

WHY DO WE ALL WANT TO BE YOUNG AND BEAUTIFUL (AND WOMEN ESPECIALLY)? FROM THE EVOLUTIONARY PSYCHOLOGICAL PERSPECTIVE

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SUMMARY – Within social sciences, the standards of beauty were for a long time considered to be culturally determined, meaning that different people with different life experiences in different cultures acquire different standards of beauty, as captured in the famous sentence “Beauty is in the eye of the beholder”. However, two groups of findings have challenged this common assumption: first, people in different cultures generally agree on which faces are attractive; second, preferences emerge early in life, before cultural standards of beauty are likely to be assimilated. Evolutionary psychology explores the psychological adaptations (evolved psychological mechanisms constructed by natural selection) that constitute human nature. From the perspective of evolutionary psychology, beauty is not a cultural construct and appreciating beauty is not learned but is rather a biological adaptation, a part of universal human nature: the preferences for some physical characteristics reflect adaptations for mate choice because they signal aspects of mate quality. Theory of natural selection explains the adaptations, which help organisms in their tasks of survival. However, an organism can be adapted and survive for many years without passing its qualities to future generations – to pass them it must reproduce. The theory of sexual selection explains the adaptations that have arisen as a consequence of successful mating. In order to gain reproductive success, women and men adopt certain mate selection strategies – integrated sets of adaptations, not necessarily conscious, which organize and guide the individual’s reproductive efforts.

Key words: *beauty, evolutionary psychology, mate selection strategies*

Throughout the history, we can find evidence that beauty was always important: the art of all periods celebrates ideal beauty; cosmetic industry is not a modern discovery; the oldest evidence of the use of cosmetic products was found in Egypt dating from 4000 years B.C. Egyptians had almost all cosmetic products we have today; there is a sentence devoted to beautifying even in Old Testament; the word cosmetics has its origin in the Greek word *kosmetikos*, which means ‘skilled in beautifying’.

Beautiful faces cause the sense of pleasure by activating dopaminergic regions that are strongly linked

to central reward systems^{1,2}. Attractive people are considered to be more intelligent than less attractive people^{3,4}. Attractive children and adults are judged more positively than unattractive children and adults, and they are attributed the whole range of positive qualities⁵⁻⁷; generally it is believed that “what is beautiful is good”⁸.

In social sciences, it was long thought that the standards of beauty are culturally determined, which would mean that different people with different life experiences, in different cultures will have different beauty standards, which is phrased in the famous maxim “Beauty is in the eye of the beholder”.

However, two sets of findings question this belief. First, it has been shown that standards of beauty are set early in life. Samuels and Ewy⁹, and Langlois *et al.*¹⁰ studied the reactions to female faces in 3- and 8-month-old babies. Both groups of babies looked

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longer at more attractive faces than at less attractive ones. In another study, children played significantly longer with dolls with beautiful face than with dolls with unattractive face¹¹. Since children could not have learned and internalized the standards of beauty this early in life, these findings suggest that the basic standards of beauty could be innate and not learned or acquired through socialization. The other group of findings are the results of the studies that show the standards of beauty to be culturally universal; people from a broad range of cultures agree on who is attractive and who is not. Cunningham *et al.*¹² showed that the mean correlation between cultural groups in ratings of attractiveness of Asian, Hispanic, black and white photographed women was 0.93, and it is important to mention that the exposure to Western media did not influence attractiveness ratings. Similar results were obtained when comparing standards of beauty in different groups around the world¹³⁻¹⁶.

These findings support the postulate of evolutionary psychology that beauty is not a cultural construct and that the concept of beauty is not acquired but represents biological adaptation, a part of universal human nature.

