Hair length, facial attractiveness, personality attribution:
A multiple fitness model of hairdressing

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Multiple Fitness Model states that attractiveness varies across multiple dimensions, with each feature represent-ing a different aspect of mate value. In the present study, male raters judged the attractiveness of young females with neotenous and mature facial features, with various hair lengths. Results revealed that the physical appearance of long-haired women was rated high, regardless of their facial attractiveness being valued high or low. Women rated as most attractive were those whose face displayed neotenous features in the center of the face (large eyes, small nose) and sexual maturity features, such as long head hair at the periphery. Furthermore, desirable psychological and social traits were attributed to individuals with different hairstyles: male raters associated long hair with the image of a determined, intelligent, independent, and healthy individual, whereas short hair was associated with characteristics such as honest, caring, emotional, and feminine. The possible relationships between attractiveness ratings of scalp hair and perceived social and psychological traits are discussed.

Key words: hairdressing, good genes model, multiple fitness theory

Although facial attractiveness has been intensively stud-ied within the framework of evolutionary psychology, the effect of head hair on attractiveness judgments is rarely ex-amined. Yet, hair on the scalp seems to deeply influence in-dividuals' physical appearance, beauty, and mate value (Be-reczkei, Voros, Gal, & Bernath, 1997). Even children value and praise long hair and attribute positive features to it, such as vitality, power, and cheerfulness. A recent study has revealed that long-haired girls are more successful in pri-mary school than are short-haired girls and boys; they have more friends, are regarded as more popular, and considered more attractive (Baktay-Korsós, 1999). Young adult males also prefer long head hair in women (Cunningham, Rob-erts, Barbee, Druen, & Wu, 1995). Using a computer tech-nique for altering hairdressing, Mesko and Bereczkei (2004) found that long and medium-length hairstyles had a signifi-cant, positive effect on women's attractiveness, whereas other hairstyles (short, bun) did not significantly influence the values of physical beauty. Additionally, male raters val-ued blonde as more attractive and feminine than other hair colors (Cunningham, Barbee, & Philhowwer, 2002; Rich

& Cash, 1993), and blond-hair preference was prevalent among primary school girls (Baktay-Korsós, 2000).

Several evolutionary studies have attempted to explain the salience of hair length and hair color in mate choice. Many of these explanations may belong to the Multiple Fitness Model according to which attractiveness varies across multiple dimensions, with each feature representing a different aspect of mate value (Cunningham et al., 1995; Cunningham, Druen, & Barbee, 1997; Cunningham et al., 2002). They distinguished five dimensions (neonate, sexu-ally mature, senescence, expressive, grooming), each relat-ed to specific properties of individuals' conditions. Further-more, each has a considerable effect on discrete perception categories. Several studies have revealed that we attribute positive or negative psychological traits to individuals with different levels of attractiveness. These include social and intellectual competence, dominance and personality traits such as honesty, competitiveness, friendliness, etc. (Pau-nonen, Ewan, Earthy, Lefave, & Goldberg, 1999; Rhodes & Zebrowitz, 2002). Since we examined female attractiveness in this study, we will now focus on features and dimensions that influence women's attractiveness.

Neotenous features such as large eyes, high forehead, and small nose convey such desirable qualities as youthful vivaciousness, open-mindedness, honesty, warmth, friendli-ness, and submissiveness (Paunonen et al., 1999; Zebrow-itz, 1997). These babyish features are linked to judgments of youth and cuteness, and thus may display a healthy repro-

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ductive future, and also may elicit nurturance, care-taking, and resource investment in males. Neotenous features are decisive in attractiveness judgments about females; women with a high, even extremely high neonate quality were regarded as the most beautiful (Jones, 1995), and babyish characteristics are preferred across cultures (Cunningham et al., 1995). Not only facial traits, but also other bodily attributes contribute to the image of baby-face. Cunningham and his colleagues (1997) regarded fair hair as a cue to neoteny; assuming that it conveys a message of young age. Blondes were rated as more attractive, feminine, emotional, and pleasure-seeking, whereas brunettes were seen as more intelligent. Our prior results suggested that short hair may play a role in mate choice that is similar to neotenous facial traits, and conveys submissiveness and femininity (Mesko & Bereczkei, 2004).

