

## SEXUAL FANTASIES OF WOMEN AND MEN – AN EVOLUTIONARY PERSPECTIVE. A REVIEW OF RESEARCH

Maria Szymkiewicz<sup>1</sup>

**Summary.** Sexual fantasies are a topic that has been increasingly discussed by researchers over the years. The aim of this article is to present the results of current research on sexual fantasies and conclusions regarding gender differences. Their explanation has been sought in human biology, an evolutionary approach with an emphasis on the role of adaptive mechanisms in shaping human needs, thinking and behavior. The review of research focuses in particular on differences between women and men in the above-mentioned frequency of fantasies, their topics, and their deviant nature. Problematic areas of some studies and expectations regarding the progress of psychology in explaining the discussed phenomenon have been signaled.

**Key words:** sexual fantasies, gender differences, evolution, adaptation

### Introduction

Sexual fantasies are ideas with erotic content (Lew-Starowicz, 1999). Some of them are symbolic representations of unknown motivational processes or are one of the forms of erotic life, remaining in the sphere of imaginary experiences. Their purpose may be to increase arousal and achieve orgasm during sexual intercourse, and they may also reflect the desires and aspirations of the person fantasizing (Costa, 2022). Important from the perspective of scientific research is the lack of constraint and embarrassment towards social norms (Wilson, 1997), as well as the lack of differences between women and men in terms of the acceptability of sexual fantasies (Busch, 2020). Fantasies have a strong creative aspect, which is emphasized by the

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<sup>1</sup> Wydział Pedagogiki i Psychologii, Uniwersytet Jana Kochanowskiego w Kielcach (Faculty of Pedagogy and Psychology, The Jan Kochanowski University in Kielce), ORCID: 0009-0000-1603-6380

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Mailing address: Maria Szymkiewicz,  
miriam\_44@wp.pl

number of topics, characters and settings that we can fantasize about. From their perspective, we can look differently at the identity, needs or character traits of the person fantasizing. Fantasies can be, among other things, a source of information about the evolutionary foundations of human thought and behavior. Differences between women and men in the subject matter of sexual fantasies, their frequency, and other characteristics primarily reflect the evolutionary goal of an individual, which is to maximize reproductive chances. In sociobiological theory, differences in fantasies result from evolutionary differences in the sexual behaviors that women and men present (Ellis & Symons, 1990). In most cases, sexual fantasies are a reflection of evolutionary mechanisms, the main task of which is to maximize the chances of survival and reproduction. This article reviews research on the differences between women's and men's sexual fantasies and analyzes the evolutionary basis of these differences.

### **Fantasy frequency**

Men fantasize about sexual contact more often than women, having an average of 7.2 fantasies per day (Leitenberg, Henning, 1995). Jones and Barlow (1990) observed in their study that men reported a higher frequency of sexual thoughts in response to external stimuli and sexual fantasies during autoerotic behavior than women. Fleischman (2016) explains this phenomenon by referring to the hypothesis put forward by Dawkins (1999) that our influence on the environment and other organisms is part of the individual's phenotype. He suggests that our behavior has evolved to use sexual arousal together with orgasm to extend our phenotype to the minds of others to manipulate them for our own strategic goals (Fleischman, 2016). This would indicate an unconsciously used manipulation tactic, especially in romantic and partnership contacts. Another explanation for differences in the frequency of sexual fantasies may be hormonal differences (Ellis, Symons, 1990), and in particular, the level of androgens, of which testosterone may affect the frequency of sexual fantasies in men (Udry, Billy, Morris, Groif, Raj, 1985; Udry et al., 1986). However, previous studies indicate no significant correlations between desire and testosterone in men (van Anders, 2012). Just thinking about sex increases testosterone levels in women, but does not change them in men (Goldey, van Anders, 2012). High desire in women also positively correlates with higher testosterone levels, but only in women who are not in a relationship (Costa, Oliveira, Pestana, Costa, Oliveira, 2019). Women's sexual fantasies, as it turns out, are at a high level at the beginning of a romantic relationship, but they fade over the course of it (Durr, 2009; Kontula, Haavio-Mannila, 2009; Klusmann, 2002; Moor, Haimov, Shreiber, 2021). This may be the result of a certain kind of tactic, where high desire, along with intensified sexual fantasies about a partner, is to help obtain a partner with desirable characteristics. Increased motivation and involvement in sexual life with a new partner is to satisfy the partner's needs and prevent him or her from looking for another partner (Crosby, 2021). Men fantasize about sex regardless of the status or length of the relationship (Fisher, Moore, Pittenger, 2012;