Evolutionary psychology attempts to explain psychological adaptations that define human nature, with the adaptations defined as evolved psychological mechanisms developed through natural selection during the time of evolutionary adaptation, mostly during Pleistocene in African savannas¹⁷. The evolved structure of human mind is therefore adapted to the way of life of hunter-gatherer from Pleistocene; we have a mind from the Stone Age. Therefore, not all the adaptations are useful and adjusted to the modern living conditions. Famous evolutionary psychologist Kanazawa¹⁸ calls it the Savanna principle: human brain has difficulties to understand and adapt in the situations that were not present in the environment of our ancestors. For example, in the time of our ancestors when food availability was unpredictable, it was adaptive to eat as much nutritious food as available, to store as many calories in the form of fat as possible, and to use those supplies in the most efficient way. Individuals who had these traits were most likely to survive. Today, we live in a considerably different environment where food is always available. Even though we cognitively know that the consumption of sweet and fatty

foods is unhealthy, our inherited mechanisms tell us to eat precisely that kind of food, so what used to be useful adaptation is now a cause of excessive weight and a risk for different illnesses¹⁹.

Evolutionary psychology sees the perception of beauty as a part of universal human nature: the preference for certain traits in physical appearance reflects adaptations developed for finding good mates since these reflect certain mating qualities^{17,19}. The theory of natural selection²¹ explains the origin of adaptations that help organisms survive. However, the organism can be well adjusted and live long without transferring its qualities onto the next generation. In order to transfer its qualities, it must reproduce. The theory of sexual selection²² describes the adaptations that have evolved as the result of successful mating. The term 'reproductive success' holds an important place in Darwin's theory: the characteristics of the organisms that reproduce more will be relatively more frequently transferred onto the next generations. Therefore, individuals possess certain qualities because they make them more attractive to the opposite sex, thereby giving them an advantage in the mate selection. For example, in many species members of one sex, usually male, have certain qualities not in favor of survival, sometimes even in opposition to it. The best example for this is peacock's tail; it is metabolically costly, cumbersome, and essentially a 'predator magnet'. It is proven to shorten life expectancy and to increase the risk of death by predators²³. However, lush tail results in better reproductive success: female peacocks prefer to mate with a peacock whose tail has rich and shiny feathers since it signalizes genetic quality and resistance to parasites.

In order to ensure reproductive success, organisms have developed mate selection strategies, which increase that success. Mate selection strategies are integrated adaptation sets, not necessarily on the conscious level, that organize and guide the individual's reproductive intent. Both men and women adopt certain selection strategies, which are somewhat gender specific since men and women had different adaptation challenges in their evolutionary past. These differences are described by Trivers²⁴ in his theory of parental investment and sexual selection. Female minimum investment in offspring is considerably higher than male: women have shorter reproductive

time, lower number of egg cells (about 400 during lifetime, compared with 12 million sperm cells in one hour), insemination and pregnancy take place in woman's body, followed by the lactation period. On the other hand, the only necessary male investment is sexual intercourse. Women represent a valuable reproductive resource and every woman risked a great deal with each sexual intercourse during our evolutionary history. If she got pregnant with an unreliable partner, the probability of survival of her offspring was significantly lower, as well as her reproductive success. Therefore, the first Trivers' hypothesis states that the sex making the greatest investment (usually female) will be more discriminating in mating. On the other hand, the sex that invests less in offspring will compete for higher investing sex in order to gain reproductive success.

Male Mating Preferences

What men need in order to gain reproductive success is sexual intercourse with a fertile female partner. The main adaptive challenge for a man was to determine woman's fertility and reproductive value, because while men's reproductive value only slightly decreases with age, women have a relatively short reproductive time period. Therefore, men regardless of their own age always prefer young women because they have higher reproductive value. In their lifetime, women always prefer three years older male partner, while men as they get older prefer younger partners^{25,26}. Even though it was impossible to correctly determine woman's age in our evolutionary past, there were several signs of woman's reproductive value and sexual selection preferred by men who could read those signs correctly. One of the best documented differences between men and women in all cultures is that men rate physical appearance as much more important than women. This finding was confirmed in a research that included 37 different cultures on all continents, in every culture, with no exceptions²⁷. The most important are those characteristics that signalize health, youth and fertility.

