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# Do we choose our mates consciously?

*An analysis of selected factors affecting human mate choice*

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16 January 2014

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**Abstract** We introduce the subject of mate choice in humans, sexual selection, and the resulting implications on our social interaction. Furthermore, we provide references to multiple empirical studies suggesting the existence of biologically and evolutionary substantiated mechanisms of mate choice that are processed on the subconscious level. The conclusion is that the findings, while compelling, do not allow us to make definite statements nor quantify the relative contributions from individual factors affecting mate choice.

**Keywords:** mate choice, human, sexual selection, hormone, attractiveness, fitness.

## 1 Introduction

Despite the popular romantic notion of love in our culture, there seem to be multiple unconscious mechanisms that affect mate choice in humans, including those based upon genetics.

Miller [Mil13] states that there are two types of sexual selection: *a) intrasexual* (competition between individual members of one sex – generally males – for reproductive access to the other sex), and *b) intersexual* (heterosexual mate choice for the purposes of reproduction). While the former is usually prominent amongst males (a phenomenon called *male-male competition*), the latter is dependent upon the preferences of the choosy sex, usually females, who can also compete for males, which happens especially when males offer valuable resources – a phenomenon familiar to the human culture as *gold diggers*.

This selection role asymmetry is attributed to the fact that it is mostly females that are required to invest more energy to their offsprings,

limiting their reproductive potential, and guiding them to choose the best mates available. When the roles are reversed, males become the choosy sex [Mil13]. Thus, we face the question of how do the members of the choosy sex select their mates.

## 2 Individual factors

The general consensus is that human romantic partners correlate positively and strongly on age or social attitudes, moderately on intelligence or physical attractiveness, and weakly on weight or personality, and there is evidence that these similarities exist before the initial choice [Zie+11].

Furthermore, we can divide the factors that are responsible for the variations in mate choice into *a) social*, and *b) genetic*. For example, it has been shown that in many cultures, parents were influential with regard to individual choices, likely because of their evolutionary interest [Zie+11]. Other studies have shown that political attitudes exhibit even higher correlations than physical or personality traits, again not due to persuasion or accommodation during the relationship [Alf+11].

In spite of our ability to identify correlations between multiple attributes and mate choice, even such that rely on subconscious processing, according to Zietsch et al. [Zie+11] it is not well understood how do they relate to the formation of long-term relationships.

For instance, it is true that some studies investigating the influence of body odor found

that women were more likely to fancy smells of men with the major histocompatibility complex (MHC) dissimilar to their own (which would increase the immune potential of their offspring, hence it is an evolutionary reasonable mechanism of choice) [HR09], but the differences in the MHC of actual partners were found to be random [Zie+11]. Moreover, the review published by Havlicek and Roberts [HR09] concludes that there is mixed evidence for the role of MHC in human mate choice and that the results vary widely.



Figure 1: The woman is admiring the man's muscular stature, signalling him that she is impressed and ready to make arrangements [Adm].

Continuing with olfactory agents, Saxton et al. [Sax+08] were investigating the role of androstadienone which is known to modulate mood and maintain higher levels of cortisol in women [Wya+07]. They tested its effect at a speed-dating event with the conclusion that this compound which is found in male sweat and saliva (a testosterone metabolite) may positively influence women's judgements of men's attractiveness. Regarding the same, Hummer and McClintock [HM09] have provided evi-

dence indicating that androstadienone increases attention to stimuli with emotional significance while not interfering with social or general cognitive information.

Zhou et al. [Zho+14] were investigating whether the steroids androstadienone and estratetraenol could be classified as human sex pheromones by examining whether they convey gender information and found that the said substances influenced how the test subjects perceived the digitally morphed figures, even depending on their sexual orientation.

It is also important to note that mate choice preferences vary with respect to the menstrual cycle. Women were shown to prefer more masculine and symmetrical men during ovulation while men are likely to prefer women who are currently in the same period. Interestingly, this entirely subconscious fluctuation in preferences appears to be significantly influenced by hormonal contraceptives [AL10].

Another popular subconscious basis for mate choice is masculinity, which is generally perceived as a cue to immunocompetence and implies strong and sexually dominant males. However, research has shown that women do not consistently prefer masculine men and some argue that adiposity is more relevant to mate choice as well as a better indicator of immunocompetence [Ran+13].

According to Valentine et al. [Val+14], research has shown that men with higher facial width-to-height ratio are more aggressive, powerful, and successful. They were trying to assess whether it also correlates with attractiveness of men perceived by women in an ecologically valid environment – again speed dating. The conclusion was that it is positively associated with perceived dominance and attractiveness for short-term relationships, albeit the correlations were very small.

Finally, Puts, Jones, and DeBruine [PJD12] (also [PDH14]) remark that human faces and voices have been shaped by sexual selection

and serve as context-dependent indicators of reproductive fitness. One particularly important point in these texts is that the preferences of the choosy sex may change according to the environment, e.g. favouring masculine sexual partners when resources are scarce and strong competition inevitable, and inclining toward other types when resources are abundant and other qualities potentially more important.

### 3 Conclusion

The last point from the previous section as well as the dependence on naturally occurring cycles emphasise the need for rigorous methodology, replication, and reviews, because while the presented arguments for *significant* subconscious cues influencing human mate choice appear to be compelling, there is still a lack of certainty in both directions. It appears that nowadays, when resources are fairly available to everyone and we have got a social system based upon intraspecies solidarity, the traditional evolutionary mechanisms designed to ensure the survival of our genes are being suppressed.

Future findings could shed some more light upon the process of selection and perhaps also aid those with little success by providing objective guidelines for attracting a mate. Describing romantic love in biochemical terms could finally put an end to some negative consequences of rejection and indeed remind us that there are many fish in the water.

Assuming the above, one must ask whether applying tricks in order to attract a particular mate could turn out to be beneficial or instead lead to doom. Should people try to achieve their goals whatever the means, or uphold the respect for nature above all? We don't have a definite answer to that, but prefer a compromise.

Therefore, without going into philosophical speculations whether it is good or bad, we believe that it is particularly social effects that influence people's romantic interactions, often leading them to invest energy in unlikely to be beneficial relationships, at least from the evolutionary point of view. The current course of our culture may turn out to be damaging in the long run, but if there's no downfall, one can not fully appreciate the rise. We also believe that the available data are inconclusive.

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