Moor et al., 2021). The difference between women and men also appears in the factors triggering the first sexual fantasies. Women are more likely to say that their fantasies were triggered by being in a relationship, whereas men are more likely to have their first fantasies in response to a visual stimulus (Gold, Gold, 1991). Such differences may be related to another tendency that differentiates women from men, namely differences in the subject matter of sexual fantasies.

### **Partner characteristics in sexual fantasies**

According to the theory of mate selection, women show greater preferences than men for age, education, intelligence, income, and emotional bond. For men, on the other hand, attractiveness and physical build are more important (Whyte, Brooks, Chan, Torgler, 2021). The same is true for sexual fantasies. Men are much more likely than women to fantasize about physically attractive partners. They are aroused by the exposed body that is easily accessible and their attention is mainly focused on the genitals, breasts, buttocks, or lips (Ellis, Symons, 1990). Men are more likely to fantasize about partners who exhibit characteristics of increased fertility. From an evolutionary perspective, appearance carries a lot of information that is significant in the context of reproduction. Radiant skin without acne, wide hips, large breasts, and ideal body proportions increase the chances of giving birth to a healthy offspring and proper care from the mother (Orions, Heerwagen, 1992; Symons, 1979). In addition, fantasizing about sex with an attractive partner can increase self-esteem and self-worth, which affects the self-confidence and attractiveness of the person fantasizing. Self-confidence is a trait that signals high status and resources (Barkow, 1989), which are important for potential partners. This mechanism may be intended to increase a male's chances of sexual contact, and consequently the possibility of passing on his genes.

Women in their fantasies more often focus on romantic scenes, atmosphere and committed partners (Wilson, 1987). Unlike men, women in their fantasies focus on feelings and this is confirmed by 57% of the surveyed women (compared to 19% of men), and 41% admit that in fantasies they are more attracted to the character traits and emotions of their partner than his appearance (Ellis, Symons, 1990). In the study by Zurbriggen and Yost (2004), the surveyed women, among their favorite sexual fantasies, wrote down those with emotional-romantic themes, which were characterized by feelings, a romantic plot and positive emotions. Women's fantasies in which the leading motif is a romantic relationship are a reflection of evolutionary assumptions. Women in the context of reproduction and raising their future offspring have developed adaptations such as the ability to recognize emotions or identify a born child by smell (Buss, 2019) to increase the chances of survival of the child and provide it with appropriate care. A romantic relationship based on love increases the chances of obtaining resources from a partner who, loving the partner, will be more willing to share them with her and the child, which will ensure their survival and satisfaction of needs (Davidson, 1985).

## Fantasies about sex with multiple partners

Studies show that men are more likely to dream about sex with multiple partners (Binter et al., 2012; Joyal, Cossette, Lapierre, 2015; Lehmillier, 2020; Wilson, 1997). However, men are much less likely than women to dream about sex with two men (56.5% of women and 15.8% of men); (Joyal et al., 2015). Men are more likely than women to admit that group sex fantasies are their favorite (Wilson, 1987). In evolutionary psychology, this is explained by the adaptive attitude of the male to impregnate as many women as possible, as this increases the chances of having offspring. This is a reflection of short-term sexual strategies, in which, despite the low investment, the chances of having offspring increase with the number of partners (Leitenberg, Henning, 1995). However, the tendency to have group sex fantasies decreases in men with age (Wilson, 1997). The decrease in the percentage of these fantasies may be related to the evolutionary desire to express the best quality genes. With the aging process, sperm and genetic material become damaged, which reduces the chances of fertilization and the quality of the transmitted genes, as well as the potential for the birth of a healthy and strong offspring (Sharma et al., 2015). Interestingly, in the study by Binter et al. (2012), there were no significant differences in the frequency of fantasies about orgies between women and men. In contrast to the above studies conducted in English-speaking countries, the study by Binter et al. (2012) conducted in the Czech Republic may indicate a cultural aspect of the absence or presence of differences. In this case, further cross-cultural studies are needed.

