**Ages and ages:**

**The multiplication of children’s ‘ages’ in early twentieth-century child psychology.**

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**Abstract:**

This paper explores the trend, between 1905 and the late 1920s in UK and US child psychology, of ‘discovering’, labelling and calculating different ‘ages’ in children. Those new ‘ages’ – from mental to emotional, social, anatomical ages, and more – were understood as either replacing, or meaningfully related to, chronological age. The most famous, mental age, ‘invented’ by Alfred Binet in the first decade of the century, was instrumental in early intelligence testing. Anatomical age triggered great interest until the 1930s, with many psychologists suggesting that physical development provided a more reliable inkling of which grade children should be in than chronological age. Those ages were calculated with great precision, and educational recommendations began to be made on their basis. This article maps this psychological and educational trend, and suggests that it cultivated a vision of children as developmentally erratic, worthy of intense scientific attention, and enticingly *puzzling* for researchers.

**Keywords:**

child psychology, intelligence testing, mental age, development, age, growth

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‘If we are going to speak in terms of age, let us use the ages which really apply.’

In the first three decades of the twentieth century, a new trend spread like wildfire in Anglophone child psychology: that of identifying and measuring a multiplicity of different ‘ages’ in children; or, to be more precise, that of converting into years of age, thus making them immediately comparable with one another, measurements of different aspects of children’s development.[[1]](#footnote-1) The practice began in the 1900s; its most famous manifestation was Alfred Binet’s theorisation of ‘mental age’, accompanied by the suggestion that it may diverge significantly from chronological age, and that their relation was indicative of intelligence level. Over the next couple of decades, more and more ‘ages’ – anatomical, social or emotional, among others – were ‘discovered’, and declared to be quasi-independent from chronological age. Soon, those ages were calculated with increasing precision, and given significant weight in proposed reforms to education. So trendy was this practice that a joke soon began to circulate of a little boy who, having been asked how old he was, replied:

That is a difficult question… The latest personal survey available shows my psychological age to be 12, my moral age 4, my anatomical age 7, and my physiological age 6. I suppose, however, that you refer to my chronological age, which is 8. That is so old-fashioned that I seldom think of it any more.[[2]](#footnote-2)

Those many new ages of childhood were not just more fashionable; they became for a while the ages ‘which really applied’, to echo the epigraph, in contradistinction to chronological age. Unlike chronological age, they were not simply deduced from a birth certificate, but determined by the instruments of psychologists and physiologists. Unlike chronological age, they were perceived as unpredictable and fluid, and thus potentially at odds with one another and with chronological age itself.

This ‘discovery’ triggered anxiety about children whose multiple ‘ages’ were found to be dissimilar, and debates started as to the best ways of re-harmonising those children at clinical, educational and policy levels. The exercise was fraught with risk: school acceleration for the purpose of aligning mental age with pedagogical age might cause, for instance, new misalignments between the child’s emotional or social ages and those of his or her peers. The intense focus on these ages and the concern for internal harmony conjured up a vision of the child as a developmentally erratic being – a polychronous, complex mechanism, whose fine-tuning required scientific precision.

This article both maps and theorises this brief era in child psychology. I first discuss the rise of these ‘new’ ages, beginning with mental age, whose emergence was connected to intelligence testing; I then explore the proliferation of other ages identified in psychological literature of the same time. Such literature, I next suggest, presents ‘normality’ – synchronicity with self and peers – as the goal of education; but it also glorifies mismatches between chronological and other ages, especially when they are indicative of precocity. Child psychology, I argue, established itself as a kind of horology of childhood, able both to measure precisely the hectic times of child development, and to adjust them to individual children as well as to social and educational imperatives. To an extent, *young age* itself, in its complexities and incoherencies, became an issue to be solved; and age emerged as the central and distinctive parameter, measure, and problem of childhood.

The regulatory power of age norms in recent history has been well-analysed,[[3]](#footnote-3) and the ‘age craze’ I am looking at here certainly partakes in the construction of these norms. However, in this article I am also, perhaps more candidly, interested in the sheer *puzzlement* of psychologists faced with the sometimes insoluble problems that their discoveries caused. Having abandoned chronological age as gold standard, they were left with many slippery, relative ages, expressing in sometimes confusing ways different measurements of a child’s development. The child appeared throughout these works as a fragile, highly sensitive mechanism whose different parts were liable to jam or to become dangerously misaligned. The challenge of readjusting this capricious being was as beguiling and frustrating as toying with a Rubik’s Cube; and in many ways, as this essay hints, psychologists might have enjoyed the scrambling as much as the solving.

