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Sex Differentiation in Hair in Eighteenth- and Nineteenth-Century Britain.

This article will explore the role of hair as a marker of sex difference by scrutinising how eighteenth- and nineteenth-century Q&A books, anatomical, surgical and gynaecological manuals, treatises on hair, and classic works on evolutionary theory explained differences between the sexes in the length of head hair, in the presence or absence of the beard, and in the distribution of bodily hair. It will investigate when a change from employing humoral to biological explanations to clarify sexual differences in hair took place, in order to examine whether, after the decline of the Galenic medicine, physiological accounts were able to immediately explain why women had longer head hair and why only men had beards.

Similar to the medical exploration of male and female genitals, discussions about the differences between the sexes in the hair on the head and facial hair shifted from employing humoral to biological explanations. The Galenic humoral theory proposed that the human body was filled with four humours—blood, phlegm, yellow bile, and black bile, and the humoral composition within a person would affect his/her physical health and temperament.² The mixture of humours not only was thought to be varied within each individual, but also was believed to be different

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² Londa Schiebinger, *The Mind Has No Sex?: Women in the Origins of Modern Science* (London: Harvard UP, 1989), p. 161.

between the sexes. Generally, men were characterised by hot and dry qualities of humours, while women were marked by cold and moist qualities of humours.³ The hierarchical relationship between the male and female bodies was based on the hierarchical order of these four elements: hotness and dryness were believed to be superior to coldness and moistness. Heat, moreover, was placed in the highest level because it was regarded as the ‘immortal substance of life’.⁴ Unlike humoral theory which employed the idea of different degrees of heat that each sex possessed to account for sex difference, biological accounts used the material concepts of the body, such as organs, tissues and cells, to describe male and female constitutions. Within this new framework, sex organs, rather than the composition of humours, were considered as the foundation of femininity and masculinity, for they were believed to be the controller which regulated the sexualisation of the entire body, including the skeleton and the brain.⁵ In the early twentieth century, instead of identifying which organs governed the development of the sexed bodies, endocrinologists asserted that the basic mechanism of sexual differentiation was a chemical agent—sex hormones. They first claimed that each sex had its own sex hormone. The discovery that both men and women had male and female sex hormones led them to develop the idea that the potency of female sex hormones was greater in women and vice versa.⁶

This article will argue that, from the accounts of sex difference in hair, it can be seen that, after the decline of Galenic medicine and before the emergence of hormonal studies, there was no paradigmatic account which could clarify the mechanism that regulated the sexualisation of the entire body. Therefore, in the accounts of why women had longer head hair, humoral explanations continued to be used until the mid-nineteenth century. The early modern idea of

³ Karen Harvey, *Reading Sex in the Eighteenth Century: Bodies and Gender in English Erotic Culture* (Cambridge: Cambridge UP, 2004), p. 78.

⁴ Schiebinger, *The Mind Has No Sex?*, p. 161.

⁵ Nelly Oudshoorn, *Beyond the Natural Body: An Archeology of Sex Hormones* (London: Routledge, 1994), p. 37.

⁶ *Ibid.*, pp. 38-9.

the commensurability between the length of head hair and facial hair was transformed into the concept that head hair, beards and bodily hair were commensurable, while Galenic terminologies still occasionally appeared in mid- and late nineteenth-century medical writings. From a review of the accounts of sex differences in genitalia, head hair and the beard, it can be observed that a change from applying humoral to biological accounts took place in different periods of time. Physiological accounts were not able to instantly explain how the entire body was sexualised after the decline of humoral theory.

During the second half of the nineteenth century, besides examining the hair on the head and the beard, a number of medical authors further scrutinised differences between the sexes in the amount and distribution of bodily hair. They further declared that eyebrows, ear and nasal hair and pubic hair were all distinctive sexual characteristics. In *Materializing Gender in Early Modern English Literature and Culture*, Will Fisher suggests that early modern writers regarded the hair on the head as an indicator of sex, a sign which could differentiate the sexes, whereas modern readers do not.⁷ The final section of this article will point out that the perception that women had longer hair than men did not vanish at the end of the early modern era, as Fisher's division of early modern and modern viewpoints implies. Also, it will discuss why many nuanced differences between the sexes were valued and were viewed as valid indicators of sex especially in the late nineteenth century.

The Hair on the Head.

