater strength, wealth and dominance, and causes women to believe that these men are the best mates with greater genetic quality. Contrastingly, women’s attractiveness is evolutionarily rooted in their body’s ability to prove they can successfully bear offspring, be a good mother, be feminine and is capable of withstanding illness and disease. Small hips and waists, in particular, are thought to agree with these criteria.

Despite the supposed gender differences, Buss (1988) claims that men and women are attracted to a majority of the same things in one another, such as humor, sympathy and kindness, among other traits. The minor differences between men and women might have been over-emphasized to give humans a sense of belonging and identity. Overall, the cultural variations and lack of temporal validity demonstrate that evolutionary theorists who emphasize evolutionary explanations for attraction may be ignoring that there are in fact, more valid similarities between the sexes in heterosexual attraction, then there are differences.

2.2 Physiological Research

Evolutionary theories have demonstrated that both men and women are evolutionarily predisposed to be attracted to a partner in order to maximize reproductive efforts. Within the context of this essay, it is argued that attraction leads to love, as researchers like Esch and Stefano (2005) have concluded that, “the most
desired sexual partner is often – and simultaneously – the object of strong feelings of attachment” (177). Investigating the neurobiology of love has become a recent area of interest for psychologists and there have been important findings that suggest that both men and women have reward systems in their brain that demonstrate their attraction to their mate. Furthermore, the researcher is assuming that those who are in love are ultimately attracted to one another.

Fisher et al. (2005) used fMRIs to scan the brains of 10 female and 7 male you adults who were passionately in love to test the idea that humans have an innate attraction system that corresponds to reward pathways in the brain. It was stated that “In humans the neural mechanism associated with courtship attraction is developed” (59) and this produces behavior correspondent to what is now called, “passionate love, obsessive love, “being in love”, or romantic love” (59). The study involved methodological triangulation, including an oral interview and questionnaire, followed by the fMRI scans. This allowed conclusive evidence to be collected to ensure validity of the findings from the scans. Furthermore, the method of the scans involved a “countback distraction” (59) task which was alternated with participants viewing their beloved’s photograph, and an acquaintance’s photograph. The countback reduced the feelings of love that the participant felt for their beloved before viewing their acquaintance’s photograph (Fisher et al. 2005). As expected, the researchers discovered neural brain activations within dopamine-rich reward areas of the brain. Similarly, for both genders, the right ventral tegmental area (VTA) among other areas were stimulated, and it is known that the VTA plays a role in neural reward systems (Schultz 2000).

Aron et al. (2005) investigated the feeling of being in love through utilizing the results of fMRI scans of the brains of 17 participants. Similarly to Fisher et al. (2005)
study, scans revealed that after participants who were in passionately in love viewed photos of their partner, reward systems such as the ventral tegmental area (VTA) and ventral nucleus accumbens were activated. From this, it is implied that focusing on a person one is attracted to, triggers physiological responses linked to neural dopamine and oxytocin-rich reward and pleasure centers. It is known that dopamine plays an important role in the central nervous system, sexual behavior and reward (Baskerville, and Douglas 2010), whilst oxytocin is a hormone involved in socio-sexual behavior and the “activation of mesolimbic dopamine reward pathways” (92) in men and women. Results demonstrated the effects that being visually stimulated by a partner can have on a person’s physiology, and explains how initial attraction may lead to a successful relationship. No distinct differences were found in the brains of men and women, arguably because they are the same species, and their brain physiologies are the same.

Acevado et al. (2012) used fMRI scanning technology to investigate how levels of marital satisfaction correlated with activations in particular brain areas. Neural activity was monitored for each of the seventeen middle-aged male and female heterosexuals upon viewing the faces of their spouses compared to an acquaintances or a friend. Results showed that there was a positive correlation between higher marital satisfaction and neural activation in areas of the brain such as the VTA, consistent for both genders. Statistical analysis concluded that neural activations were evident within “cortical and subcortical brain regions supporting reward, motivation, and reward evaluation behaviors” (25). The comparison against the faces of friends and acquaintances, ensured the researchers that social bonding effects were controlled, which enhances validity of results. Lastly, the study demonstrated that men and women have the same physiologies and therefore,
should find similar things attractive and feel the same way when attracted to one another. Similarly, Fisher et al.’s (2002) fMRI study on people who had recently fallen in love, it was recognized that the viewing of a lover’s photograph stimulated men and women to experience strong feelings of love and attraction, and activate their neural reward mechanisms.

Additionally, in their neurobiological report, Esch and Stefano (2005) propose that genuine opposite-sex love begins by creating an emotional bond with a partner. Furthermore, experiencing sensory stimulation with the person that one likes, will eventually lead to love. This agrees with why viewing the photograph of a partner activates reward systems in the brain: being with the person one loves is likened to winning something one covets. It has already been mentioned that heterosexual men and women have more similarities than differences, and these are explained by physiology. Through their neurobiological review, Esch and Stefano (2005) speak of particular steroid hormones such as, “estrogen, progesterone, androgens, and glucocorticoids” (183). These hormones enhance binding receptors for oxytocin, which, consequently, affect male and female socio-sexual behavior. The Autonomic Nervous System is connected to human emotions (Esch and Stefano, 2005), and therefore, it contains oxytocin and vasopressin receptors that enhance human love for one another. Once again, physiology demonstrates that men and women are more alike than they are different, given the similarity of their physiologies. Furthermore, Esch and Stefano (2005) identify that men in love have lower testosterone production, whilst women produce more testosterone. From this, it may be argued that attraction and love abolishes the biological differences between men and women.
3. Evaluation of research

The abovementioned physiological studies reiterate how biology, specifically, physiology, demonstrate the correlation between neural reward systems, attraction and love. The validity of physiological studies compared to evolutionary studies reiterate that there are more valid similarities than there are valid differences, as evolutionary research lacks temporal validity and is often tainted with social biases and cultural variations (Buss 1989). Aside from this, most of the researchers took an etic approach to their research, which might have led to researcher bias affecting the evaluation of data collected.