## Strangers in sexual fantasies

Men's sexual fantasies often involve newly met or casually met women (Hunt 1974). In Wilson's (1997) study, men reported fantasies about strangers more often than women (33% vs. 25%). In Joyal et al.'s (2015) study, 72.5% of men reported fantasies about sex with a stranger, while women – 48.9%. As for extradyadic fantasies (fantasies about a partner with whom we are not in a relationship), 98% of men and 80% of women reported having such fantasies in the past 2 months (Hicks, Leitenberg, 2001). Also in Joyal et al.'s (2015) study, men reported a higher frequency of such fantasies. The percentage of such fantasies increased with the length of the relationship in both sexes, while only in women was it shown that a greater number of previous partners and previous extradyadic incidents correlated positively with a greater percentage of dyadic fantasies. In men, the percentage of fantasies did not depend on the number of previous partners (Hicks, Leitenberg, 2001). These results indicate that men are more prone to sexual fantasies about strangers than women and this does not depend on the behaviors they exhibit in reality. This result can be understood as the effect of the evolutionary reproductive strategy in men, their focus on short-term sexual contacts, providing greater opportunities for the expression of their genes (Buss, 2020; Buss, Schmitt, 2011). However, also in the case of women, certain benefits resulting

from short-term mating have been shown, such as acquiring better genes or gaining an “additional” defender (Buss, 2020). Wilson (1997) emphasizes that the results obtained in his study could have been influenced by the variety of understandings of the concept of “stranger”, who for men remains only a passing stranger, while women could have assumed the development of a relationship with a stranger for them. This explanation would be related to the evolutionary motivation to seek a partner with whom a woman could bond and develop a relationship that would provide her with resources and a “defender” in the event of an attack.

### **Age and status of the partner in fantasies**

Studies on sexual selection have shown that women are statistically more likely to choose an older partner because of their resources, while men prefer younger partners because of their health and reproductive capabilities, as well as attractiveness (Buss, 2020). Some studies have focused on this issue and assumed that women will more often fantasize about famous and older men, while men will fantasize about much younger women. The results have varied over the years. In Wilson’s (1997) study, women showed a significant percentage of fantasies about famous people, which decreased with age, while in Joyal et al.’s (2015) study, men were slightly more likely to fantasize about sex with someone famous (61.9% of men and 51.7% of women). In a study of American students, 33.3% of men and 28.7% of women admitted to fantasizing about famous people (Davidson, 1985). Binter et al.’s research (2012) showed, however, that women and men did not differ in their fantasies about famous people. From an evolutionary perspective, being close to a famous person and fantasizing about such behavior brings benefits to both sexes. Men increase the range of partners and maximize their chances of reproduction, while women gain the opportunity to test a new relationship with a potentially greater investment of resources (Binter et al., 2012) with the chance of acquiring better genes that ensure reproductive success (Wilson, 1997). In the context of age, the obtained results confirmed that men (Binter et al. 2012; Joyal et al., 2015) more often fantasize about sex with a younger partner compared to women. In the studies by Binter et al. (2012), a similar percentage of women and men reported fantasies about sex with an older partner, whereas in the studies by Knafo and Jaffe (1984) and Joyal et al. (2015), it was men who showed a more frequent preference for such fantasies. Despite the confirmed predispositions towards the partner’s age, the predictions regarding sexual fantasies were confirmed only for male preferences.