Skin

The condition of the skin can be a reliable sign of woman's age, health and fertility, which makes flawless skin one of the universally preferred woman's

characteristics²⁸⁻³⁰. Preference for clear skin is a reflection of the idea that damaged skin is a result of parasites and illness, while clear skin indicates health and potential for healthy offspring. The condition of the skin also points to the level of the sex hormones estrogen and testosterone, e.g., women with higher levels of testosterone have more acne and facial hair³¹⁻³³, with the same ratio being an indicator of fertility. Multicultural studies suggest that men prefer women with lighter skin (lighter than the usual skin tone in that area), which can be linked to the fact that women have lighter skin while estrogen levels are higher and woman is more fertile and darker during pregnancy or while taking birth control pills^{34,35}.

Hair

Men generally prefer women with long hair, and most young women have long hair³⁶. The length and the quality of hair can also be a sign of health and youth. Healthy people have shiny and exuberant hair, while in ill people it loses the shine and becomes fragile: in disease, the body needs all nutritive ingredients to fight against the disease and since hair is not necessary for survival the body takes those ingredients out of it. Therefore, poor health is visible from the condition of the hair³⁷. Since hair growth is relatively slow, 15 cm in one year, shoulder length indicates woman's health during the last 4 years. Cosmetic companies use the importance of hair very wisely promising that it is their product (shampoo, conditioner, etc.) that will make your hair look shiny and healthy. Research shows that hair length is in correlation with age and health. With time, hair becomes thinner and more fragile, so many women wear short hair to minimize the importance of that signal. The color of the hair is also an indicator of age; women are very likely to dye their hair in order to cover grey hair, which is a sign of aging. Women are more likely to do so than men, in women grey hair is considered a sign of old age, whereas in men it is often found to be charming, elegant or sophisticated³⁹. When talking about dying, even more interesting is the phenomenon of dying the hair blonde. There is evidence that women tried to lighten their hair in ancient Rome, as well as during the renaissance, long before the discovery of peroxide in 1812¹⁸. That is just women's response to the fact that men prefer women with blonde hair,

more than any other hair color. In the beginning, it was thought that this can be explained by the fact that men prefer women with lighter skin, and women with blonde hair have light skin. However, the fairest skin is seen in women with red hair, and both men and women usually like red hair the least. The thing that differs blond hair from other types of hair color is the fact that blond hair darkens with age: girls with blond hair usually grow up to be women with brown hair. Preference for the blonde partner is an unconscious desire for a young partner. As explained by Riley⁴⁰, it is not unusual that blonde hair is common in northern Europe where winters are very cold. In Africa, women were naked throughout the year and it was possible to see other signs of youth, while in northern Europe women had to cover their bodies and other signs signaling youth had to be developed.

Neoteny

One of the key characteristics of an attractive female face are the proportions that resemble child's face: big eyes, high cheekbones, small nose, small chin, full lips, and small eye-chin distance⁴¹, all of which are the result of a high estrogen-testosterone ratio. In their study, Johnson and Franklin⁴² gave participants an opportunity to create an ideal woman's face in a specially designed computer program, and the face they created had proportions of a 14-year-old girl.

Allocation of body fat

Allocation of body fat is a signal of reproductive competence: the difference in body fat between men and women is minimal in childhood and old age, and maximal in reproductive age. These differences can be assessed by measuring waist to hip ratio (WHR), which is the ratio of the circumference of the waist to that of the hips. After puberty, women's WHR becomes significantly higher than men's due to higher estrogen levels and more fat in the hips, breasts and buttocks. The average WHR for women is 0.67-0.8, and for men 0.85-0.95. Studies confirmed WHR to be correlated with fertility and health^{17,43}.