This section will point out that a transition from applying humoral to biological explanations to interpret difference between the sexes in the length of head hair happened much later than the

⁷ Will Fisher, *Materializing Gender in Early Modern English Literature and Culture* (Cambridge: Cambridge UP, 2006), pp. 10, 29, 131-3.

accounts of how men and women differed in the form, the magnitude, the structure and the composition of sex organs, in bodily outline, and in skeletal constitution. Physiological accounts were unable to immediately clarify the cause of each sexual difference after the old worldview was discredited. Michael Stolberg suggests that a change in the accounts of men's and women's reproductive organs from Galenic homology and humoral theory to sexual dimorphism and anatomical descriptions took place during the course of the seventeenth century.⁸ Londa Schiebinger maintains that the gradual reliance on the constitution of male and female skeletons, rather than the degrees of heat, as the foundation of understanding sex differences, occurred during the eighteenth century.⁹ Thomas Laqueur contends that, by the late-eighteenth century, the one-sex model, which was based on Galenic worldview and asserted that 'men and women differed only per accidens and not essentially', was replaced by the two-sex model, which perceived 'the categories "male" and "female" as opposite and incommensurable biological sexes' and believed that sexual differences could be discerned throughout the body.¹⁰ These scholars have different opinions about the timing of a change of the sex models. Nevertheless, they generally identify the period in which the understandings of the genitalia changed from employing the idea of Galenic homology to applying the concept of the incommensurability between the sexes as the turning point which signified the decline of the Galenic medical thought. However, from the accounts of sexual difference in head hair, it is clear that humoral explanations did not immediately disappear right after a transition of explanations of sex differences in genital organs occurred.

In discussions about sex difference in head hair, the humoral account continued to be applied

⁸ Michael Stolberg, 'A Woman Down to Her Bones: The Anatomy of Sexual Difference in the Sixteenth and Early Seventeenth Centuries', *Isis* 94 (2003), 286-7; Helkiah Crook, *Mikrokosmographia: A Description of the Body of Man* (London: printed by R.C., 1651), pp. 249-50.

⁹ Schiebinger, *The Mind Has No Sex?*, p. 191.

¹⁰ Thomas Laqueur, 'Sex in the Flesh', *Isis* 94 (2003), 300-06; Thomas Laqueur, *Making Sex: Body and Gender from the Greeks to Freud* (London: Harvard UP, 1990), pp. 153-4.

until mid-nineteenth century, while the earlier idea of the commensurability between the sexes in the length of head hair and beard and humoral terminologies still occasionally appeared in late nineteenth-century medical writings. This continuity once again shows that physiological explanations were not able to instantly clarify sexual difference in the length of head hair after a change of the sex models. Early modern medical authors perceived that the difference between the sexes in the length of head hair was a manifestation of the nature order established by God. Owing to the blending of Galenic medicine with religious belief in appreciating ‘God’s Holy Order in Nature’, the humoral cause of sexual distinctions was viewed as ordained, and consequently medical authors rarely explained why men were hotter and drier than women in the first place.¹¹ Eighteenth- and nineteenth-century writings employing a humoral account also took for granted the assertion that women had longer head hair. The 1715 edition of Aristotle’s *Book of Problems*, which reiterated the answer provided by its first version published in 1595, indicated that, because women were moister than men, they had more matter of hair and consequently, their hair was longer than men’s. Moreover, this matter would ascend when women had their monthly discharge, for the humour which nourished the hair increased during this period of time.¹² Similarly, the 1726 edition of *The British Apollo*, a compendium of questions and answers ‘approved of by many of the most learned and ingenious of both universities, and of the Royal-Society’, stated that, because of the abundant moisture in women’s heads and due to nature’s disposition, women had longer hair.¹³ About a century later, in his treatise on hair published in 1818, Alexander Rowland, a perfumer and hairdresser, stated that the length of the hair would increase to a great degree, with the continuing supplement of the ‘cholor phlegmatic

¹¹ Fisher, *Materializing Gender*, p. 15.

¹² Aristotle’s *Book of Problems* had been published at least thirty editions during the seventeenth and eighteenth centuries. Anon., *Aristotle’s Book of Problems, with Other Astronomers, Astrologers, Physicians, and Philosophers*, 26th edn (London: Printed for and sold by the booksellers, 1715? [1595]), p. 3.

¹³ Anon., *The British Apollo: Containing Two Thousand Answers to Curious Questions in Most Arts and Sciences, Serious, Comical, and Humorous*, vol. 1 (London: printed for Theodore Sanders, 1726), p. 278. *The British Apollo* had been published at least four editions during the first half of the eighteenth century.

matter'. Because this humour was more predominant in women, women had longer hair.¹⁴ Thomas Bogue, a hair cutter, reiterated Rowland's account in his monograph on hair published in 1845.¹⁵ It can be seen that a humoral explanation of sex difference in the length of head hair had undergone no apparent change from late sixteenth century to mid-nineteenth century.

During the second half of the nineteenth century, a humoral account of the length of hair was replaced by biological explanations. These physiological accounts still did not clarify how the 'fact' that women had longer head hair was ascertained at the outset. Also, like humoral explanations, they used the reasoning that, because men and women possessed a different quantity of a certain matter (such as cellular tissue, electrical excitants and fatty tissue), the length of men's and women's head hair differed. Several of these explanations occasionally used Galenic medical terminologies and early modern idea of the commensurability between the sexes in the length of head hair and beard. The fact that mid- and late-nineteenth-century authors identified different matters as the cause of the sexual difference in the length of head hair and the reality that several Galenic terminologies were still employed show the lack of a paradigmatic account which could explain the mechanism that regulated the sexualisation of the entire body.

