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The Accelerated Development of Youth: Beard Growth as a Biological Marker

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Anyone who sees today's high schoolers sporting beards will be surprised—or incredulous—to read in Homer's *Iliad* that Achilles, the greatest warrior among the Greeks at Troy, was still beardless. Yet Plato accepted it as a well-known and unsurprising tradition.[1]

Over historical times, the onset of puberty has occurred at different ages in the lives of young people. It is generally assumed today that dietary, behavioral, and psychological factors in addition to genetic and other influences account for historical differences in the advent of signs of maturity. It is also believed that the average age at which males and females mature has an impact on the behavior and culture of youth and of society as a whole. This article, however, deals with the causes and consequences of changes in time of maturation only in its concluding observations. Primarily it attempts to trace one biological marker, the advent of facial hair, in the history of the West.

There is today no agreement as to the age at which males reached physical maturity in eras earlier than the nineteenth century; and the uncertainty becomes greater as one moves back through the centuries. The insecurity and conflict of opinion on this subject are due partly to the paucity of data and partly to confusing the age of biological maturity with that of legal majority or with other ascribed changes in the life course.

Beard growth has the advantage of being freely visible, and, unlike other secondary sex characteristics, it does not give cause for shame or religious scruple. In fact, the beginning growth of facial hair has often been commented upon as a sign of attaining virility. Even in periods when men shaved their facial hair off, the growth of the beard was regarded as a badge of maturity. The sprouting of facial hair can serve as a marker for biological maturation, since it is triggered by testosterone, the male sex hormone, though influenced by health, nutritional, and other factors. It should be mentioned that among

[1] Homer, *Iliad*, 11. 786; Plato, *Symposium*, 180A.

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the genetic factors the racial component determines beard growth to such an extent that all nonwhite populations must be excluded from consideration; likewise all East Europeans and peoples south and east of the Mediterranean Sea will be left out.

To demonstrate historical changes in the development of facial hair, present-day conditions should be clarified. Beard growth makes its appearance relatively late in male pubertal maturation. The process begins on the average at about 14 years and 9 months, when the downy hairs of the upper lip begin to increase in length and pigment content and gradually extend toward the middle to form a mustache of fine hair. It is soon followed by hair on the upper part of the cheeks and in the midline just below the lower lip. Finally hair grows along the side of the cheeks and over the chin. It is then ample enough to invite shaving. About half of American boys reach this stage at 16 years of age; the great majority have a shavable beard at 17.

Beard development varies with socioeconomic conditions; for instance, in Newcastle-upon-Tyne the mean age at the onset of beard growth in middle-class boys was about five months earlier than the mean for the entire population; and it was about five to six months later in sons of unskilled workers. Furthermore, like all other maturational events, beard growth is genetically determined and varies from one boy to the next irrespective of his home life and well-being. In about 80 percent of the population this variation is a question of only a few months earlier or later than the mean. But a minority of boys stand out as early or late maturers who experience the onset of beard development earlier or later by about a year, and a few deviate even by two or more years from the bulk of the population.[2]

The dating of beard growth as a signpost for biological maturation cannot be expected to be precise, because it is not possible to agree on a definite date when a beard has become "shavable." The recognition that this condition exists depends on personal decision in a framework of social custom, and will vary from one individual to the next by several weeks or even months. In an historical investigation, therefore, beard growth can be a useful marker for the average age of maturation only if we make allowance for some subjective

[2] Howard V. Meredith, "A Synopsis of Puberal Changes in Youth," *Journal of School Health,* 37:4 (1967), 171–76; Herant A. Katchadourian, *The Biology of Adolescence* (San Francisco, 1977), 54; J. M. Tanner, "Human Growth and Constitution," in *Human Biology,* G. A. Harrison *et al.*, eds., 2d ed. (Oxford, 1977), 323; M. Meuser and E. Nieschlag, "Sexualhormone und Stimmlage des Mannes," *Deutsche Medizinische Wochenschrift,* 102:8 (25 February 1977), 263; P. E. Kubitschek, "Sexual Development of Boys with Special Reference to the Appearance of Secondary Sex Characteristics," *Journal of Nervous and Mental Disease,* 76:5 (1932), 425–51. In North American and European countries, socioeconomic differences in manifestations of puberty are narrowing and beginning to disappear. For a recent study of pubertal changes calculated by social class, see W. Z. Billewicz *et al.*, "Pubertal Changes in Boys and Girls in Newcastle-upon-Tyne," *Annals of Human Biology,* 8:3 (1981), 211–19. See also Olcay Meyzi *et al.*, "Sexual Maturation in Turkish Boys," *Annals of Human Biology,* 2:3 (1975), 251–59.

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judgment and realize that the dating is approximate. This element of subjectivity can be acceptable if the data are ample enough to reduce the element of chance in their collection and if they appear to be mutually compatible and merge into a consistent historical context.