### **The unusual nature of fantasies and their deviant nature**

Regarding the unusualness of fantasies, Joyal et al. (2015) surveyed 1,516 people who indicated that out of 55 different types of fantasies, only 9 of them were considered unusual and 2 as strange. As Noorishad, Levaque, Byers, and Shaughnessy (2019) show, typical and popular sexual fantasies are those that correspond to sexual norms

and evolutionary benefits. Those fantasies that do not meet these criteria, however, are not defined as rare or unusual but as common or uncommon. Fantasies that do not meet the reproductive goals of the individual or are frowned upon by society, such as voyeurism, pedophilia, or zoophilia, are less common, which resonates with evolutionary theories (Joyal et al., 2015; Joyal, Carpentier, 2017; Noorishad et al., 2019; Williams, Cooper, Howell, Yuille, Paulhus, 2009).

According to some studies, men show a higher rate of interest and willingness to experience voyeurism and frotteurism (Joyal, Carpentier, 2017) than women. In Williams et al.'s (2009) study, 95% of 103 college students reported having deviant fantasies, 74% of them reported engaging in at least one sexually deviant behavior, and only 38% of the high-fantasy subgroup reported acting them out. The frequency of deviant fantasies decreases with age (Harvey, Jeglic, 2020). Such fantasies may be a buffer, preventing the expression of behaviors that are off-putting and make it difficult to find a potential partner or prevent one from achieving the expected place in the hierarchy.

Among sexual fantasies, there are also those about violence, domination and rape. Among the female students surveyed (Bivona, Critelli, 2009), 49% of them stated that they fantasized about rape with low frequency (once a month or less) and 14% of them had them often (once a week or more). The remaining respondents stated that they had never fantasized about rape. In the study by Bivona, Critelli and Clark (2012), 62% of the female students surveyed admitted that they had had some kind of fantasy about rape. 52% of them admitted that the fantasy concerned being forced to submit against their will. It is worth noting that 32% of women reported that they had experienced a fantasy about being raped, while 52% admitted to having a fantasy about forced intercourse by a man (Bivona et al., 2012). These fantasies can be divided into aversive and erotic, differing in emotional tone. In erotic fantasies, the lack of consent was feigned or symbolic, and the subjects reported positive emotions associated with this type of fantasy. Aversive rape fantasies elicited negative emotions in the fantasizers. In almost half of the erotic fantasies, the perpetrator was a partner or former partner, characterized by high physical attractiveness, which the perpetrator was lacking in aversive fantasies, in which the perpetrator, according to more than half of the respondents, was a stranger or, as they called him, "faceless" (Bivona, Critelli, 2009). Both sexes exhibit fantasies about dominance and submission, however, men slightly more often than women have fantasies in which they dominate, sexually abusing someone, using violence, aggression or the other person's unconsciousness. Women, on the other hand, more often show a preference for fantasies about being sexually dominated (Joyal et al. 2015). Interestingly, neuroticism is a strong personality correlate for men and this type of fantasy, but it does not hold true for women (Hawley, Hensley, 2009). As studies have shown (Bivona et al., 2012), women characterized by openness to fantasy and higher levels of erotophilia reported greater sexual arousal in response to rape fantasies. In women, rape fantasies were generally associated with lower arousal in response to the fantasies, but they were not associated with sexual satisfaction (Gold & Clegg, 1990).