In *Diseases of the Human Hair* (1851), Pierre Louis Alphée Cazenave, a dermatologist, recorded the accounts respectively provided by Grellier and Girou.¹⁶ Grellier asserted that female hair was much longer, 'owing to the fact of the greater abundance of cellular tissue beneath the scalp in women, which furnishes to the hair a sort of bed, irrigated with juices'.¹⁷ He also indicated that

¹⁴ Alexander Rowland, *A Familiar, Pleasing, and Interesting Essay, on the Curious Structure, the Varied Colours, and Preservation of the Human Hair* (London: the author, 1818), p. 26.

¹⁵ Thomas Bogue, *A Treatise on the Structure, Color and Preservation of the Human Hair* (Philadelphia: J.W. Moore, 1845), p. 48.

¹⁶ Pierre Louis Alphée Cazenave did not specify the authority of Girou and Grellier and where he cited their accounts.

¹⁷ Cazenave, Pierre Louis Alphée, *Diseases of the Human Hair* (London: Hebry Renshaw, 1851), p. 26.

the development and preservation of the hair depended on the materials of nutriment abstracted by the cellular tissue. By using the term ‘juices’, it seems that Grellier’s account preserved some trace of the humoral terminology. Nevertheless, by employing biological terms, such as ‘cellular tissue’, and by noting the function of this tissue, it can be seen that he strived to develop a physiological reasoning. On the other hand, Girou proposed that the greater accumulation of ‘electrical excitants’ in the female was why women had longer hair. Cazenave commented that this account was merely a conjecture.¹⁸ About thirty years later, in *The Hair* (1885), Daniel John Cunningham, an anatomist, stated that women had longer head hair than men because the female scalp, ‘a hair-producing organ’, possessed much more ‘rich gifts’ (the nourishment) than the male one.¹⁹ By describing the scalp as an ‘organ’ which served the function of producing hair, Cunningham employed a physiological explanation to account for sex difference in the length of head hair.

It seems that Grellier, Girou and Cunningham simply replaced the moist humour in the Galenic account with that of ‘cellular tissue’, ‘electrical excitants’, or ‘rich gifts’. Although these medical authors’ explanations were no longer a Galenic one, both their accounts and humoral theory were based on the idea of sexual dimorphism. Explicitly, all of these explanations supposed that the amount of a certain matter (such as the degrees of heat or the quantity of cellulated substance, electrical excitants and rich gifts) possessed by men and women differed, and thus men and women had dissimilar length of head hair. The account of sex hormone, which appeared in the early-twentieth century, was also grounded upon sexual dimorphism, for it proposed that men and women had different amount of male and female hormones. Before the emergence of hormonal explanation, mid- and late-nineteenth-century writers frequently

¹⁸ *Ibid.*

¹⁹ Daniel John Cunningham, *The Hair* (London: LSE Selected Pamphlets, 1885), p. 103.

identified different matters as the agent which resulted in differences between the sexes in the length of hair. This literature not only reveals that writers were still exploring the mechanism of sexual differentiation, but also shows that, apart from the sex organs, they perceived that sex differences could be found in the quantity of cellular tissue, electrical excitants, or nourishment that men and women had.

Daniel John Cunningham further provided some reasons, which were derived from a diversity of origin, to support the proposition that women had 'rich gifts' underneath the scalp. Some of his explanations retained some trace of early modern ideas, whereas his last account employed an evolutionary concept. His first explanation was that men used much hair-making material drawn from the blood to manufacture the beard. This account suggested that the female scalp had the capability of growing longer hair, because the nutrition that women abstracted from the blood only needed to supply the growth of hair on the head, whereas the nourishment that men drew from the blood had to support the growth of the hair on both the head and face; therefore, men's hair could not grow as long as women's. This account somewhat preserved the early modern notion that the hair and beard were two 'commensurate' features and the idea that 'women's long hair was a compensation for their beardlessness'.²⁰ Nevertheless, it is clear that Cunningham repackaged the earlier idea of the commensurability in the length of head hair and beard within the framework of a new physiological explanation.

Cunningham further stated that, because women had a greater amount of fatty tissue under the head, their scalp was congenially more suitable for the growth of the hair. It can be seen that he employed a mixture of humoral and physiological explanations in this account. Early modern medical writers perceived that the dissimilar bodily outline between the sexes was stemmed from

²⁰ Fisher, *Materializing Gender*, p. 133.

the ‘great quantity of fat placed under the skins of women’ and women were fatter because they were colder.²¹ With the triumph of new biology, a more material concept of body—the fatty tissue—was used to account for the difference between male and female constitutions.

Cunningham’s third account was that, owing to ‘the mental labours of man being of a more severe kind’, the male scalp was not able to grow hair as long as the female one.²² This explanation suggested that men’s shorter hair length was affected by a mixture of external and somatic causes. Specifically, by stating that men undertook more severe mental labours, Cunningham implied that men’s daily work required them to rely heavily on their brains, whereas women’s quotidian tasks did not demand them to labour with their minds as much as men did. This external factor led to men’s greater use of their brain, and thus resulted in the exhaustion of the nutrition of the male scalp; consequently, men could not rival with women in hair length. By suggesting that the lack of mental exercise was why women had longer hair, this account turned the inability of male scalp to grow long hair into a sign of male mental superiority.