ANCIENT TIMES AND MIDDLE AGES

Ancient authors have left only a few statements on the beginning of beard growth. Aristotle wrote that "after the age of 21 women are fully ripe for childbearing, but men go on increasing in vigor. . . . And it is about this time of life that in men the beard makes its appearance."[3] Vindicianus, a renowned North African physician who lived in the second half of the fourth century after Christ, but who relied on earlier authors, asserted that a boy's beard matures at the age of 22.[4] About the same time, Nemesius, bishop of Emesa, mentioned among the things in life that happen inevitably and without our own effort the fact that youths of 20 years develop a down.[5]

In gymnastic competitions in ancient Greece, three age groups were distinguished: boys (*paîdes*), beardless youths (*agéneioi*), and men (*ándres*). The beardless youths were the ephebes (*épheboi*), mostly 18 to 19 years old, but ranging from 16 to 20.[6] Young Romans let their facial hair grow until it became a sizable beard that could be clipped or shaved. From all accounts, this was well after the twentieth birthday, when the event often was celebrated in a semireligious rite, the *depositio barbae*. According to Cassius Dio's *Roman History,* Augustus was in his twenty-fourth year, that is, 23 years old, when he had his beard shaved off and turned this event into a public festival.[7] The fact that no report refers to a year before the twentieth is all the more noteworthy because ancient data were provided exclusively by and for upper-class men, who can be expected to have been early in physical development. The data, limited as they are, indicate that the pubertal development of the Greeks and Romans occurred at least four years later in life than it does in a modern population. Nothing seems to be known about the onset of beard growth among the free craftsmen, the farmers, and the slaves.

Further evidence of the virtual beardlessness of males younger than 21

[3] Aristotle, *Historia animalium,* 582a.

[4] Vindicianus Afrus, *Gynaecia,* 19, II(L), and 19, VI(B); Karl Deichgräber, "Vindicianus 2," *Paulys Realencyclopädie der classischen Altertumswissenschaft,* Neue Bearb. (Stuttgart, 1897), Zweite Reihe, Halbband 17, col. 29–36.

[5] Nemesius Emesenus, *De natura hominis Graece et Latine* (Hildesheim, Germany, 1967), ch. 34.

[6] Lorenz Grasberger, *Die Ephebenbildung oder die musische und militärische Ausbildung der griechischen und römischen Jünglinge* (1881; rpt. Darmstadt, 1971), 5–7. In ancient Greece before the time of Alexander the Great, males did not shave.

[7] Cassius Dio Cocceianus, 48.34. 3; Emiel Eyben, "Antiquity's View of Puberty," *Latomus,* 31:4 (1972), 693; Jérôme Carcopino, *Daily Life in Ancient Rome* (New Haven, 1940), 160; August Mau, "Bart," *Paulys Realencyclopädie der classischen Altertumswissenschaft,* Neue Bearb., Band 3 (Stuttgart, 1899), 30–34.

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comes from the cultural ambience of homosexuality to which upper-class men conformed in ancient Greece. The only reputable homosexual love objects were boys and youths of the leisure class, not slaves or male prostitutes, and they had to be beardless, that is, not yet regarded as adults. Any free adult man who served as a love object and flouted this cultural tabu earned the contempt of his peers and could be ostracized for life as a male prostitute. The growth of facial hair was therefore commented upon as a terminus of every respectable homosexual love relationship. In a couplet of the Theognidean collection, the poet declares that he "will never cease to 'fawn on' the boy so long as the boy's cheek is hairless."[8] Plutarch commented upon "the inconstancy of boy-lovers," who drift away as soon "as the hair grows" on their faces; and he quotes the sophist Bion, who said that the growth of hair "frees their lovers from a beautiful tyranny."[9] The accusation of maintaining sexual relationships with adult males was used as a slur on one's enemies in the manner of Theopompos, who said of the Macedonians that they indulge in anal sex with males, "adding the shocking fact that they do it even after their beards have grown."[10] To continue a love relationship when the first down was already spreading from the temples had the seductive quality of being close to transgressing the limit of what custom permitted.[11] In fact, all adult lovers in Greek vase paintings are bearded, while all boys and youths are entirely beardless, as are all archaic Greek youths portrayed in sculpture.[12]

The implication of this cultural pattern associated with beard growth is the late age at which facial hair must have sprouted. If the male beard had grown as early as it does today, when most boys shave by age 17 and many already at 16, very few young males would have been available for pursuit by homosexual adults. Young adolescents were not accessible in large numbers, because—as both Plato and Xenophon mention—boys were guarded by their parents, and their tutors were charged with shielding them from the approaches of older men. Boys also discouraged one another from listening to men who displayed a sexual interest in them.[13] Love relationships confined to the beardless years of young males would have been virtually impossible had not those years included a large pool of older adolescents and ephebes.