Sexual maturity is conveyed by features that exaggerate the difference between adults and children, and between males and females. These features emphasize the sexually dimorphic nature of development, and may demonstrate fertility, dominance, social influence and status (Keating, 2002; Grammer, Fink, Moller, & Thornhill, 2003). Although investigations clearly show that the connection between maturity signals and social influence is stronger for males than for females (Zebrowitz, 1997), several studies reported that male raters highly valued higher and more pronounced cheekbones, and full lips on female faces (Cunningham et al., 1997). Males also prefer long hair and bun (as a particular style of long hairdressing) to short hair in females that can be interpreted as a preference for maturity features (Cunningham et al., 1995; Mesko & Bereczkei, 2004). Further evidence suggested that sexually mature features were associated with perceived health. In accordance with the above, women's self-rated health was found to correlate with the length and quality of their head hair (Hinsz, Matz, & Patience, 2001). In a recent study, long and medium-length hairstyles were shown to improve the male raters' evaluations of the female subjects' health status; they caused larger change in the health ratings than in other attributes of attractiveness (sexiness and youthfulness) (Mesko & Bereczkei, 2004). The authors interpreted this result in the framework of the Good Genes Sexual Selection Model that states that attractive features on the face and body are honest signals of phenotypic and genetic quality. Sexually dimorphic features are influenced by hormone levels at puberty and imply energetic (and immunological) costs that only individuals with good genetic condition can afford.

Senescence features are believed to convey social maturity, a non-threatening form of dominance, and wisdom. In males, graying hair and baldness may be adaptive for the bearers because they induce social maturity. Bald men were judged less attractive as romantic partners but more attractive as mentors (Muscarella & Cunningham, 1996). Facial hair signals sexual maturity and dominance, males with beard were perceived as more aggressive, older, and less

appeasing than those with clean-shaven faces (Muscarella & Cunningham, 1996). However, we know relatively little of the relations between senescence character of hair and female attractiveness.

Expressive features that facilitate nonverbal expressions may also contribute to the attractiveness of the face. Large smile, dilated pupil, raised eyebrow, etc. are particularly desirable in females because they may convey excitement, arousal and receptivity, but also friendliness and warmth. Although hair length and styles are not expressive features in strict sense, they may modify the perception of facial expressiveness. Hair bun was found to enhance femininity, especially among women with less facial attractiveness (Mesko & Bereczkei, 2004). Certain hairstyles may suggest happiness and kindness; others may convey self-assurance or extravagancy (Morris, 1985).

Grooming features indicate successful adaptation, group-membership, and status through a selective modification of physical appearance (Cunningham & Shamblen, 2003). Makeup, for example, may be used to enhance the size of the eyes, smoothness of the skin, prominence of the cheekbones, and fullness of the lips, thereby conveying neoteny and sexual maturity. Clothing also provides information about the wearer's age, gender, status, and it can capture attention and cultural fitness. Hair can easily be changed in order to increase expressiveness and attractiveness. Haircuts and dying can modify the perceived age and various personality traits associated with facial appearance. Short and blond head hair elevates the appearance of neoteny, whereas long and brown hairs convey maturity and health (Cunningham et al., 1995; Mesko & Bereczkei, 2004). Various hairstyles (short, long, knot, disheveled) deeply influence attractiveness judgments in terms of youth, femininity, and sexual interest. For example, hair worn in bun increased the perceived age in females, compared to long hair, and increased the perceived femininity, compared to short hair (Mesko & Bereczkei, 2004). Full, shiny, well-kept hair may convey health and vitality, whereas disheveled, unkempt hair is likely to decrease women's facial attractiveness, especially her perceived health.

The attractiveness of face depends on the harmonious presence of these different aspects of physical appearance. People prefer mates possessing an optimal combination of the basic qualities (Cunningham et al., 2002). For example, Keating (2002) has stated that human faces were selected to display feature configurations optimally combining social status messages and thus conveying power and warmth. In a study that aimed at investigating the relationship between leadership and physical attractiveness, the category of charismatic females included baby-faced women displaying submissive behavior and mature-faced women expressing dominance.