Cunningham indicated that his final account, which was derived from evolutionary theory, was the most plausible one, probably because it not only moved away from old humoral explanations but also sidestepped the physiological approach, which strived to identify the agent that governed the development of sexual characteristics but could not successfully explain the whole mechanism of sexualisation. Instead of singling out a specific organ, the evolutionary theory attributed the development of traits that could differentiate the sexes to sexual selection and heredity. Cunningham stated that, due to ‘conjugal selection’, bald women would have much

²¹ William Cowper, *The Anatomy of Humane Bodies* (Oxford: Printed at the Theater for S. Smith and B. Walford, 1698), commentary to plate 2.

²² Cunningham, *The Hair*, p. 103.

difficulty in finding husbands.²³ Thus, they had less chance to transmit their deficiency. On the other hand, bald men still could procure wives, but because of ‘a curious coincidence’, their daughters rarely inherited this defect.²⁴ Although Cunningham did not note that this account was cited from Darwin’s book, *The Descent of Man*, his description of ‘conjugal selection’ was similar to the idea of ‘sexual selection’ in Darwinian theory.²⁵ Both Cunningham’s and Darwin’s argument illustrates how Victorian writers projected their own tastes or standards of beauty to shape scientific discourse. Charles Darwin stated that the greater abundance of hair on the head of contemporary women was owing to the gradual extinction of bald women, who failed to find male partners and thus had no offspring. Also, he applied the ‘laws of inheritance’ in the evolutionary account to explain why bald men’s daughters were still capable of growing longer hair than men. Darwin stated that secondary sexual characteristics were transmitted through both sexes, but developed in one alone.²⁶ By asserting that baldness would not be transmitted from fathers to daughters, Cunningham suggested that the loss of head hair was a male sexual trait, while the greater luxuriance of hair on the women’s head was a female sexual characteristic.

In *Archives of Surgery* (1893-94), Jonathan Hutchinson, a surgeon and pathologist, not only indicated that the distribution of hair was different between the sexes, but also pointed out that long hair was a characteristic peculiar to women. He asserted that certain elements of food that the hair required for its sustenance were not unlimitedly supplied. Therefore, ‘the absolute suppression’ of hair bulbs on the face, the trunk and limbs in women resulted in the abundant growth of hair on the scalp.²⁷ On the other hand, in addition to the hair on the head, men also had facial and bodily hair. Due to the law of ‘local competition’, the male scalp could not

²³ *Ibid.*, p. 104.

²⁴ *Ibid.*

²⁵ Charles Darwin, *The Descent of Man and Selection in Relation to Sex* (London: Gibson Square, 2002 [1871]), pp. 207-209, 560.

²⁶ *Ibid.*, p. 227.

²⁷ Jonathan Hutchinson, *Archives of Surgery*, vol. 5 (London: J. & A. Churchill, 1893-94), pp. 326-7.

compete with that of women in respect of the length and the speed of hair growth. He indicated that the fact that hairy men and bushy-bearded men were usually bald could verify his point. His account somewhat retained the earlier idea that the hair on the head, the beard and bodily hair were commensurate, but it is clear that his proposition was based on a supposedly empirical observation of the development of the hair upon each part of the male and female bodies. Hutchinson also argued that the capacity of the female scalp to grow hair on the head to an almost indefinite length must be regarded as a sexual peculiarity in women, for men did not have the same capacity.²⁸ Clearly, Hutchinson perceived that sexual differences could be found in the distribution of hair throughout the body. Moreover, the length and amount of the hair on the head was an indicator of sex.

From a review of the accounts of the difference between the sexes in head hair, it can be seen that humoral explanations continued to be used until the mid-nineteenth century. Several Galenic terminologies and the earlier idea of the commensurability between head hair and beard were still preserved in several late-nineteenth-century accounts. These accounts show the persistence of humoral explanations and the older concept. Although there was a transition from employing humoral to biological explanations, remarkably both accounts were founded on the supposition of sexual dimorphism: the differences between the sexes in the degrees of heat or in the amount of a certain matter or tissue led to the disparity in the length of head hair between men and women. This similarity indicates that the idea of sexual dimorphism dominated the reasoning of sexual difference in head hair in both early modern and later medical writings. It is also noticeable that, although both early modern and later authors asserted that women had longer head hair, late nineteenth-century writers further defined this unverified 'fact' as a sexual characteristic. This definition shows their eagerness to identify markers of sex difference.

²⁸ *Ibid.*

The Beard.