This situation does not seem to have changed much in the succeeding centuries. Contempt for any male adult who permitted himself to be used as a passive partner in a homosexual relationship remained a cultural pattern of Mediterranean countries. Still in the cosmopolitan culture of Muslim Spain,

[8] Kenneth James Dover, *Greek Homosexuality* (1978: New York, 1980), 58.
[9] Plutarch, *Moralia, 770B–C (Loeb Classical Library, vol. 9; Cambridge, Mass., 1961).*
[10] *Dover, Greek Homosexuality,* 194.
[11] *Ibid.,* 144, 172.
[12] *Ibid.,* illustrations following p. 118; Gisela M. A. Richter, *Kouroi: Archaic Greek Youths,* 3d ed. (New York, 1970).
[13] Dover, *Greek Homosexuality,* 82–83, 87–89.

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homosexual poets adored adolescent boys, "whose cheeks are like white marble," and they were apprehensive of the appearance of down announcing approaching adulthood.[14] Even in Renaissance times, when homosexuality had been driven underground, Giorgio Vasari wrote of the painter Giovannantonio da Verzelli (1477–1549), "he always had boys and beardless youths about him of whom he was inordinately fond: This earned him the name of Sodoma."[15] And the Renaissance's most graceful statue of a young man, David, is beardless.

In twelfth-century French aristocratic society, a youth of 18 or 19 years, who usually had not completed his training as a knight, was called *adolescens imberbis,* a youth without a beard.[16] In medieval times a beard could even be used as an indicator of legal majority, if the chronological age of a man was in doubt. The *Sachsenspiegel,* a medieval German law book (*ca.* 1221–24), gives the following criterion for adult status: "If the age of a man is unknown, he shall be regarded of adult age, if he has hair in his beard, down below, and under both arms." If this rule were applied to the present generation, the majority of boys 16 and 17 years old would qualify as adults. This, however, was not intended by the *Sachsenspiegel,* where it is stated in the same section that a man has attained majority when he has passed his twenty-first year.[17] "Beardlessness," to be sure, is a vague characterization, because male facial hair grows to fullness only in the course of several years, varying considerably among individuals because of genetic, nutritional, and health factors. An incipient beard, however, not yet worth clipping, was not regarded as a sign of maturity, either in medieval or in early modern times.[18] Hans von Schweinichen (1552–1616), a Silesian nobleman, quotes in his autobiography a saying according to which the best times to marry are the four years before and the four years after clipping one's beard,[19] which seems to imply that in the sixteenth century most males would not clip their beards for the first time until their mid-twenties. In the city of Cologne the townsmen were

[14] J. N. Adams, *The Latin Sexual Vocabulary* (London, 1982), 145–59. On Arabic, Hebrew, and Christian homosexual poetry and practice, see Norman Roth, " 'Deal Gently with the Young Man': Love of Boys in Medieval Hebrew Poetry of Spain," *Speculum,* 57:1 (1982), 20–51; John Boswell, *Christianity, Social Tolerance, and Homosexuality: Gay People in Western Europe from the Beginning of the Christian Era to the Fourteenth Century* (Chicago, 1980).

[15] Giorgio Vasari, *The Lives of the Painters, Sculptors, and Architects,* A. B. Hinds, trans., (London, 1963), 285.

[16] Georges Duby, "Northwest France: The 'Young' in Twelfth-Century Aristocratic Society," in *Social Historians in Contemporary France: Essays from the Annales,* Staff of the *Annales,* Paris, ed. and trans. (New York, 1972), 87.

[17] *Sachsenspiegel (Landrecht),* J. Weiske, ed.; R. Hildebrand, rev.; tenth unchanged edition (Leipzig, 1919), bk. I, art. 42, par. 1.

[18] Jakob and Wilhelm Grimm, *Deutsches Wörterbuch* (Leipzig, 1854), lists several condescending expressions for a budding beard, such as *Flaumbart, Gauchbart, Milchhaar,* and *Milchbart.*

[19] Johann Gustav Büsching, ed., *Begebenheiten des schlesischen Ritters Hans von Schweinichen, von ihm selbst aufgesetzt* (Breslau, 1821), 99.

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counseled against early marriage with the proverb, "At 20 a youth, at 30 a man; and marriage without a beard is unseemly."[20]

EARLY MODERN TIMES

With the autobiographic material of the sixteenth to the eighteenth centuries information on beard growth becomes more specific. Although the following biographical accounts do not permit a statistical presentation, they amount to a prosopographical study showing that the facial hair of upper- and middle-class males consistently matured several years later in the life course than it does in the twentieth century.

Benvenuto Cellini (1500–71) permits us to date the growth of his beard exactly and reliably since his recollection was tied to events of momentous importance to himself. Having fought a dual at the age of 23, Cellini was no longer safe in Florence, and he prepared to flee to Rome in the guise of a friar. To make certain that he looked like a monk, he asked someone to "remove a few hairs from my chin, which were the first down of my manhood." On the way to Rome, he continues, "when we passed the Paglia, we met a courier carrying the news [of the election] of the new Pope, Clement VII," who later became his employer and was indeed elected in 1523, when Cellini was 23 years old.[21] The slight beard or "few hairs" on his chin would normally be expected today in boys of 16 or 17 years, that is, six or seven years younger.