For high value in global physical attractiveness the individual needs to achieve high scores on all of the major facial and body features. More specifically, highly preferred

women are those displaying a specific combination of features that simultaneously convey neoteny and sexual maturity, and communicate positive psychological traits such as friendliness, youthfulness, health, etc. (Cunningham et al., 2002). The particular combinations of these characteristics differ for males and females: studies have found that the opposite-sex raters prefer fewer maturity characteristics and more neotenous traits in female than in male faces (Keating, 2002; Grammer, Fink, Juette, Ronzal, & Thornhill, 2001). As a matter of fact, attractive female phenotypes generally have more babyish characteristics than do male phenotypes (large eyes, full lips, thin and arched brows, smaller noses, smaller chin, more rounded jaws). However, maturity features, especially at the periphery of face such as pronounced cheekbones and long hair, have also a positive effect on the perceived attractiveness.

This study aims at investigating several adaptive features of cranial hair that have received little attention previously. Our main interest refers to the differences between facial traits and hairstyles in how they influence physical attractiveness and interplay in shaping physical appearance, and to personality traits associated with various hair lengths. Our assumptions are organized in three hypotheses and predictions.

Hypothesis 1. Rhodes, Hickford, and Jeffery (2000) state that each facial and bodily signal has a relatively independent effect on attractiveness. These are likely to define different types and directions of attractiveness, although one quality may be more fundamental than others (Zebrowitz & Rhodes, 2002). Individuals assess each ornament separately, and combine the different aspects of physical appearance into a "global" impression of a mate value. Cranial hair is, therefore, expected to have a specific, separate effect on facial attractiveness. Former studies have shown that compared to short hair, long hair is taken as a signal of better health state and is highly valued by men in potential female partners (Cunningham et al., 1995; Mesko & Bereczkei, 2004). Combining these findings, the following prediction can be made:

Prediction 1. Independent of facial beauty, long and medium-length hair is more likely to increase rated women's attractiveness than short hair. In other words, long hair enhances attractiveness, regardless of the proportion of neotenous or maturity characters of female faces displayed without visible head hair.

Hypothesis 2. The Multiple Fitness Model suggests that the most attractive male and female faces contain both highly neonate and highly sexually mature qualities. More specifically, Cunningham et al. (1995, 2002) proposed that an attractive female face has neonatal features in the center of the face (large eyes, small nose) and sexual maturity features at the periphery (prominent cheekbones). Regarding long hair as a signal of sexual maturity (Cunningham et al, 1995; Mesko, & Bereczkei, 2004), and considering hairdressing as a feature at the periphery of the face, the following prediction can be made:

Prediction 2. Women with large eyes and small chin combined with long hair are expected to be judged as the most attractive. Individuals with less neonatal character and short hair are expected to be rated as the least attractive. All the other qualities are to be placed on a continuum.

Hypothesis 3. Facial appearance and hairstyles are expected to influence attractiveness in different dimensions, and are associated with specific psychological traits. Facial features can directly or indirectly determine the personality characteristics that people attribute to others (Paunonen et al., 1999; Rhodes & Zebrowitz, 2002). Research has shown that baby-faced adults are perceived as being relatively submissive, weak, dependent, and honest (Zebrowitz & Montepare, 1992). Individuals with pronounced maturity traits are likely to be seen as power, influential, and competitive. Hair length is also expected to signal personality traits that are associated with neotenous and mature qualities.

Prediction 3. Male raters associate long hair with the image of health, dominance, self-assurance, and intelligence, whereas short hair is associated with youth, honesty, care and emotion.

METHOD

Facial attractiveness

Facial measurements were made on 10 most attractive and 10 less attractive female faces, using Scion Image (version 4.0.2. Beta). A fix set of points was marked on each face using the mouse. These points indicated the shape and position of internal features that were similar to those used in other studies. Next we measured the size of the following facial traits: eye width (EW), length of forehead (LF), length of chin (LC), and face height (FH). We selected only these facial traits because they can possibly be covered by the head hair, and are thus visibly modified by the different hairstyles. For the analysis below we have divided each of the first three measures by face height (FH), to correct for differences in sizes of faces. Thus three indices of facial proportions were produced: relative eye width (EW/FH), relative length of forehead (LF/FH), and relative length of chin (LC/FH). The high value of the former features and the low value of the latter were regarded as signals of neoteny.

Hairdressing and attractiveness judgments

The investigation was implemented as a part of the experiments described in Mesko and Bereczkei (2004). 77 female subjects were recruited from the university's undergraduate population. Their mean age was 21.9, with a range between 18 and 29. We took photo portraits of all the female subjects and these were scanned into a computer. For the photographs, the subjects were asked to pull their hair back

from their face and fix it with clips so that the length and style of their hair could not be seen. This image was called "basic" face. Thirty young men were asked to judge the attractiveness of the basic faces on a 1-6 scale. On the basis of their judgments, 20 individual faces were selected from the original sample of 77 females: the 10 most attractive, and the 10 least attractive women.