This section will explore how medical and scientific writers explained why men had beards, whereas women did not. Both eighteenth- and nineteenth-century writers explicitly declared that the sexes could be differentiated from the presence or absence of facial hair. In contrast to the length of head hair, the beard was a more obvious marker of sex difference. A change from applying humoral to biological explanations to clarify why men had beards also took place earlier than the accounts of why women had longer hair. Although this transition was not very smooth in the early eighteenth-century, with the establishment of a link between the presence of facial hair and the condition of sex organs in the last quarter of the eighteenth century, a physiological account replaced the humoral one. This section once again shows that a change from employing humoral to biological explanations to clarify sex differences in each body part occurred in different periods of time. In the late-nineteenth century, Daniel John Cunningham employed evolutionary theory to explain why only men had beards. From Cunningham's account, it can be seen that, unlike early modern authors who perceived the presence or absence of facial hair as a manifestation of God's holy order, Cunningham defined the beard as the arbiter of social order.

In *An Anatomical and Mechanical Essay on the Whole Animal Oeconomy* (1730), John Cook, a medical practitioner, strived for moving from employing a humoral to a physiological explanation. However, because he could not find the substantial duct that supplied the growth of facial hair, he went back to repackage the old Galenic idea with some new elements, such as the excrement of the nervous liquor and the differences between the sexes in the texture of the skin. Cook asserted that the possession or the want of beard was associated with the amount of perspiration that each sex excreted and the texture of the skin of each sex. He stated that men perspired more, and therefore, they had more nourishment for the growth of hair. Moreover,

their skins were more porous and spongy, and thus could hold the ‘nervous juice’, preventing it from flowing away quickly, and so converting it into hair.²⁹ For Cook, the excrement of the ‘nervous liquor’ not only constituted the substance of the hair, but also nourished the root of the hair. Because he could not find any glands which secreted ‘particular juice’ to nurture hair, he proposed that, after ‘nervous liquor’ left the nerves and was of no further service to the body, it flowed into the pores for the growth of hair.³⁰ It can be seen that his account retained some trace of Galenic theory, which believed that hair was produced by the accumulation of sooty, thick and earthy vaporizations which became a single body after blocking the entire pore and being pushed and compressed by similar excretions, and thus protruded from the skin like a plant.³¹ Clearly, Cook replaced the faeces of vaporization in Galenic theory with the excreta of nervous liquor. In addition, his account not only presents how a humoral explanation was mixed with a physiological one, but also shows that both accounts were based on the supposition of sexual dimorphism: the differences between the sexes in the secretion of perspiration (a humoral idea) and the texture of skin (a supposedly empirical observation) were both used to explain another distinction between men and women, namely, the presence or absence of the beard.

Cook’s second account seems to be a circular argument, but, from his assertion, it is clear that he perceived the beard as a distinctive marker of sex. Cook stated that the reason only men had beards was to differentiate the sexes. Without this, men and women could hardly be distinguished, especially when they wore similar clothes. Seventeenth-century anatomist Helkiah Crooke asserted that women ‘needed no ensigne of majesty [i.e. beard] because they were born to subjection’.³² It can be seen that early modern writers viewed the presence or absence of the

²⁹ John Cook, *An Anatomical and Mechanical Essay on the Whole Animal Oeconomy*, (London: printed for W. Meadows, 1730), pp. 320-1.

³⁰ *Ibid.*, pp. 315-6, 319-20.

³¹ Galen, *Selected Works*, trans. by P.N. Singer (Oxford: Oxford UP, 1997), p. 251.

³² Crooke, *Mikrokosmographia*, p. 70.

beard as a manifestation of the patriarchal hierarchy established by God.³³ As Will Fisher indicates, from the perspective of early modern authors, both clothing and physical signs, such as the length of hair, the beard and the position of genitalia, were all valid markers of sex, because they were all expressions of God's Holy Order in Nature.³⁴ Evidently, Cook believed that the beard was a more reliable indicator of sex than clothes, probably because clothing was detachable and was not a part of the body. Cook's account suggests that, from the early-eighteenth century onwards, only physical characteristics were perceived as credible markers which could differentiate the sexes. Cook went on to claim that, if any one did not believe the assertion that the reason only men had beards was to distinguish men from women, he could touch and compare the coarseness and porosity of his own beard with the smoothness of a woman's chin. His sense of touch would inform him that the texture of men's and women's skin on the cheek had a great difference. The experiment that Cook suggested actually could only verify rather than explain the already known fact that men had beards, whereas women did not. Also, by maintaining that men and women had a different trait, so they could be differentiated, he actually highlighted the function of this physical sign as an indicator of sex, rather than exploring the cause of this distinction.

Londa Schiebinger indicates that, within the humoral theory, which was out-of-date but still influential in the eighteenth century, in men, vital heat converted 'excess bodily fluids' into sweat, semen, and beards, and, in women, into menstruation.³⁵ The re-absorption of semen also resulted in the growth of the beard. In *Elements of Midwifery* (1777), at first glance, it seems that the account of William Moore, a doctor of medicine, retained some trace of humoral idea, for he also noted the association between semen and the beard. However, Moore identified sex

³³ Fisher, *Materializing Gender*, p. 15.

³⁴ *Ibid.*, pp. 5, 16.