Another well-authenticated report is contained in the diary of Felix Platter (1536–1614), who later became a famous Swiss physician. He was 19 years and 9 months old when he and a fellow student obtained a nostrum to promote beard growth. "We were still bare around the mouth and would have liked thereby to improve our appearances. We applied it repeatedly at night to our faces and messed up the pillows; sometimes we had ourselves shaved with a razor around the mouth, but it did not help any way" (my translation). Some time later, in a letter to his father, twenty-year-old Felix expressed his apprehension that in the following year he might not be licensed by the board of physicians in Basel because he was still beardless and looked too youthful. In fact, he was permitted to start his practice, apparently at 21 years of age, even though he still lacked the facial mark of male maturity, so important in his time to convey the image of medical credibility. Later portraits represent him as a respected physican with a mustache and a well-trimmed beard.[22]

[20] "20 Jahr ein Jüngling, 30 Jahr ein Mann, und eine Heirat ohne Bart hat keine Art." Quoted by Joseph Klersch, *Volkstum und Volksleben in Köln* (Cologne, 1967), II, 113.

[21] Benvenuto Cellini, *The Life of Benvenuto Cellini: Written by Himself,* John Addington Symonds, trans. and ed. (New York, n.d.), bk.I, chs. 18–19. See also bk.I, chp. 47, where "young fellows of the highest daring . . . all four of them without a beard" (p. 103) attempt to fight a police squad.

[22] Felix Platter, *Tagebuch (Lebensbeschreibung) 1536–1567,* Valentin Lötscher, ed. (Basel and Stuttgart, 1976), 248 (the date for the quotation is 14 July 1556). This passage can also be

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Shakespeare and his public were obviously familiar with the late appearance of facial hair in young adults. King John scorns the young French dauphin, who was leading an army against him, with the rhetorical question: "Shall a beardless boy, a cockrelsilken wanton [effeminate weakling] brave [defy] our fields?" And Cleopatra refers with contempt to "the scarce-bearded Caesar."[23] This was arrogant boasting on the stage. In social life, a young man's role depended on his status and ability. As Philippe Ariès pointed out, "those beardless men with soft features . . . behaved like fully grown men, fighting and giving orders."[24]

For the early seventeenth century, Rembrandt's beard growth is particularly well documented. Constantijn Huygens, a distinguished Dutch civil servant, poet, musician, and art connoisseur, commented on the appearance of Rembrandt (1606–69) and his friend Jan Lievensz (1607–74), with whom he shared a studio in Leiden. Speaking about promising young people in Leiden—in the year 1626 when Rembrandt was 21 and his friend 20 years of age—he wrote: "Among the young men of my acquaintance, one is the son of an embroiderer, a man of the common people; the other is the son of a miller, but himself not the average run-of-the-mill. It is amazing to see two prodigies of originality and ingenuity descend from such lowbrow [fathers]. . . . The first, of whom I mentioned that he is the son of an embroiderer, is called Jan Lievensz; the other, whose family background I traced to a mill, is named Rembrandt. Both are still beardless, and in their physical and facial appearance resemble boys rather than young men."[25] Huygens's report is supported by pictorial evidence. The two earliest self-portraits proper, one small panel at Kassel probably executed shortly before 1629 and a rather similar but more skillful picture now in the Alte Pinakothek at Munich, show Rembrandt at 23 still beardless.[26] From the somewhat confusing evidence of the exaggerated expressions in Rembrandt's self-portraits dated 1629 or ascribed to *ca.* 1629 by art historians—in which he experimented with facial expressions, grimacing or embellishing his face—it appears that his facial hair began to grow in 1629. At 24 years of age, in 1630, he painted a self-portrait in a mood of self-reflection, showing him with the typical beard of a young man, the mustache not yet fully

found in the abbreviated English translation *Beloved Son, Felix: The Journal of Felix Platter, a Medical Student in Montpelier in the Sixteenth Century,* Seán Jennett, trans. and introd. (London, [*ca.* 1961]), 118. See *Tagebuch,* facing p. 128, for portrait of Felix at the age of 28 years, and for later portraits, plate nos. 49, 52, 53, and following p. 536.

[23] *King John,* act 5, sc. 1, line 69; *Antony and Cleopatra,* act 1, sc. 1, line 21. Hirsutism by itself, however, cannot be considered necessarily indicative of virility.

[24] Philippe Ariès, *Centuries of Childhood,* Robert Baldick, trans. (London, 1962), 29.

[25] Constantijn Huygens, "Fragment eener Autobiographie van Constantijn Huygens," contributed by Dr. J. A. Worp, in Historisch Genootschap, Utrecht, *Bijdragen en Mededeelingen,* 18 (1897), 76–77. I owe this reference to Alice Binion of Boston University.

[26] Christopher Wright, *Rembrandt: Self-Portraits* (New York, 1982), plate 8, also p. 19, fig. 3. The portraits of Rembrandt by Jan Lievensz at the Rijksmuseum, Amsterdam, show him without a beard.