In the second step, different hairstyles were adjusted on the basic faces of the selected 20 women with the help of a computer program. These coiffures were the following: short, medium-length (half-long), and long. They were selected from a large set of hairstyles provided by a computer program (Cosmopolitan My Style) that is widely used in hairdressing salons. (Hair color was not manipulated; each coiffure was brown, which is the most prevalent hair color in Hungary.) Then another group of 82 male raters were asked to judge the attractiveness of the selected 20 women, who were presented with the 4 different hairstyles (basic face + 3 coiffures). Thus 80 individual female faces were shown to each male rater. Finally, we calculated the effect of hairstyles on attractiveness by subtracting the scores of the basic face pictures from those of the haired ones. In other words, we measured the shifts in attractiveness judgments from the basic face to the faces with various hairstyles.

Male raters were also asked to rate female faces on 10 different attributes, using a seven-point Likert scale for each rating. These attributes were: young, dominant, independent, feminine, honest, intelligent, healthy, caring, emotional, and self-assured. Trait ratings (1-7) were done for women with short and long hair. In order to avoid interaction with facial attractiveness, only women with equal scores of attractiveness on "basic face" were compared. This means that the 10 least attractive women and the 10 most attractive women were rated on these attributes, and mean scores were separately constructed for both groups. This procedure yielded 40 female faces with mean ratings for all 10 attributes.

RESULTS

Facial measurements

When comparing basic faces (faces without visible head hair) significant differences between the most and least attractive girls were found in the three measured facial traits. The former proved to have higher foreheads, larger eyes, and smaller chins than the latter (forehead: t (9) = -18.70, $p < .001$; eyes: t (9) = -4.03, $p < .05$; chin: t (9) = -10.33, $p < .001$). These differences indicate different values on the scale of neoteny; the most attractive women have higher neonate qualities than the others.

Attractiveness of the faces with various hairstyles

The results of Bonferoni comparison pairwise test revealed that long hair and medium-length hair enhanced fe-

male subjects' facial attractiveness compared to the basic face ($F(1,47) = 14.32, p < .001$). Figure 1 shows that this increase in the perceived physical beauty was much more pronounced for women whose face (without visible head hair) was rated as less attractive than those with a more attractive face ($F(6,282) = 38.96, p < .001$). However, the absolute differences in attractiveness judgments are mainly due to the extension of neonate characters; hairdressing in itself did not reverse the original differences in esthetic evaluations based solely on facial features. Figure 2 shows the following trend in attractiveness judgments: high neonate character (big eyes, large forehead, small chin) + long hair > high neonate character with short hair > low neonate character + long hair > low neonate character + short hair.
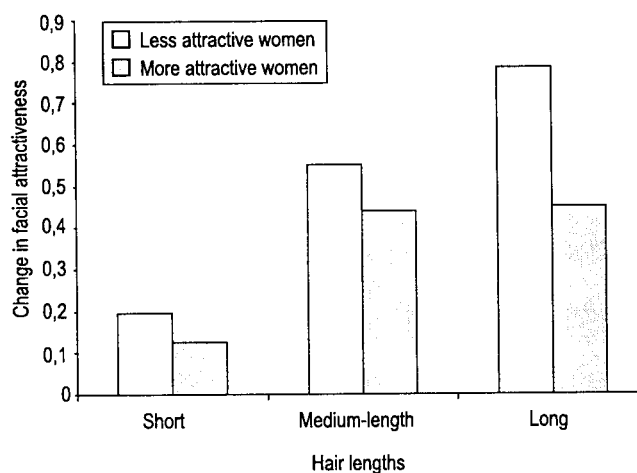