³⁵ Londa Schiebinger, *Nature's Body: Gender in the Making of Modern Science* (New Brunswick, N.J.: Rutgers UP, 2004), p. 125.

organs, rather than the degrees of heat, as the foundation which regulated the presence of facial hair in men. Moore stated that the condition of genital organs had a powerful influence on both male and female constitution. The filling of the seminal vesicles changed the voice and led to the growth of beards.³⁶ The humoral account asserted that excess bodily fluids and the semen were materials from which the beard was derived. In contrast, Moore defined the semen as a sign of maturity which showed that the male secondary sexual characteristics were going to develop. His explanation suggests that, because women did not have semen, they did not have beards. Moore's account shows that, in the last quarter of the eighteenth century, a physiological explanation was used to clarify the presence of facial hair in men, about eighty years earlier than the accounts of sex difference in head hair.

In the nineteenth century, the beard continued to be perceived as a distinctive indicator of sex. In *The Human Hair* (1853), Alexander Rowland, a perfumer, indicated that the possession or lack of the beard was the most obvious and distinguishing peculiarity between the countenance of men and women.³⁷ In the late-nineteenth century, evolutionary theory was employed to explain why only men had moustaches and beards. Similar to the Galenic account, the evolutionary explanation perceived that men and women had homologous structure. However, unlike Galenic homology, which believed that male and female sex organs had identical structure, the evolutionary account asserted that, like lower animals, male and female human ancestors were marked by the lack of sexual differences and the possession of similar characteristics.³⁸ In *The Hair* (1885), Daniel John Cunningham stated that some people believed that women also had had beards in the distant past. The possession of facial hair was an advantage for men, given that it

³⁶ William Moore, *Elements of Midwifery, or the Arcana of Nature, in the Formation and Production of the Human Species Elucidated* (London: Printed for the author, 1777), p. 60.

³⁷ Alexander Rowland, *The Human Hair: Popularly and Physiologically Considered with Special Reference to Its Preservation, Improvement and Adornment, and the Various Modes of Its Decoration in All Countries* (London: Piper, 1853), p. 91.

³⁸ Patrick Geddes and J. Arthur Thomson, *The Evolution of Sex* (London: Scott, 1889), p. 3.

could protect the air-passages. However, contemporary women lost this benefit, probably because men raised doubts as to whether facial hair was an attractive trait in their partners, or perhaps because men desired to monopolise this 'badge of lordship'.³⁹ Evidently, Cunningham employed the idea of homologous structures in men and women during ancient times and the concept of sexual selection to account for why women evolved from having a beard to losing this characteristic. Also, he believed that the beard was a sign of patriarchal order. Cunningham's account shows that a distinctive sexual trait, rather than religious authority, was viewed as the arbitrator of social order.⁴⁰

The Distribution of Hair upon the Body.

Eighteenth-century medical writers believed that men and women could be distinguished by the length of the hair on the head and the possession or the want of the beard. Undoubtedly, they recognised several differences in the location and quantity of hair between the sexes. Late-nineteenth-century authors further explored the distinctions between the sexes in the distribution and amount of hair on each body part and identified nuanced differences between men and women in eyebrows, the hair growing inside the ears and the nostrils, and pubic hair. Moreover, they often declared that these differences were distinct sexual characteristics. This section will discuss why late-nineteenth-century writers were eager to note every possible distinction between the sexes in hair. It will also explore why they recognised far more sexual differences than earlier and later authors.

In *The Descent of Man* (1871) Charles Darwin explicitly defined hairlessness and hirsuteness as sexual traits. His account also implied that such a difference could be the arbitrator of social

³⁹ Cunningham, *The Hair*, pp. 88-9.

⁴⁰ Laqueur, 'Sex in the Flesh', pp. 300-06; Laqueur, *Making Sex*, p. 153.

order. Darwin argued that the absence of bodily hair in women was ‘to a certain extent a secondary sexual character; for in all parts of the world, women were less hairy than men’.⁴¹ He also explained what ‘secondary sexual characters’ meant by stating that male and female children closely resembled each other, but, except for people who were emasculated, at puberty, men would develop distinctive male characteristics, while women would assume distinguishing female features.⁴² Darwin went on to assert that both male and female semi-human ancestors had beards and were marked by hairiness. Men had retained the beard through sexual selection at a very remote period, whilst women lost facial and bodily hair at the same time for the same reason. Clearly, Darwin perceived that secondary sexual characteristics such as hirsuteness in men and hairlessness in women were the result of sexual selection for traits. Also, he believed that men and women had identical characteristics in a remote past.

Darwin also contended that hairiness was an advantage to men, given that bodily hair could protect human beings from being exposed both to the scorching of the sun and to sudden cold. Thus, from his viewpoint, the fact that the males of some races were more hairy than women or the naked races did not suggest that ‘they had retained their primordial condition’ more entirely.⁴³ It can be seen that Darwin not only distinguished the sexes by the presence or absence of facial and bodily hair, but also asserted that the characteristics possessed by men were superior to those of women and the naked races. By proposing a hierarchy of physical traits, Darwin’s account implies that bodily characteristics could be the arbiter of social order.