It should be remembered, however, that what distinguishes a rape fantasy from the desire for actual rape is the control that the creator maintains over the content of his or her imagination (Katehakis, 2017). What could explain the emergence and appearance of violence in sexual fantasies? Some point to dissatisfaction with men's sexual life (Gold, Clegg, 1990), while others base their explanations on theories of avoiding blame (Bivona, Critelli, 2009) or a high level of sexual openness in women (Bivona, Critelli, 2012; Meuwissen, Over, 1991). Perhaps aggression, violence and rape are a reflection of the evolutionary characteristics of *Homo Sapiens*. Rape is a way to quickly and effectively pass on one's genes. It is young, attractive women, in the reproductive phase, who most often fall victim to such acts (Buss, 2020). The fantasy about it may be an imagined reflection of reality, in which such behaviors are inhibited by norms and punishments. In the context of high neuroticism, fantasies about violence may be a way to relieve tension and raise one's self-esteem by imagining oneself as dominant, attractive and effective in one's actions. Higher self-esteem means greater success in the real world with potential sexual partners. Often, it is men with a low economic status who use rape as an evolutionary strategy to obtain a partner and obtain the opportunity to reproduce, due to the low chances of competing with individuals of a higher economic status (Buss, 2020; Thornhill & Thornhill, 1983; Thornhill, Tornhill, 1992; Vaughan, 2001). There is also a theory of adaptation, which would involve the use of force by a man to sexually exploit a woman, due to the low costs of such an action (Thornhill, Palmer, 2000). This would then apply to men with a high socioeconomic status and high success in obtaining partners (Lalumiere, Chalmers, Quinsey, Seto, 1996).

In women, one can also find the evolutionary foundations of deviant fantasies. One explanation may be a biological predisposition to submit to fit and strong men (Katehakis, 2017), who will pass on genes to their descendants that increase the chances of survival and reproduction and can also ensure the safety of their partner. Dominance and effective use of force indicate the fitness of a male individual, which carries information about his physical potential and attractiveness due to the possibility of defending himself against threats (Bivona et al., 2012). The idea of forced sex also causes the activation of sympathetic arousal of the autonomic nervous system, necessary for sexual arousal (Katehakis, 2017). Activation of the sympathetic system increases the arousal of the female genitalia (Meston, 2000). Moderate activation of the sympathetic nervous system facilitates sexual arousal in women and ensures maximum sexual performance (Lorenz, Harte, Hamilton, Meston, 2012). Studies have shown that fear-inducing stimuli can increase genital arousal and attractiveness to members of the opposite sex, especially when combined with calm conditions that allow for a combination of sympathetic and parasympathetic activation of the autonomic nervous system (Dutton, Aron, 1974; Meston, Frohlic, 2003; Palace, Gorzalka, 1990). Thus, rape fantasies can induce controlled fear, causing sympathetic activation and, in turn, genital arousal, leading to increased arousal and the chance of conception.

The results of the study by Jozifkova and Kolackova (2017) indicate that sexually dominant men have more biological male children. Moreover, such men and sexually

submissive women perceived themselves as more attractive. The researchers suggest that sexual arousal through dominance may be a means of the mating strategy that increases reproductive success (Jozifkova and Kolackova, 2017). The obtained results may explain fantasies about dominance and submission and their evolutionary nature as a means of facilitating arousal and increasing the chances of selected reproductive strategies.

### **Fantasies about a same-sex partner**

In the studies by Binter et al. (2012), it was shown that women more often than men fantasize and engage in sexual activities with a partner of the same sex. Similar results were obtained in the study by Wilson (1996). Some researchers have attempted to explain this phenomenon in women by referring to the mechanism of alloparenting (Hrdy, 1999) as a way to increase the chances of survival of offspring (Kuhle, Radtke, 2013). According to Kuhle and Radtke (2013), women are characterized by sexual fluidity, i.e. flexible reactions and sexual desires towards other individuals depending on the circumstances, remaining outside the plane of orientation (Diamond, 2008). It allowed female ancestors to enter into romantic relationships with unrelated individuals of the same sex, who were then supposed to help raise children. Such relationships were supposed to provide care and resources, enabling the raising of offspring in the absence of a father and in creasing their chances of survival (Hrdy, 1999; Meehan, 2009). This is also indicated by the results of the research by Frederick, St. John, Garcia, and Loyd (2018), which showed that sex between women can lead to female orgasms more effectively than between a woman and a man. Sexual activity and orgasm promote the formation of close bonds – among others, through oxytocin released during sex or cuddling (Uvnäs-Moberg, Handlin, Petersson, 2015) and its influence on romantic and parental attachment (Schneiderman, Zagoory-Sharon, Leckman, Feldman, 2012) – and these in turn promote the tendency to share resources and take care of offspring (Davidson, 1985). Kanazawa (2016), referring to sexual fluidity, indicates its social and relational nature. Female sexual fluidity is supposed to be an evolutionarily designed mechanism, thanks to which women in polygynous relationships, through sex, could reduce the tendency to conflicts and tensions and thus increase the chances of survival of offspring through cooperation between wives. Also, migrations of young girls from their family groups to other groups to find a husband and avoid inbreeding (Seielstad, Minch, Cavalli-Sforza, 1998), are supposed to confirm the theory of sexual fluidity, facilitating the establishment of new friendships and alliances with women from a new group (Kanazawa, 2016). The thesis of homosexual intercourse as a way of resolving conflicts and establishing beneficial alliances is supported by the common homosexual intercourse observed in primates such as female bonobos (Furuichi, 1989; de Waal, 1987 after: Kanazawa, 2016), for whom genital rubbing is a common behavior when new, young females appear in a group with older individuals. Moreover, women who have experienced