Figure 1. The effect of various hair lengths on facial attractiveness in the groups of young women with different levels of "basic" attractiveness (attractiveness of face without visible head hair)
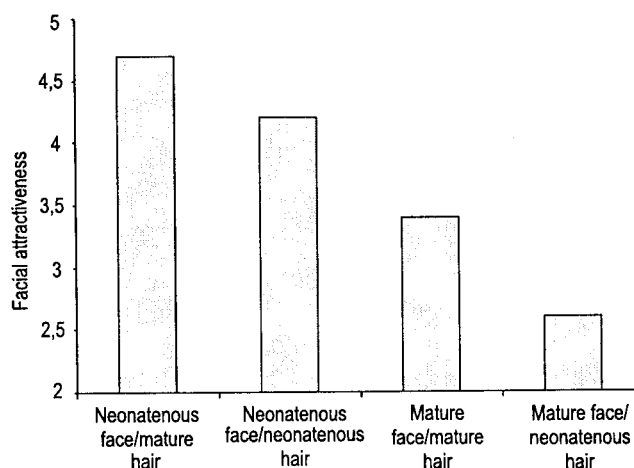

Figure 2. Attractiveness judgments for particular combinations of maturity and neonate features of face and cranial hair

Table 1.

Mean trait ratings for attractive and non-attractive female faces with short and long hair

Features	Attractive (neotenous) face			Non-attractive (mature) face			All		
	Hair		*p*	Hair		*p*	Hair		*p*
	Short	Long		Short	Long		Short	Long	
Honest	4.35	3.25	.01	5.27	3.91	.001	4.81	3.58	.001
Youthful	3.97	4.07	n.s.	4.56	4.24	n.s.	4.27	4.15	n.s.
Self-assured	3.68	3.71	n.s.	5.39	4.98	n.s.	4.50	4.32	n.s.
Caring	4.45	3.50	.01	5.31	4.27	.01	4.89	3.89	.01
Intelligent	3.39	4.26	.05	3.68	4.50	.05	3.54	4.33	.05
Emotional	4.27	3.70	.01	5.02	4.20	.01	4.64	3.95	.01
Dominant	3.54	4.26	.01	4.26	4.82	.01	3.87	4.54	.01
Healthy	3.29	4.12	.05	4.10	5.16	.001	3.69	4.64	.01
Independent	3.66	4.08	n.s.	4.90	5.08	n.s.	4.29	4.58	n.s.
Feminine	2.29	3.37	.001	3.95	5.27	.01	3.11	4.32	.001

These results also support Prediction 2. Women with high neonate quality in the center of the face and long hair as a maturity feature at the periphery were rated highest by male raters, whereas the reverse composition (maturity character on the center, neonate character at the periphery) was judged as the least attractive (Figure 2).

Facial features, hair length, and personality traits

Table 1 shows that in both groups, those of the most and the least beautiful woman, hair length influenced perceived personality traits in the predicted directions. Mean scores for all 20 women have also shown significant differences in the effects short and long hair had on judgments of personality characters. The majority of differences in the associated personality traits fit to our prediction 3. Long hair is more likely to convey mature qualities such as feminine, intelligent, dominant, and healthy. Short hair rather signals personality traits that are associated with neoteny: honest, caring, and emotional. Differences in self-assurance, independence, and youth were not significant.

DISCUSSION

The Multiple Fitness Model states that responding to physical appearance is not a simple process but is a function of several dimensions of features conveying different meanings. Characteristics of hair and face influence attractiveness decisions independently, suggesting that they signal different aspects of physical beauty.

Female facial attractiveness was mainly due to the presence of neotenous features. Women with larger eyes, higher forehead, and smaller chin were judged as more attractive

than those with a lower neonate quality. This finding corresponds with other studies showing that, in general, when judgments about heterosexual attractiveness are made, facial cues signaling maturity and dominance diminish female attractiveness (Keating, 2002).

However, unlike facial features hair appears to convey attractiveness through maturity characters. In accordance with prediction 1, long and medium-length hair was more likely to increase women's attractiveness than did short hair. Long hair enhanced female subjects' facial attractiveness, regardless whether female faces without visible head hair ("basic faces") were valued high or low in the former study. In summary, mature hairstyle improved attractiveness of female faces displaying either neonate or mature morphological traits.