The sociocultural environment undoubtedly plays an important role in male and female behavior. Whether consciously or unconsciously, humans have created their ingroups and their outgroups (Tajfel 1982) and these inter-group interactions impact how people see themselves, and reassures their self-identity. It may be suggested that men and women find and extrapolate differences between one another to secure and construct their identity. Gender might simple be a social construct developed by humans for this exact reason. Lorber (1994) states that gender is a social idea that assigns men and women their rights and roles within a heterosexual relationship. This emphasizes that gender, apart from being identifiable from male and female secondary characteristics, is not biological, but a societal creation.

An example of a societal influence is Clark and Hatfield’s (1989) study that found that men accepted sexual offers from averagely attractive opposite-sex individuals more often than women did. It is a popular belief that men focus more on physical intimacy with their partners than women do, and this, arguably, plays a part in what defines the male gender. The self-report data might have been tainted with social desirability bias, and women might have forgone the request for sleeping with the
requestor, as this might have made them seem unfeminine. It does not suggest that men are more attracted to women than women are, as evolution proposes that both men and women have an identical urge to fulfill a reproductive purpose. Similarly, a study conducted by Prause et al. (2008), consisted of sexual stimuli provided to 75 participants to evoke a response. Results showed that the sexual images were rated less attractive by women than the nonsexual images were, as opposed to men. This, supposedly, proves that men are more sexually lustful than women are. However, once again, societal influences were not controlled and social desirability bias might have been present. Additionally, studies may often be subject to researcher bias, which reinforces existing gender stereotypes to adhere to an aim or hypothesis.

It has been discussed that culture plays a part in attraction and demonstrates that the differences cross-culturally emphasize the lack of validity in theories that suggest men and women are different (Buss 1989). Seeing as humans are the same species, they must have identical attraction systems, however, research confirmed that there are cultural variations that affect this mammalian system. Dion and Dion (1996) identify that there are essential differences between individualist and collectivist cultures. Seeing as “love centers on pursuing personal fulfillment and following one’s personal wishes, even if they oppose those of one’s family and kin” (8), the idea of this form of self-centered love is generally not encouraged within collectivist societies. Dion and Dion’s (1996) research has suggested that even without attraction or love, people from collectivist societies are more likely to marry someone if they know they fulfill all the requirements of a suitable partner, unlike people from individualist societies who emphasize romance and passionate love. Reflexivity of the researcher’s must be considered as they began their research with the intention of finding differences between collectivist and individualist societies and
the questions they asked participants might have led their answers in the direction that the researchers wanted them to go. Similarly, this essay was written from a Western perspective and attempts to produce an appropriate answer to the research question might have been subject to cultural bias and objectivity that assumes attraction and love are interchangeable.

Overall, the results of the abovementioned studies, once again, reiterate that the sociocultural environment affects attraction between heterosexual men and women, and reiterates the importance of physiological research that give scientific evidence that proves there are more similarities between men and women then differences.

4. Conclusion

This research intended to find out whether biology was a sufficient tool to determine gender differences in attraction between heterosexuals. However, throughout the course of the study, it was found that there were more significant similarities between men and women rather than differences. Biology, specifically, physiology, provided an insightful glimpse into how attraction in the form of photographic stimulation, may trigger neural activations in the brains of heterosexual people (Fisher et al. 2005; Aron et al. 2005; Acevado et al. 2012; Fisher et al. 2002; Esch and Stefano, 2005). The use of brain-imaging technologies ensured validity of the findings and recognized that human physiology has reward systems that are triggered upon viewing an “attractive” person, assumingly, a person one is in love with. It was evaluated that both men and women have the same neural physiology, and therefore should behave in similar ways and be attracted to the same things from a partner. Although biological research does not consider the upbringing and individuality of each person, it underpins the innate way that men and women are
born to behave. Evolutionary theorists such as Clark and Hatfield (1989) suggested that men are genetically programmed to be promiscuous, compared to women who selectively chose a particular mate to bear children with. Evolutionary theories, however, lack temporal and experimental validity, so effective and controlled experiments may not be conducted, leading to the discovery of gender differences in attraction. Seeing as men and women are both the same species, it is logical that they should both display the same behavior and be attracted to one another in similar ways. Evolutionary research was frequently reliant on self-report data that is often plagued by gender-biases from the participants who wish to adhere to society’s stereotypes of gender. Furthermore, as evident from Buss’ (1989) study, there were cultural variations between the results provided by participants from different cultures, and shows that culture influences the way people think and what they find attractive. Evolutionary research reinforced the lack of valid differences in attraction between the heterosexuals. Therefore, evolutionary theories are not the best way in reaffirming the accuracy and validity of the explanations provided for why men and women are different. It can be said that the small and valid gender differences that do exist, are due to societal influences which may have caused participants to provide artificial results that do not reflect genuine behavior in the real world. It may, therefore, be stated that humans are born the same, but society has constructed the differences between the genders (Brickell 2006) in order to reinforce humans’ identities and give them purpose.

It may now be stated with confidence, that the answer to the research question is: There are more gender similarities within heterosexual attraction than gender differences, and these similarities are explained by biology, specifically, physiology. The few gender differences that do exist are arguably caused by the
sociocultural environment. To be investigated further, are the comparisons between heterosexual people and homosexual people to better understand why certain individuals prefer the company of a same-sex partner compared to an opposite-sex partner.
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