*‘He is a multiple-aged creature’: From mental age to a proliferation of ages*

Child psychology in the nineteenth century had put forward a relatively rigid vision of child development, characterised by a Rousseauist emphasis on natural stages of growth. The child of Victorian paediatrics had been thought of as having ‘its own laws of slow and gradual development’,[[4]](#footnote-4) not to be hurried; child prodigies were an ambiguous source of fascination, and precocity was distrusted. Furthermore, Sally Shuttleworth notes, Victorian definitions of childhood in relation to age were ‘elastic’ and vague,[[5]](#footnote-5) with eleven, fourteen, eighteen, twenty-five or even thirty years old being pinpointed as the end of childhood or youth. Those three aspects of early child psychology – child development understood as, ideally, natural and predictable; a distaste for precocity; and a definition of childhood imprecisely connected to age – were questioned in the early decades of the twentieth century. Psychologists then began to conceptualise child development as highly individual, potentially unpredictable, and characterised by possible mismatches between an ever-increasing number of age subdivisions.

Mental age was the most prominent of the new ages ‘discovered’ by psychology in the early twentieth century. The concept was ‘invented’ around 1905; or, rather, it was then that the notion of a difference between mental development and physical development became formally integrated into psychological theory, with the former called ‘mental age’. The discovery is generally attributed to French psychologist Alfred Binet, who had been mandated by the French government to improve educational practice for children with learning difficulties. Binet, with the help of medical student Théodore Simon, designed in the early years of the twentieth century an age-specific test intended to measure the cognitive abilities of children, the Binet-Simon scale of 1905 (revised in 1908). Binet’s major innovations in his approach were twofold: firstly, the scale assessed different cognitive skills, using a pluralistic conception of intelligence. Secondly, the scale did away with any gold standard of intelligence; instead, the standard against which a child’s level of intelligence was tested was their own chronological age. The scale was made up of clusters of tests of increasing difficulty; having sampled a large number of children of various ages, Binet established the average chronological age at which subjects successfully completed each cluster of tests, and adapted his scales so that each additional cluster of tests completed corresponded to an extra year of age. The last successfully completed cluster was understood to indicate the ‘mental age’ of the individual, and the final score was yielded by the relation of the subject’s chronological age to his or her identified mental age, in the form of the following equation: mental age/ chronological age x 100.

Meaningless on their own, ‘mental age’ and ‘chronological age’ became significant when measured against each other. A child whose mental age was found to be equal to his chronological age would obtain a score of 100; a seven-year-old child whose mental age was calculated to be that of a fourteen-year-old would yield a result of 200. In effect, therefore, early Intelligence Quotient tests[[6]](#footnote-6) were primarily an assessment of what could be called one’s degree of internal harmony or, more specifically, of self-synchronicity; on either side of the average, ‘retarded’ or ‘precocious’ children exhibited atypical development to various degrees. The average was obtained through sampling a large amount of children from an age group; the mental age/ life age split was thus, on a basic level, no more than a comparison between individuals. However, this comparison was somewhat eclipsed rhetorically; the two potentially jarring ages became in effect a double ‘possession’ of the individual. The subject of IQ testing was talked of as ‘being’, or ‘having’, two ages at once; and the relationship between those two ages yielded a statement as to the individual’s intrinsic ability.[[7]](#footnote-7)

This vision of intelligence appeared immediately appealing to psychologists and educators, and the Binet-Simon scale shot to fame. Instrumental to its introduction to the USA was American psychologist Lewis Terman, who adapted it for an American audience into the Stanford-Binet scale. Terman’s landmark handbook *The Measurement of Intelligence* stresses the ground-breaking nature of the ‘invention’ of the mental age/ chronological age equation by Binet, calling it ‘the most important [discovery] in all the history of psychology’.[[8]](#footnote-8) One great attraction of this device for Terman appears to be its straightforwardness. The calculation is, he asserts, ‘simplicity itself’;[[9]](#footnote-9) but more importantly perhaps, the concept is also *rhetorically* straightforward*.* It is, Terman says, so self-evident that anyone can understand it:

This plan has the great advantage of giving us standards which are easily grasped. To say, for illustration, that a given subject has a grade of intelligence equal to that of the average child of 8 years is a statement whose general import does not need to be explained. … Every one knows what is meant by the term 8-year mentality, 4-year mentality, etc., even if he is not able to define these grades of intelligence in psychological terms.[[10]](#footnote-10)

Terman further marvels, ‘Why should a device so simple have waited so long for a discoverer? We do not know. It is of a class with many other unaccountable mysteries in the development of scientific method’.[[11]](#footnote-11) There is indeed something undeniably seductive about the idea that one’s number of years on the planet is independent or semi-independent from one’s mental development; and psychology presented itself as able to unearth such discrepancies, finding out the ‘true’ age of the individual beyond the number of candles on their birthday cake.