In his early studies, Singh^{44,45} showed participants 12 randomly allocated drawings of woman's body. The drawings differed in 4 levels of WHR and 3 levels of body weight, and results showed that in all three

levels of body weight participants perceived the drawing with the lowest WHR as the youngest, healthier, reproductively more competent and more attractive than higher WHR, and 0.7 WHR as the most attractive. This finding is consistently replicated in different cultures¹⁷. Preference for the low WHR explains the popularity of the corset during the history and today's popularity of short T-shirts that show the waist¹⁸.

For women, beauty is often more emphasized than any other characteristic. It is therefore logical to expect that women (especially those in their reproductive age) will pay more attention to their looks than men, and many studies prove so. Women suffering from acne are more bothered with their skin than men with the same problem^{46,47}. Women spend significantly more money on cosmetic products and treatments and significantly more time to improve their looks⁴⁶. According to statistical data of the American Society of Plastic Surgeons³⁹, 22 of 24 analyzed procedures were more often done on women, while the other two were specific for men: breast reduction and baldness treatment. Depending on the year, 80%-89% of all treatments were done on women with the most common treatments being the ones that emphasize the signals of youth: mastopexy (breast lift), buttock lift, liposuction and face lift.

Another myth about beauty is an opinion often discussed and written about that media impose arbitrary criteria of female beauty. It is often said that photos of models and actresses make girls and women want to look like them. In his interesting analyses "Barbie – manufactured by Mattel, designed by evolution", evolutionary psychologist Kanazawa¹⁸ claims it to be as absurd as stating that people are hungry because of the photos of food in the media. Food marketing is a consequence of our tendency to be hungry, not the cause of it. Marketing exploits our needs, it does not create them. Female beauty is similar; women want to look like blonde sex bombs not because of the photos in the ads but because men want partners that look like them. The image of ideal female beauty was carefully constructed during millions of years of evolution through sexual selection. However, media are guilty for something else. Psychological mechanisms of men have evolved to prefer beautiful women, and our ancestors built an image of a beautiful woman on women in their surroundings. Today, media present

unrealistically beautiful women: what we see are the most beautiful women, in the most beautiful poses, wearing the best make-up on the most beautiful photos carefully edited in Photoshop. The negative consequence of such images is the activation of women's competitive mechanisms and their participation in the contest with the media presenting an ideal of beauty, which does not exist in real life.

Yet, men get cheated in the process. How is it possible? Men want women who look like blond sex bombs and women want to look like them, where is the irony? Today, many signals of youth and fertility are incorrect. Thanks to aesthetic surgery, hair dye, tinted eye lenses, etc., every woman today can obtain some of the characteristics of ideal beauty. And men fall for it. As the Savanna principle says, men today are just incompetent to understand what was not there in old times: neither the silicone breasts nor the hair dye. Men can cognitively understand that blonde women with large breasts are not 15 years old but they will still find them attractive thanks to the mechanisms in their brain fooled by the perfect inventions of today.

Female Mating Preferences

Because of the great investment in offspring, the most important characteristic for a woman when searching for a partner was the ability of the partner to provide the resources for her and her offspring. To women, physical appearance need not have been so important for two reasons: men are fertile most of their life, their fertility only slightly decreases with age and men's fertility cannot be assessed only according to appearance; and women's reproductive success is not limited by finding a fertile man, as there will always be enough fertile men who will compete for her.

However, there are two aspects of men's physical appearance important to women: signals of health and signals of ability to protect her and her offspring. The choice of a partner of poor health would mean series of risks for women of our past: he could become incompetent to earn resources, or die, he could transfer the illness onto her or her offspring, therefore threatening their survival and reproduction; and if the illness is even partially inherited he could pass the 'bad genes' onto their offspring. Signals of good health are therefore important to women when choosing a partner¹⁷.