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covering the midline above the upper lip and with a thin but definite beard covering his cheeks and chin.[27] Thus, in facial-hair development Rembrandt was at least six years behind the majority of young males in the second half of the twentieth century.

Louis XIII (1601–43) is an example of late beard development in an upper-class male. His physician, Jean Héroard, who had watched over him during his childhood and youth, wrote in his journal on 1 August 1624 that the king at the age of 23 had had himself shaved for the first time, even though his facial hair was extremely slight. Since Louis's beard developed as late as that of Rembrandt but was apparently of lower density and retarded linear growth, it is possible that he not only had a late puberty but, as J. M. Tanner suggests, may have been suffering from a disease.[28] But another man born in the seventeenth century, whose beard grew even more slowly, was the Norwegian-Danish author Ludvig Holberg (1684–1754). He mentioned in his autobiography that he had clipped his beard only a few times when he was 26 years old; his facial hair was light in color and of a fine texture. He was a man of youthful appearance, but not known to be in any way physically debilitated.[29]

Among autobiographers of the eighteenth century, Casanova (1725–98) has dated his beard growth with considerable exactness. He had developed a down at the age of 17 which, he reported, betrayed his youthfulness and prevented his placement in a class of adults, as he desired, when he arrived at a seminary. It was about a year later that his pilosity again became a problem for him. He had just made his way to Rome, where a helpful clergyman planned to introduce him to an influential cardinal who could be expected to find a position for him in the papal administration. Casanova intended to make himself presentable for this important interview, and, as he later recalled, it was on the first day of October 1743 "that I finally made up my mind to be shaved. My down had become a beard. I felt that I must begin to renounce certain privileges of adolescence."[30] On that day, when Casanova was in possession of a shavable beard, he was exactly 18 years and 6 months old; this means that he was several years younger than any of the individuals whose facial-hair development has been dated above. To have a down at 17.5 years and a beard that needed shaving at 18.5 years would be late today, but was relatively early for the mid-eighteenth century.

[27] Formerly in the Loudon collection at Aerdenhout and now with G. Cramer, Oude Kunst, in The Hague. Reproduction in Christopher Wright, *Rembrandt: Self-Portraits* (New York, 1982), plate 17.

[28] Journal de Jean Héroard sur l'enfance et jeunesse de Louis XIII (1601–1628) (Paris, 1868), II, 297; J. M. Tanner, *A History of the Study of Human Growth* (New York, 1981), 22.

[29] Ludvig Holberg, *Nachricht von meinem Leben in drei Briefen an einen vornehmen Herrn* (Anon. trans. of *Epistolae ad virum perillustrem* (1745)) (Munich, 1982), 40.

[30] Giacomo Casanova, Chevalier de Saingalt, *History of My Life*, Willard R. Trask, trans. (New York, 1966), I, 166, 249–50, 260.

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The early onset of Casanova's beard growth calls for closer scrutiny. In the first place, a racial factor as a possible cause can largely be eliminated. It is true that Italian males—and especially southern Italians—as a group exceed northern Europeans in hairiness.[31] This characteristic, however, does not imply an earlier age of beard growth. The latter varies in the same context as does menarche, which moves everywhere in Europe and America predominantly in concert with nutritional and other socioeconomic factors. It is safer to assume that Casanova's early maturation was shared by those of his contemporaries who were favorably enough situated to benefit from economic advantages. It is also of interest in this connection that Casanova mentions in his autobiography that as a boy he was tall for his age. The finding that "a child's growth rate reflects, better than any other single index, his state of health and nutrition" suggests the likelihood that he matured physiologically earlier than did the average of his contemporaries.[32]

In the last half, and more generally in the last third, of the eighteenth century secondary sex characteristics appeared earlier in the male life course than they had done in the preceding period. This occurred when the upper and middle classes benefited from improvements in diet, housing conditions, and hygiene that were not yet shared by the poor and the majority of rural people. While health and longevity of the affluent part of the population improved in the eighteenth and early nineteenth centuries, the poor did not yet profit from this advance and in some areas of Western and Central Europe even suffered a decline in living standards. As a result there were wide class differences in the age at maturation. That working-class and especially rural people attained their sexual faculties several years later than "their betters" was already observed in the seventeenth and eighteenth centuries. It was also noticed that indigent students developed beards later than their better-off colleagues. C. F. Bahrdt (1741–92) remembered that he was still "a beardless youth," when he was promoted to the rank of magister. He was 19, that is, about the same age when Casanova already had to have his beard shaved off.[33] At the age of 19 also, Karl Philipp Moritz (1756–93) had a smaller trace of a beard on his chin than had many of his fellow students, and he was therefore selected to take a girl's role in a play. Moritz had grown up under severe economic deprivation and his poor nutritional history can be assumed to have retarded his physical maturation.[34] Likewise, Magister Laukhard (1757–1822) re-

[31] C. H. Danforth and Mildred Trotter, "The Distribution of Body Hair in White Subjects," *American Journal of Physical Anthropology,* 5:3 (1921), 259–65.