Mental age was not the only contribution, in psychological literature of the early twentieth century, to the idea that individuals – specifically, children – may ‘have’ several ages at once; we can truly talk of a proliferation of different identified ‘ages’ from the late 1900s to the 1920s. In *Brightness and Dullness in Children*, published in 1919, American psychologist Herbert Woodrow was already able, reviewing the pioneering works of C. Ward Crampton, Thomas Morgan Rotch and J.W. Pryor, to devote a long chapter to the connections in the child between ‘a number of different ages, each of which represents an appraisement of some one of the factors comprising his complex existence’.[[12]](#footnote-12) The ‘four most important’ of those ages, he says, are the chronological, the mental, the pedagogical, and the physiological/ anatomical. The pedagogical age corresponds to the child’s current year group in the educational system; the physiological/ anatomical, to the development of bodily functions and structures, some of which are characterised in detail: puberty, teething, weight and height, hand grip, and the ossification of the wrist. But Woodrow is in fact very restrained in talking about *only* four ages in the child. More and more ages had been or were being ‘discovered’; a ‘somatic age’,[[13]](#footnote-13) a ‘social age’,[[14]](#footnote-14) an ‘emotional age’,[[15]](#footnote-15) a ‘psychological age’,[[16]](#footnote-16) even a ‘socio-industrial age’,[[17]](#footnote-17) referring to the degree of competence of the child in work and community. The term ‘reading age’, arguably still common now, bloomed slightly later.[[18]](#footnote-18) The more specific ‘carpal age’[[19]](#footnote-19) and ‘dentition age’[[20]](#footnote-20) might be understood as subcategories of anatomical age. What this meant in theory was that the various units needed to measure bone density, familiarity with vocabulary, capacity to make friends, or appearance of pubic hair, were converted according to age norms into units of years, making them comparable with one another, both within individuals themselves and in relation to peers. To some extent, this was but a discursively convenient way of talking about growth. But this practice had the effect of reducing a variety of observations in a variety of units to a single unit, the year; and this unit became the principal unit of measure of childhood. From then on, the discourses of psychologists and educators began to integrate as unproblematic the claim that children ‘had’ many different ages at once; that they were developmentally fragmented beings, and that chronological age was not a reliable measure of their capacities.

In the early decades of the twentieth century, it thus became possible for an eight-year-old child to have a mental age of ten, a pedagogical age of nine, an anatomical age of eleven, a social age of fifteen, an emotional age of four, etc. All those ages, Woodrow argued, were ‘to a large extent independent of the others’,[[21]](#footnote-21) but he observed that anatomical age might be a better predictor of mental age than chronological age;[[22]](#footnote-22) in other words, we could anticipate that a child of ten with an anatomical age of twelve might have a mental age closer to twelve than to ten. Many researchers shared this opinion, sometimes emitting quite forceful advice: ‘All observations, records and investigations of children, and all treatment of children, whether pedagogical or medical, social or ethical, must regard physiological age as a primary and fundamental basis’, said Crampton in an official ‘Recommendation’ to policy-makers;[[23]](#footnote-23) Thomas Morgan Rotch, in 1908, declared, ‘With such an anatomic classification we can practically work out our problems of child life’.[[24]](#footnote-24) Terman himself sometimes opined that physiological age may be more significant than chronological age.[[25]](#footnote-25) There was also great interest in the connection between ‘dentition age’ and other ages: in Terman’s edited collection on gifted children, the emergence of teeth was repeatedly correlated with intellectual precocity: ‘At the age of nine months he cut his first tooth’,[[26]](#footnote-26) we learn of Villiers, Earl of Clarendon; similarly, ‘at birth Mazarin had hair and two teeth’.[[27]](#footnote-27) Later researchers were more sceptical,[[28]](#footnote-28) but the debate continued to bloom in the pages of medical and educational journals until the late 1920s.