It is interesting that in the context of female face, neonate features proved to improve primarily attractiveness, whereas for cranial hair it seems that maturity character is crucial for attractiveness judgments. This difference may be interpreted in the Good Genes Sexual Selection Model (Grammer et al., 2003; Johnston, Hagel, Franklin, Fink, & Grammer, 2001; Thornhill & Grammer 1999). One of the main tenets of this model – especially the Zahavi-principle - claims that in order for a feature to reliably signal physical attractiveness it should be costly. Since sexual displays on the face (especially estrogen- and testosterone-dependent traits) are costly for steroids are known to negatively affect immunocompetence , only people with good genetic conditions (e.g. heterozigozity) can afford to develop them. Similarly, if the development and maintenance of scalp hair is costly in terms of metabolism and time allocated for its care, only a fraction of people can afford to grow healthy and long hair. Indeed, several studies have suggested that during ontogenesis hair formation is very expensive in that

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it shows a high growth rate and requires a high level of energetic expenditure (Dawber, de Berker, & Wojnarowska, 1998; Ebling, Dawber, & Rook, 1986). Since development of long hair requires a large amount of resources from the organism, it may reliably signal a high phenotypic and genetic quality of the bearer.

As dermatological studies have revealed, hair growth is controlled by hormonal effects that seem to be highly different from those that are responsible for shaping female faces after puberty (Dawber et al., 1998; Ebling et al., 1986). Estrogen facilitates the maturation of the facial bones and affects smaller face length and jaw size in females, features that show sexual dimorphism in humans. For the development of attractive faces, that are characterized by small lower facial parts, especially gracile jaw and full lips, females need a high estrogen level combined with low testosterone level. The growth of head hair is also controlled by sexual hormones, but their influence seems to be different. Animal studies have revealed that oestradiol, testosterone and adrenal steroids delay the initiation of follicular activity (anagen phase), and inhibit hair growth. In humans, oestradiol reduced the duration of active phase, and decreased the rate of the females' hair growth. Similarly, the growth of male scalp hair does not require any androgen stimulus. Several studies revealed that baldness in males, which is considered highly unattractive feature in females, is provoked by a high level of androgens (Muscarella & Cunningham, 1996). Besides sexual hormones, other hormones such as thyroids profoundly affect hair growth.

Consequently, we can conclude that facial attractiveness is associated mainly with neotenous features linked with high estrogen. In contrast, attractive hair is likely to indicate maturity character resulting from different hormonal mechanisms. Therefore, both babyish facial features and long hair may improve physical appearance via display of different ways of biological fitness. Both of them are costly traits that can be developed only by people with good physical (and genetic) condition. However, those who can afford estrogen markers on face are not guaranteed to be able to develop long, full, shiny hair. Future studies could examine wide variation in patterns of hair growth and facial development, and genetic and cultural factors responsible for the measured differences.

A related question refers to the relative position of attractive features on face. How are neotenous facial traits and mature hairstyle placed on an attractive face? In accordance with Prediction 2, women judged as the most attractive are those with neonate features in the center of their faces (large eyes, small chin) and maturity qualities (long hair) at the periphery. This result supports one of the assumptions of Multiple Fitness Model. In general, central facial traits may signal youth as a primary cue of the female's reproductive value, whereas features far from the central position of face seem to signal maturity and health as important cues of survival capacity that could be transmitted to offspring.

The results concerning prediction 1 and 2 again support the assumption inferred from the Multiple Fitness Model that hair length and facial features contribute to different types and aspects of attraction. Hairdressing has a separate effect on physical attractiveness that, nevertheless, proved to be weaker than the effect of facial traits. In other words, cranial hair is far less decisive in shaping physical attractiveness than facial traits measured on "basic face"; on average more beautiful women with short hair were more highly valued than less beautiful women with long hair.

Another finding of our study is that hair length influences not only physical attractiveness, but also certain personality judgments. Former research has found a large effect of attractiveness judgments on perceived personality traits; people who are judged different in physical attractiveness are expected to have different personality traits. We attributed various psychological traits to individuals whose hair length was different but the perceived degree of their physical attractiveness was the same. In accordance with prediction 3, certain features of female hairdressing advertise desirable social and psychological traits. Long hair was associated with an image of maturity, with features such as dominant, intelligent, feminine, and healthy, whereas short hair signaled personality traits that are associated with neoteny: honest, caring, emotional. We can conclude that raters appear to connect health and maturity with hair length, and femininity and youthfulness with neonate features, and than infer attractiveness from these relationships. A further conclusion is that facial attractiveness is more influential in generating associations than hairdressing: highly attractive faces invoked much higher scores of the desirable personality traits than less attractive women with similar length of hair.