increased sexual fluidity have a greater number of children (Kanazawa, 2016), which may lead to the conclusion that this fluidity is a hereditary mechanism increasing the reproductive capabilities of individuals.

## Conclusions, directions for further research

The studies conducted so far emphasize the adaptive role of sexual fantasies as a manifestation of the individual's motivational forces to maximize reproductive chances (Costa, 2022). All conclusions emphasize the role of evolution in shaping our thinking and behavior. However, the issue of research on the evolutionary contexts of human sexuality is not without controversial and problematic issues. People who volunteer for research on human sexuality may be more open to this topic than people who refuse or do not participate (Joyal et al. 2015). This may result in overestimating certain frequencies of some fantasies and distorting the results due to the presented sexual openness. Another problem is the study of atypical sexual fantasies. All methods may, however, be burdened with the risk of making a good impression on the researcher and the fear of moral judgment and social exclusion related to the atypicality of the fantasies. We also cannot rule out a significant influence of culture on the content of sexual fantasies (Costa, 2022). Some studies are not consistent in some respects and differ depending on the place where they were conducted. An interesting aspect of sexual fantasies is their presence and frequency in older people who are beyond their reproductive years. A large part of the studies was conducted on students (Binter et al., 2012; Bivona et al., 2012; Hicks, Leitenberg, 2001; Jones, Barlow, 1990; Knafo, Jaffe, 1984), who are characterized by characteristics that are significant from an evolutionary perspective, which clearly explains the adaptive role of fantasies. The prospect of new studies delving into the topic of sexual fantasies in older people and seeking an explanation of their presence through evolutionary theories may prove to be not only interesting but also innovative. Another, still less researched topic is the socio-economic status of men who fantasize about rape and violence against their partners. The results of such studies could decide which of the hypotheses regarding the source of the appearance of these fantasies is more correct.

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#### FANTAZJE SEKSUALNE KOBIET I MĘŻCZYŹN – PERSPEKTYWA EWOLUCYJNA. PRZEGLĄD BADAŃ

**Streszczenie.** Fantazje seksualne są tematem coraz częściej omawianym przez badaczy na przestrzeni lat. Celem niniejszego artykułu jest przedstawienie rezultatów aktualnych badań dotyczących fantazji seksualnych i wniosków odnoszących się do różnic między płciami. Ich wyjaśnienia poszukiwano w biologii człowieka, podejściu ewolucyjnym z podkreśleniem roli mechanizmów adaptacyjnych w kształtowaniu potrzeb, myślenia i zachowania człowieka. Przegląd badań koncentruje się w szczególności na różnicach między kobietami i mężczyznami w częstotliwości fantazji, ich tematyce, a także na ich dewiacyjnym charakterze. Zasygnalizowano problematyczne obszary niektórych badań i oczekiwania dotyczące postępów psychologii w wyjaśnieniu omawianego zjawiska.

**Słowa kluczowe:** fantazje seksualne, różnice między płciami, ewolucja, adaptacja

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