[32] Casanova, *History,* I, 166; P. B. Eveleth and J. M. Tanner, *Worldwide Variation in Human Growth* (Cambridge, 1976), 1.

[33] C. F. Bahrdt, *Geschichte seines Lebens, seiner Meinungen und Schicksale,* 4 vols. (Berlin, 1790–1791), I, 227–38.

[34] Karl Philipp Moritz, *Anton Reiser: Ein psychologischer Roman* (Moritz's autobiography) (1785–1790; Leipzig, 1959), 400, 408.

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ported that, in theatrical performances by university students in Giessen, female roles were assigned to "*milchbärtige Studenten*"—students who, at the end of their teens or in their early twenties, had no more than peach fuzz on their upper lips—leaving the male roles to young men with more masculine facial features.[35] It appears that in the late eighteenth century beard growth still occurred in general about two to three years later in life than it does today. Thus it was in no way unusual that Baron de Marbot (1782–1854) had not yet the slightest trace of a mustache when he joined the Hussars at 17 years of age. He recalls in his *Mémoires* that his colonel took a pot of blacking (*un pot de cire noire*) and with a finger painted a handlebar mustache on his face, so that he would not spoil the martial appearance of his squadron.[36]

THE NINETEENTH AND TWENTIETH CENTURIES

Around 1800, for the first time, it became possible for young men in their late teens or early twenties to shock their contemporaries by growing full beards. Young males have been prone throughout history to excel in unconventional manners, from eccentric garb to offensive or even self-destructive behavior. Sixteenth-century dandies stressed their individuality by wearing long hair. It was a novelty, however, when at the very end of the eighteenth century a sect of young French artists emerged who advertised their nonconformist ways by flaunting beards, which earned them the name *Barbus,* the bearded ones. Their leader, Maurice Quay, was then 19 or 20 years old; he died of consumption in 1804, at 25.[37]

Count Boris Uxkull (1793–1870) sported a mustache at 20 years of age.[38] In the first half of the nineteenth century, most males of the upper and middle classes appear to have had no difficulty growing beards or sideburns at about the ages of 19 or 20, although, according to Richard Corson, some young men were unable to do so as early as they desired and resorted to wearing false ones for dances and other social occasions. The wearing of beards increased after 1820 but was still considered somewhat provocative or eccentric. In an inordinate popular reaction in small-town Fitchburg, Massachusetts, one Joseph Palmer was persecuted and imprisoned in 1830 for wearing a full beard. In Germany, Schopenhauer affirmed the conservative conviction that a full beard is barbaric and shameful, as it represents "a sexual characteristic

[35] Friedrich Christian Laukhard, *Leben und Schicksale* (Halle, 1792–1802), I, ch. 21.

[36] Jean Baptiste Antoine Marcellin, Baron de Marbot, *Mémoires du Général Baron de Marbot,* 17th ed. (Paris, 1892), I, 62.

[37] George Levitine, *The Dawn of Bohemianism: The Barbu Rebellion and Primitivisim in Neoclassical France* (University Park, Pa., 1978).

[38] Boris Uxkull, *Arms and the Woman: The Diaries of Baron Boris Uxkull, 1812–1819,* Joel Carmichael, trans. (London, 1966), 129.

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right in the middle of the face."[39] It was with a note of defiance to established authority that young bohemian artists and political "troublemakers" (*bousingots*) made symbolic use of their ability to raise luxuriant facial hair. Thackeray wrote from Paris in 1840: "As for the beards, there is no end of them; all my friends the artists have beards under all sorts of caps."[40] Karl Marx (1818–83), as a student in Bonn, had a conspicuous dark beard when he was not yet 18 years old, a harbinger of the well-known full beard and mane he wore in his later years.[41]

Mustaches and beards increased in popularity everywhere after 1840, although in Germany as late as the 1860s it was still somewhat daring in conservative circles to have a full beard because it was considered "democratic."[42] The changes in fashion of beard display, trimming, and shaving have been well researched before, unlike the biological and nutritional factors in the history of beard growth, which are the subject of this essay. It is noteworthy, however, that the full beard, "this imposing feature of a man's countenance," reached its height of popularity among middle- and upper-class males between 1855 and 1910. In another reversal of fashion, beards came increasingly to be replaced by mustaches, and finally again by clean-shaven faces.[43] It was in the 1960s, when the overwhelming majority of adult men had become accustomed to shave off in a daily ritual every trace of facial hair, that many among the young took to sporting beards. In contrast to their traditional connotation of age and authority, beards became a symbol of youth or a youthful disposition—a reversal that would have been biologically impossible in the past.

CONCLUSION

Compared with recent data, ancient, medieval, and early modern evidence is sporadic and limited. It reflects neither socioeconomic differences nor tempo-

[39] Richard Corson, *Fashions in Hair,* rev. ed. (London, 1971), 398, 402–3, and 423–61 (plates); Arnold Hauser, *The Social History of Art,* Stanley Godman, trans. (New York, n.d.), III, 194; Helmut Kreuzer, *Die Boheme* (Stuttgart, 1968), 49, 168.