An important question is what mediates the relationship between attractiveness ratings of scalp hair and perceived social and psychological traits? There are several possible explanations to this question (Zebrowitz & Rhodes, 2002).

One possibility is that hair length and style directly convey honest messages about biological fitness. According to the good genes sexual selection theory, as we have seen, the preferred features on face and body reliably signal the genetic quality of mates. As an indirect support of good genes theory, our former study has shown a strong positive effect of long hair on female's perceived health (Mesko & Bereczkei, 2004). The present study has revealed that long hair conveys psychological cues that are regularly associated with maturity and biological fitness: dominance, health, intelligence. Components of good health (e.g. pathogen resistance, high immunocompetence) are transmitted to offspring, improving their survival and reproductive capacity. Dominant and intelligent mates would likely provide better parental care and would confer survival benefits to their offspring by securing important resources. Hinsz et al. (2001) found a positive correlation between women's self-rated health and hair quality, and concluded that hair length and hair quality may signal reproductive potential. To our knowledge, at present,

there are no research results available for the real association between hair quality and the individual's actual health, measured by independent experts.

Another biological interpretation of long hair as sexual maturity trait is strongly linked to costly signal model. Grammer and his colleagues (2001) assumed that the general function of hair (on the scalp, in the armpits and pubic hair) is to help distribution of pheromones produced in the apocrine glands. Long female scalp hair may thus increase the surface for the distribution of sexual pheromones that are attractive to males, and may correlate with an optimal level of female sex hormones.

There are several non-evolutionary mechanisms that can account for a relationship between attractiveness of head hair and the associated psychological traits. Several theorists propose that preferences for attractive faces have evolved as the by-products of more general perceptual or recognition mechanisms (Enquist, Ghirlanda, Lundquist, & Wachtmeister, 2002; Zebrowitz & Rhodes, 2002). More closely, certain facial and bodily traits that are important in social relationships during childhood can be over-generalized to adults as attractive features. Our results indicating that long hair appears to display maturity and dominance may be interpreted in this theoretical framework. A recent Hungarian study has revealed that long hair is associated with social influence and status even in juvenile females (Baktay-Korsós, 1999). Long-haired girls from primary schools were found to be more attractive, have more friends, and they are regarded more popular in the community than short-haired girls. The authors proposed that since long hair is costly in social terms – its grooming requires more attention and time - it provides a signal of high parental investment. By implying a favorable social environment, long hair thus may convey a high community status regardless of the age of the children. This social benefit may be transformed into adulthood as a signal of high mate value.

The social relationships and cultural expectations also deeply influence perception of attractiveness. Preferences about physical attractiveness do not exist in isolation but as a part of a constellation of valued social traits. Some evidence suggest that people show a preference for features typical of their own group, culture or race, when asked to rate facial attractiveness (Dion, 2002). A similar appreciation of context on judgments of attractiveness can be applied to cranial hair. For example, compared with Caucasians, Asian Americans rated straight and black hair as more attractive possibly reflecting their frequent exposure to such features (Wagatsuma & Kleinke, 1979). Various hairstyles convey messages of group membership, sexual receptivity, transition to a different stage in the life course, etc. (Mesko & Bereczkei, 2004; Morris, 1985). Biblical and mythological stories all over the world imply that long hair has a symbolic meaning of power, activity, cheerfulness, vitality, and success. In many cultures wearing long hair or letting it down is considered as a female erotic signal that is frequently prohibited

for married women in public life. Unmarried girls generally wear long hair but after marriage they have to cut it, tie it into a bun, or cover it with a scarf, indicating that men are no longer free to flirt with them. A recent study revealed that young American women tend to wear longer hair than older women, using long hair as a sign of their youth (Hinsz et al., 2001). It is possible that the preference for long hair in females is a result of the wide-spread requirement that men living in traditional cultures should wear short hair. Already the Apostle Paul warned men that it was shameful for them to wear long hair. The preference for short male cranial hair may come from the vulnerability of warriors with long hair – they might be easily grabbed in the fights. In short, it is a cross-cultural stereotype (or archetype) that long hair is feminine, whereas short hair is masculine. This dichotomy is prevalent even in industrial countries.

Hairdressing, similarly to facial attractiveness serves multiple functions; it may advertise genetic quality, personality traits, and socially desirable qualities. Further research is needed to integrate these possible explanations in order to achieve a better understanding of physical beauty and its relation to hairstyles.

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