This multiplication of ages was accompanied by intense efforts for minute precision in their calculation, leading to the splitting-up of the original unit of measure, the year, into months. This was particularly clear for mental age. Within each cluster of tests on the Binet-Simon scale, and later the Stanford-Binet scale, each test was equated with a number of months; in a cluster of four tests making up a year, each passed test thus granted the examined subject three months of mental age. This allowed the psychologist to measure mental age not just in years but in fractions of years. A striking example, worth quoting at length, of the resulting divisions and subdivisions of years in the different ‘ages’ of a child – and their comparisons with other units of measurement – is chaotically given by Leta Hollingworth in her landmark study of children above 180 IQ:

Beatrice was born in San Francisco, January 21, 1912, and was first tested six weeks before her eighth birthday, by Stanford-Binet, yielding then a mental age of 14 years 10 months and an IQ of 188. … Her median score in eight scholastic tests was about eighth grade... Ratings for traits of character and for physique gave this child a score much above average in both respects; she weighed 11 pounds and 15 ounces at birth, and at the age of 8 years 2 months corresponded to the standard for 9 years 6 months in weight and for 10 years 6 months in stature. Her hand grip at this time was equal to that of the average 10-year-old…. at the age of 4 years 6 months she was discovered reading *Heidi*, a book of about fourth-grade degree of difficulty.[[29]](#footnote-29)

The desire for precision was such that in a later instance, a child is said, at the age of ‘8 years 0 month’, to have ‘scored at a Mental Age of 16 years 0 month’.[[30]](#footnote-30) In some works, ages were expressed in months only, from 53 to 102 for instance;[[31]](#footnote-31) in others, they were expressed in fractions of years, such as 6.5 or 5.9;[[32]](#footnote-32) there are even examples of fractions of *months*.[[33]](#footnote-33) Some of the statements yielded by such a unit of measure are so confusing as to verge on the surrealistic: ‘At the age of 7 1/2 years, then, girls are over a year of boy’s height ahead of the boys!’ exclaim Lowell and Woodrow.[[34]](#footnote-34) The focus on age(s) with this degree of precision was unprecedented. Even chronological age had not been routinely talked about in months, post-babyhood, before the late nineteenth century. What we thus witness in the early twentieth century is the construction of age as a variable of central importance and of high precision in particular relation to childhood, to the extent that many types of data, from intellectual performance to the ossification of the wrist through to the level of difficulty of a book, become numbered in years and months in preference to other units of measurement.

Easily detectable here is the continued need for child psychology to establish itself within education as a highly rigorous science, yielding refined results which mapped as closely as possible what Woodrow called the ‘complex existence’ of the child subject.[[35]](#footnote-35) The complexities of that existence were to be discovered and calculated, for assumptions could not be made from chronological age alone anymore; the dominant idea became that focusing on chronological age had all along done a disservice to children, to education and to society. As Wallin and Cubberley summarise:

A child is a composite of different stages of maturity, or of different ‘ages.’ He is a multiple-aged creature, each ‘age’ depending upon the stage of development of a given attribute. Little has been affirmed regarding a child when he is said to be ten years of age. He must be considered as having not one age, but many ages, among which profound variations and discrepancies may be found.[[36]](#footnote-36)

Yet importantly, the much-decried chronological age was still absolutely needed for this ‘multiple-aged creature’ to be understood; meaningless on its own, it remained, in relation to all the other ages, the standard by which to measure the degree of *normality* or *deviation* of the individual child. And normality and deviation were characteristics towards which psychologists of the time had, to say the least, rather ambivalent feelings.

*The appeal of normality and the fascination for deviation*

In the early days of IQ testing, it was indubitably *divergences* between mental and chronological age that were at the centre of attention. The protruding belly of the curve, made up of children whose ages ‘matched’, is little talked-about in the psychological works of that time; it is reasonable to assume that for those children, who were developmentally ‘stable’, the old models still applied. Both sides of the curve, however, attracted a lot of interest. Binet had been concerned, for professional reasons, with the lower end of the scale, as he was attempting to address the educational problems of ‘feeble-minded’ children. In America, those people who exhibited great mismatch between mental and chronological or anatomical ages caused social anxiety, as such deviation was often criminalised: ‘When the adult body, with its adult instincts, is coupled with the underdeveloped intelligence and weak inhibitory powers of a 10-year-old child, the only possible outcome… is some form of delinquency’, said Terman.[[37]](#footnote-37) Hollingworth daringly assimilated ‘dull’ children with bullies, and future ‘thugs and gangsters’.[[38]](#footnote-38) Deviation, in this sense, was a problem. But comparable, if not greater attention was paid to the upper end of the scale; and there, deviation was more openly celebrated. Beyond intelligence testing, there was clear fascination for all divergences between the ‘ages’ of individuals. Unexpected gaps between anatomical and mental ages, or mental and chronological ages, were discussed with discernible relish. ‘By the time that child was 14 months old,’ said Hollingworth of Heinrich Heineken, an eighteenth-century prodigy, ‘he had learned all the stories in the New Testament. At this age he was still not weaned from the breast of his nurse’.[[39]](#footnote-39) Katherine Dolbear, writing in 1912 of the same child, picked up on the same peculiarity: ‘Until his death in his fifth year, he remained dependent on this nurse and could not be weaned’.[[40]](#footnote-40) The idea of a child still suckling and yet solving complex problems triggered particular delight.[[41]](#footnote-41)