[40] William Makepeace Thackeray, *The Paris Sketch Book by Mr. M. A. Titmarsh* (1840; New York, 1911), 55–56.

[41] Karl Marx, born on 5 May 1818, left the University of Bonn in March 1836 and cannot have been more than 17 years and 10 months old when his student picture was made. Marx was genetically more hirsute than most of his contemporaries.

[42] Corson, *Fashions,* 403; Walter E. Houghton, *The Victorian Frame of Mind 1830–1870* (New Haven, 1957), 202; Friedrich Meinecke, *Autobiographische Schriften,* Vol. VIII of *Werke* (Stuttgart, 1969), 21.

[43] Reginald Reynolds, *Beards: Their Social Standing, Religious Involvements, Decorative Possibilities, and Value in Offence and Defence through the Ages* (Garden City, N.Y., 1949), 281. The mustache and goatee were the Parisian style from the 1860s to the 1880s. By the 1920s a half-way mark had been reached when 50 percent of the British men represented in the *Illustrated London News* were clean-shaven. Dwight E. Robinson, "Fashions in Shaving and Trimming the Beard: The Men of the *Illustrated London News,* 1842–1972," *American Journal of Sociology,* 81:5 (1975–76), 1133–41.

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rary fluctuations. Yet despite this lack of precision the cumulative weight of the findings makes it hard to doubt that human biological maturation occurred at a considerably earlier age in the nineteenth and twentieth centuries than at any time in the historical past. Evidence of voice change points in the same direction.[44] The result of the present study supports those authors who have concluded that human biological development has accelerated in recent centuries by several years.[45]

A hoary tradition, originating in ancient times, associated age 14 with the arrival of puberty, at least for boys; girls were declared to be ready for marriage at 12 or at least between 12 and 14 years of age. Accordingly, 12 years for girls and 14 years for boys were set as the minimum ages for legal marriage in the laws of the Roman Empire and of the Christian church, and a similar directive appears in the Mishna as interpreted by Maimonides. The early pubescence implied by these laws was accepted by the majority of authors to the eighteenth century and has been defended by some even recently.[46] In fact, the claims of early pubescence and early menarche—even earlier than in average twentieth-century clinical experience—must be attributed to an ancient cultural pattern that included, first, typological constructions of stages of life under the compulsion of a number mysticism, the hebdomad idea, which gave preference to seven and multiples of seven; second, the legal fiction that the widespread practice of child marriage was justified by the approach of puberty, carelessly defined as the eruption of some pubic hairs, or by the assumption of menarche ideal-typically at age 12.

The gradual change in the advent of facial hair over historical time represents one aspect of the fact that man has changed biologically. This change has occurred largely over the past 250 years and has been accelerating rapidly since World War II. The point at which the growth of facial hair shifts from short vellus, which is barely noticeable by visual inspection, to terminal hair is clearly dependent on the stage of endocrine development. It is part of the sequence of events constituting puberty and adolescent growth. Therefore, what is known about the onset of beard growth in the past can be used as proxy for unavailable data on sexual maturation and, specifically, on testosterone circulation in the blood.

In the individual male the events of pubertal development come in a certain sequence; and while this sequence is not rigidly fixed, it is experienced with only minor variations by the majority of youths. The onset of facial-hair

[44] Herbert Moller, "Voice Change in Human Biological Development," *Journal of Interdisciplinary History,* 16:2 (1985–86), 239–53.

[45] Tanner, *History,* chs. 1, 2; Eyben, "Antiquity's View of Puberty," 693.

[46] Vern L. Bullough, "Age at Menarche: A Misunderstanding," *Science,* 213 (1981), 365–66; and rejoinders by J. M. Tanner and Peter T. Ellison, "Menarcheal Age," *Science,* 214 (1981), 604.

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growth occurs at about the same time as that of axillary hair, or just a few months later. This is a relatively late stage of pubertal development, about three years after prostatic activity makes seminal emission possible, but is still half a year or more before the production of mature live spermatozoa is likely to begin. For our distant ancestors, therefore, teen-age fatherhood was a rare biological possibility, certainly more rare than teen-age conception, since girls mature about two years earlier than boys. This has changed since the eighteenth century, at first slowly, but gathering speed from one generation to the next and precipitously so since about 1950. Today, most boys of 15 or 16 years of age, of average development, have functioning procreative capabilities, though there are apparently considerable individual differences, and some early maturers have been found to reach this stage one or more years earlier, while some late maturers do so in their late teens. It should be mentioned that this observation does not imply that in the past, before the eighteenth century, preadolescents were incapable of experiencing love and sexual relationships. Male and female children are not sexless. Sexuality begins in the fetal period, and little boys are capable of erection, masturbation, and orgasm, but not of seminal production and emission. Preadolescent love was glorified in the great romances of world literature and is known also from autobiographies as well as from recent research; but these boy lovers were not likely to have reached the stage of spermatogenesis.[47]