Jonathan Hutchinson and Alexander J. C. Skene further identified every nuanced distinction between the sexes in hair. In *Archives of Surgery* (1893-94), besides the hair on the head and the

⁴¹ Darwin, *The Descent of Man*, p. 600.

⁴² *Ibid.*, pp. 556-7.

⁴³ *Ibid.*, pp. 600-1.

beard, Hutchinson asserted that hair growing inside the ears and the nostrils and eyebrows were distinctive sexual traits. He incorporated the idea that sex organs were the foundation which regulated the development of sexual characteristics with the notion of the commensurability between the head hair and the beard to explain sex differences in hair. Hutchinson asserted that, in men, ears and nostrils might also have great tufts of hair, but he had never seen the growth of hair in these positions in women. Also, women only grew the most delicate down on the face, unless they were senile or ill, and thus their sexual health and function were affected. The development of the eyebrows was restrained in women, whereas, in some men, it grew so freely that it became a 'decidedly sexual character'.⁴⁴ He, in addition, argued that women's head hair was a distinct sexual feature, for the male scalp could not compete with that of the female with respect to its ability to grow long and abundant hair. He also noted that men had greater quantities of hair on the trunk and limbs. Finally, Hutchinson concluded that, in men, the abundance of the hair all over the body showed the perfection of their sexual health, whereas, in women, the suppression of bodily hair indicated the excellence of their sexual function.⁴⁵

It can be seen that Hutchinson perceived that sexual differentiation in hair was controlled by male and female sexual and reproductive system. Also, he employed the earlier idea of the commensurability between the head hair and facial hair and transformed it into the concept that head hair, the beard and bodily hair were commensurable, in order to clarify how the sex and reproductive system exercised to supply the development of facial and bodily hair in men and the growth of longer and abundant head hair in women. From Hutchinson's viewpoint, healthy male sexual and reproductive system would implement the rule of local competition. Consequently, men had abundant facial and bodily hair, but their hair on the head could not

⁴⁴ Hutchinson, *Archives of Surgery*, p. 326.

⁴⁵ *Ibid.*, pp. 325-8.

compete with women in length. In contrast, a well-functioning female sexual system would apply the regulation of absolute suppression. Accordingly, women were marked by beardlessness and hairlessness, but had longer head hair.

Similarly, in *Medical Gynecology* (1895), Alexander J. C. Skene, a gynecologist, not only pointed out the differences between the sexes in their distribution of hair throughout the body, but also further analysed the distinction between men's and women's pubic hair. He stated that the hair and its distribution over the body had striking sexual differences. Men had far more profuse hair, not only because of the possession of a beard, but also due to the growth of hair all over the body. In contrast, women of the same high races not only did not have beards, but also did not have any perceptible bodily hair, except for the pubic hair. He went on to maintain that, although both women and men had abundant pubes, there was still a marked difference: women's pubic hair terminated a little above the *mons veneris*, whereas those of men extended up to the umbilicus in the median line.⁴⁶ That Skene even observed a sexual difference in pubic hair shows that he was keen to find every physical trait that could distinguish men and women.

Evidently, late-nineteenth-century writers recognised differences between the sexes in head hair, the beard, eyebrows, ear and nasal hair and the pubes. The question remains as to why they were more eager than earlier and later authors in identifying nuanced distinctions between the sexes in hair and declaring these differences as sexual characteristics. Will Fisher indicates that, in the early modern period, physicians believed that both the length of head hair and the beard could help them ascertain whether an individual was a man or a woman.⁴⁷ Fisher states that this seems to be somewhat strange to modern readers, because the length of head hair is no longer viewed

⁴⁶ Alexander J. C. Skene, *Medical Gynecology: A Treatise on the Diseases of Women from the Standpoint of the Physician* (Edinburgh: Young J. Pentland, 1895), p. 68.

⁴⁷ Fisher, *Materializing Gender*, pp. 131-33.

as a marker of sex today. He explains that, in the modern western world, sexual characteristics that can signify a person's sex have two features. First, they are usually believed to be unambiguous and dichotomous. Explicitly, men are supposed to possess a set of characteristics, whereas women are presumed to have an opposite set of traits. According to the criterion listed by Fisher, the hair on the head, eyebrows, ear and nasal hair and pubic hair are not viewed as indicators of sex today. Even though some men may have shorter head hair, unrestrained eyebrows, the growth of abundant hair inside the ears and nostrils or upon the umbilical region, other men may not be distinguished from women by these features and vice versa. Fisher goes on to point out that sexual characteristics are assumed to be stable and fixed. He finds that modern scientists actually verify the early modern supposition that, if women and men grow their hair indefinitely without ever cutting it, women's hair will be longer than men's. However, because the length of head hair is malleable, frequently influenced by custom and fashion, it is not regarded as a proper or definitive marker of sex, but is perceived as a gendered characteristic, which is believed to be culturally determined.⁴⁸

Will Fisher clarifies why the head hair is no longer a marker of sex by indicating modern understanding of what sexual characteristics are. On the other hand, the accounts of Lynda Birke and Londa Schiebinger can explain why all distinctions between men and women were valued in the eighteenth and nineteenth centuries. Birke points out that, in the eighteenth century, as 'European expansion resulted in the "discovery" of more species of animals and plants, and other groups of human beings, European science became increasingly concerned with the demarcation of difference'.⁴⁹ Medical and scientific men not only inscribed differences upon bodies, but also perceived that male European human was the norm from which all differences

⁴⁸ *Ibid.*, pp. 18-9.