One of such signals is fluctuating asymmetry. Different environmental factors and stressors like exposure to parasites, pathogens and toxins during development cause deviation from bilateral symmetry causing asymmetry of the face and body⁴⁹⁻⁵². Some individuals are more competent to fight such stressors; they show good developmental stability. Most women find man with a symmetric face considerably more attractive than man with asymmetric face⁵³⁻⁵⁷. When choosing a partner with symmetric face, woman basically chooses a superior set of genes to be transferred onto her offspring, and at the same time increases the chance that a partner will be present for a longer period of time to take care of her and their offspring.

The second important advantage of a long-term relationship for a woman is physical security a man can provide. Man's height and weight are signals that point to the solution of the adaptive problem of security. Height is associated with strength and status^{58,59} and it signalizes economic and social advantages; tall men are perceived as more dominant and therefore women prefer taller men, as confirmed in numerous studies. Women consider short men as undesirable for both short- and long-term relationships, and for the spouse women prefer tall, strong and athletic man⁶⁰. Another important characteristic suggesting strength and ability to provide security is the shape of the torso. Numerous studies have confirmed that women prefer men whose torso has an 'inverted triangle' shape (i.e. narrow waist and broad chest and shoulders). Abdominal fat is considered especially unattractive in men, which is understandable since it suggests poor health. Large waist circumference or abdominal fat are risk factors for type 2 diabetes, high cholesterol, high blood pressure and cardiovascular diseases.

In conclusion, we can say that, even though they have different selection strategies, men and women are alike in one aspect: if all other characteristics are equal, they will prefer a more beautiful partner. Many physical characteristics that men and women find attractive in the opposite sex are the signals of good genes, health and/or fertility. Since preferences influence the selection of partner, they have probably evolved through sexual selection as adaptation to select quality partners: during the evolution, individuals who perceived the signal of quality in potential partners and chose partners that possessed those signals

had higher reproductive success. We are their descendants and we have inherited their sets of adaptations for mate selection. Therefore, the common saying "Beauty is in the eye of the beholder" should take into account that those eyes, as well as the brain that processes what the eyes see, have been shaped during the evolution, or as Symons⁶³ says "Beauty is in the adaptations of the beholder".

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Sažetak

ZAŠTO SVI ŽELIMO BITI LIJEPI I MLADI (A ŽENE NAROČITO)? IZ PERSPEKTIVE EVOLUCIJSKE PSIHLOGIJE

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Prema postavkama standardnog modela društvenih znanosti standardi ljepote su kulturalno određeni i usvajaju se tijekom socijalizacije. Međutim, dvije su skupine nalaza dovele u pitanje ovu uobičajenu pretpostavku: prvo, pokazalo se da se standardi ljepote javljaju vrlo rano u životu, što sugerira da bi mogli biti urođeni, te drugo, pokazalo se da su standardi ljepote međukulturalno univerzalni. Ovakvi nalazi potkrepljuju stajalište evolucijske psihologije prema kojem ljepota nije kulturalni konstrukt, a poimanje ljepote nij naučeno, nego predstavlja biološku adaptaciju, dio univerzalne ljudske prirode: preferencije za neke osobine tjelesnog izgleda odražavaju adaptacije nastale u svrhu odabira partnera. Budući da se žene i muškarci razlikuju s obzirom na minimalno potrebno ulaganje u potomstvo, razvile su se strategije odabira partnera koje su donekle spolno specifične. Kako je ključni adaptivni problem za postizanje reproduktivnog uspjeha kod muškaraca predstavljalo pronalaženje plodne žene, oni znatno više vrednuju tjelesni izgled kao signal mladosti, zdravlja i plodnosti nego što to čine žene. No, iako se razlikuju po strategijama izbora partnera, ako je sve drugo izjednačeno, i muškarci i žene će prednost dati partnerima koji su ljepši. Ova je preferencija vjerojatno evoluirala kroz spolni odabir, kao adaptacija za odabir kvalitetnih partnera.

Ključne riječi: *ljepote, evolucijska psihologija, strategije muškog odabira*