Whether the majority of males matures a few years earlier or later might be considered of relatively minor importance; but more is involved in this aspect of modern life than the conduct of sexually precocious teen-agers. In their study of twelve thousand males, Alfred Kinsey and his associates discovered that earlier onset of pubertal maturation is associated with higher frequencies of sexual activities of all kinds. Boys who become adolescent earlier go more deliberately after their first "outlet" than late-maturing males, and they consistently remain sexually more active throughout their lives.[48] This straightforward inference has far-reaching consequences for modern cultural history, since the entire adult male population is involved. It accounts, at least in part, for the prominent place of sex and love in the consciousness of the past two to three centuries and the related manifestations in the youth culture, in family relations, and in literature and the media. These cultural strands are not easy to unravel. The affective closeness of the modern family, the high incidence of illegitimacy and premarital sexual activity, and the increase in sexual pathologies, which became prominent and coincided with the accelerated biological development, were not specifically attributable to it, but were

[47] Floyd M. Martinson, *Infant and Child Sexuality: A Sociological Perspective* (St. Peter, Minn., 1973); Larry L. Constantine and Floyd M. Martinson, eds., *Children and Sex: New Findings, New Perspectives* (Boston, 1981), 23–93.

[48] Alfred C. Kinsey, W. B. Pomeroy, and C. E. Martin, *Sexual Behavior in the Human Male* (Philadelphia, 1948), 301–26.

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modifications of older cultural patterns. Furthermore, the biological change was most likely not an independent variable, since exposure to a cultural environment that encourages sexual and other gratification can, in a feedback process, stimulate endocrine development. Cultural change is participating in biological adaptation.

The causation of changes in beard growth—like that of other changes in somatic maturation over historical time—is usually ascribed to nutritional factors. While there is considerable justification for this view, the provision of ample food supplies has not by itself led to the great modern physiological transformations. If plentiful nutrients were the only or the clearly predominant cause of healthy growth, the late onset of beard growth in ancient and medieval times would be hard to explain, since virtually all our data come from the privileged classes. It can be taken for granted that these young males did not suffer from lack of food at any time in their lives. How to account for the retardation of their beard growth—a retardation relative to their genetic potential—poses an important question for the history of human physiological development. While an adequate discussion of this problem goes beyond the scope of this article, it can be clarified in outline in light of recent research.

To begin with, it might be pointed out that the evidence from beard growth is not unique; there is a variety of data showing that the somatic development of historical populations had always been arrested before reaching what appear to be the genetic limits of human development. If we take mortality as a comprehensive indicator of general health, it appears that from prehistoric times to the seventeenth century no population ever approached the life expectancy of modern developed countries. Beginning in the early eighteenth century, life expectancy at 25 years of age steadily increased for the upper classes. For the general population of economically developing countries, life expectancy at birth entered on a course of lasting advance after 1820; about 1880 it was higher than it had ever been in history; and today the average length of life is about twice what it was in the seventeenth century.

It is of course questionable whether the diet of even the best-fed people of past centuries would today be considered adequate in its balance of nutrients. The lack of single vitamins or trace elements or the ingestion of unsuspected fungi or toxic substances could make that diet inferior to a balanced regimen of minimum-subsistence calories. It must be asked, furthermore, to what extent the nutritive value of an historical diet was rendered inadequate by demands on the body to fight infections, a situation known today in third-world countries, but also from European history. Quantitative fifteenth-century evidence on the monks of the Benedictine priory of Christ Church, Canterbury, shows surprisingly high mortality, even though the monks were sumptuously nourished and lived in a nonstressful environment.[49]

[49] John Hatcher, "Mortality in the Fifteenth Century: Some New Evidence," *Economic History Review,* 2d ser., 39:1 (1986), 19–38.

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Agricultural productivity advanced greatly from the seventeenth to the twentieth century as a result of transformed techniques and the introduction of new food plants. Nutritional improvement is almost certainly the most important factor in the lengthening life expectancy, as it is in the increasingly early advent of sexual maturation; but it is not the sole key. Among the other variables that account for progress in the general health of a population are improvements in the prevailing environmental, social, and cultural elements such as clothing, housing, sewage treatment, crowding causing exposure to disease vectors, health services and personal hygiene, customs of food preparation and cooking, and behavioral habits. The term *modernization* may serve as a common denominator for this synergistic package.[50]

[50] John D. Post, *Food Shortage, Climatic Variability, and Epidemic Disease in Preindustrial Europe: The Mortality Peak in the Early 1740s* (Ithaca, 1985); Michael W. Flinn, The European Demographic System, 1500–1820 (Baltimore, 1981), 92–101; *The Journal of Interdisciplinary History,* 14:2 (Autumn 1983), an issue devoted to food production and consumption patterns in history. In the introductory article, Robert I. Rotberg points to the variety of views, with some authors holding positions that are "diametrically opposed" to those of others, which reflects "the vast inadequacy of nearly all existing understandings of the influence of nutrition in past human societies."

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