⁴⁹ Lynda Birke, *Feminism and the Biological Body* (Edinburgh: Edinburgh UP, 1999), p. 35.

were measured. Londa Schiebinger maintains that, through scrutinising sex and racial differences and claiming that these physical distinctions were an unbiased, natural blueprint upon which the appropriate social relations were grounded, medical and scientific men could square and justify the subordinate status of others in the newly 'envisaged axiom of equality'.⁵⁰ The eagerness to use physical traits as the foundation upon which the patriarchal or hierarchical relationships between men and women, civilised and barbarous people, and human beings and animals were grounded is one of the possible reasons why medical and scientific men were keen to note nuanced differences between men and women in hair.

The belief that sex differentiations signified the progress of a civilization or species probably also led to an emphasis being placed on all characteristics that could distinguish men from women.⁵¹ Late-eighteenth-century craniologists claimed that the distinctions between the sexes increased with the development of civilization.⁵² Similarly, late-nineteenth-century evolutionists asserted that sexual differences multiplied with the progress of species. As Patrick Geddes and J. Arthur Thomson indicated in *The Evolution of Sex* (1889), all higher animals had distinct male and female forms, whereas, in lower animals, the differences between the sexes often did not exist.⁵³ The hair on the head, facial hair, the distribution of bodily hair, eyebrows, ear and nasal hair, and pubic hair were thus proofs which not only could show that sexual differences could be found throughout the body, but also could verify the superiority of human being, given that not all male and female higher animals could be distinguished by these physical signs.

To recapitulate briefly, both eighteenth- and nineteenth-century medical writers asserted that men and women could be distinguished by the length of head hair and the possession or the lack

⁵⁰ Londa Schiebinger, 'Skelettrestreit', *Isis* 94 (2003), 307-13; Schiebinger, *The Mind Has No Sex?*, pp. 189, 191, 214-16.

⁵¹ Schiebinger, *The Mind Has No Sex?*, p. 190.

⁵² *Ibid.*, p. 212.

⁵³ Geddes and Thomson, *The Evolution of Sex*, p. 3.

of the beard. Unlike the accounts of genitalia which changed from being grounded on the idea of Galenic homology to sexual dimorphism, both the humoral and physiological explanations of head hair and the beard were founded on the concept of sexual dimorphism. With respect to the length of head hair, mid- and late nineteenth-century writers differed from their precursors in proposing that the difference between the sexes in the quantity of cellular tissue, electrical excitants, or fatty tissue, rather than the degrees of heat, was why women had longer head hair. In the accounts of the beard, early-eighteenth-century author John Cook asserted that the differences between men and women in the amount of perspiration and the texture of the skin were why only men had beards. Late-eighteenth-century writer William Moore suggested that the maturity of the male sex organs led to the presence of facial hair in men. It can be seen that each author identified different distinctions between the sexes, such as dissimilar quantity of a certain matter or tissue, the texture of the skin, or the condition and function of reproductive organs, as the cause of the sexual differences in head hair and beards. This variety shows that, after the decline of the Galenic medicine, a new paradigm which could explain the sexualisation of the entire body had not yet established.

A transition from applying humoral to physiological accounts to clarify why women had longer head hair took place in the second half of the nineteenth century, almost a century later than a shift in the explanations of why only men had beards, and two hundred years later than a change of the accounts of sexual difference in genitalia. A change from employing humoral to biological explanations to specify the distinctions between the sexes in each characteristic occurred at different periods of time. Several mid- and late- nineteenth-century writers still occasionally used Galenic terminologies. A number of authors repackaged the early modern idea of the commensurability between head hair and facial hair into the concept that hair on the head, the beard, and bodily hair were commensurable, in order to explain why women had longer head hair

but did not have bodily hair. These suggest that physiological explanations were not able to clarify each supposed sexual difference right after a change of sex models.

Early modern ideas of the homologous structure between male and female genitalia was transformed into the notion that men and women had identical characteristics in the remote past in the evolutionary account of why women did not have facial and bodily hair. Evolutionary writers further argued that beardlessness and hairlessness were distinctive female secondary sexual characteristics. Many late-nineteenth-century authors were also eager to find nuanced differences between men and women in hair and declared that these distinctions were distinguishing sexual characteristics, because they believed in the idea that physical traits were natural blueprint upon which the proper social relations were founded and the notion that the differences between the sexes increased with the progress of civilization and species.

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