This was in part because ability was by default, in those models, connected to earliness. The fact that IQ scores relied not on how *fast*, nor how *well*, but on how *early* in the life of an individual a specific exercise was completed, was the sign of a specific valuation ofprecocity. So, while children whose multiple ages aligned may have been the norm, they were, implicitly, not the ideal. This was particularly visible in the field of intelligence-testing, where higher-scoring individuals were widely referred to as fuller of potential. The apparent ‘time squeeze’ that such children operated was considered indicative of future attainment. References to precocity as a reliable indicator of intelligence and of promise abound in early research on high ability. In Volume II of the *Genetic Series of Genius* series, edited by Terman, which explores the lives of hundreds of famous ‘geniuses’ from history and attempts to attribute to each of them an IQ score, ‘evidence of precocity’ is one of the criteria by which that score is obtained. Present throughout in those analyses are historical figures’ achievements at early ages. ‘Voltaire wrote verses “from his cradle”; Coleridge at 3 could read a chapter from the Bible… Accounts of the early years of our subjects are full of examples of early mental maturity. … Later achievement was foreshadowed in youthful behaviour’.[[42]](#footnote-42) Divergences between chronological and mental ages were thus openly celebrated.

This fascination for precocity constituted a change from previous perceptions. In the nineteenth century, early cognitive skills were considered suspiciously indicative of earliness in other domains than that of the mind; prominently, sexuality and masturbation.[[43]](#footnote-43) Accusations of precocity were taken very seriously, and children of the time who manifested early talent were emphatically presented to the public as being ‘normal’ rather than precocious.[[44]](#footnote-44) Parents were advised to refrain from intellectually stimulating their children. In the beginning of the twentieth century, however, this view of precocity was overturned, with new advice being given to parents as to the best ways of hastening mental development in their children.[[45]](#footnote-45) The fact that high IQ was effectively a measure of intellectual precocity contributed to raising the profile of the upper end of the bell curve.

However, at the same time, early writings on child psychology and intelligence exhibited a clear concern for normality; not for the normin the sense of the *average,* but of the internal stability of the individual. Albertine Richards-Nash, in a 1924 article on ‘the psychology of superior children’, clearly defines this conception of ‘normality’, which she sees as the successful adjustment or alignment of the varying ‘ages’ of the individual, necessary for the child to be in ‘harmony’:

Normality means that no factor, be it intellectual, affective, or a special talent, is developed at the expense of any other, that the individual is in harmony with himself. Normality is therefore a complex of physical, mental and emotional traits interacting in such a way as to permit the individual to realize all his possibilities. In so doing, he is as great an asset to society as his native capacities will permit.[[46]](#footnote-46)

In Richards-Nash’s view, the ‘normal’ child – the one for whom chronological, mental, physical, social, etc. ages are as aligned as can be – is thus the one who will be at its most efficient in society, whether highly ‘intelligent’ or not. This ‘normality’ is therefore internal rather than relative; one can be intrinsically ‘normal’ while being in the upper or lower ranges in IQ or other measurements:

Normality therefore is not a condition to be determined by comparison of individual with individual, but it is a condition of health, the optimum condition for the individual under consideration. When this optimum condition obtains the individual is efficient, but on his own level, be it that of the mental defective who has been given the simple task that fits his ability or the genius engaged in giving expression to the best fruits of culture.[[47]](#footnote-47)

She establishes that there are among high-IQ children those who are ‘sub-efficient superior’ and those who are ‘normal superior’;[[48]](#footnote-48) in other words, those whose temporal maladjustments and mismatches hinder their productivity, and those who achieve ‘harmony’.

This is an important distinction, because it allows Richards-Nash to posit that the task of child psychology is to help *all* children achieve ‘normality’ if they are currently experiencing a mismatch of ages, in order to make them work ‘to capacity’. The aim was not to raise mental age artificially, but to create individuals who were free from ‘conflict’:

 The life in which aptitude, feeling and interest are centered on the same objects is the effective life because there is no conflict; the whole personality is integrated for the consummation of one aim. It falls upon the school to foster such integration in all children.[[49]](#footnote-49)

We see here how child psychologists, after discovering, analysing and obsessively measuring children’s multiple ‘ages’, attempted to theorise the possibility of an ‘individual’ in the etymological sense of the term: an indivisible entity, untroubled by internal conflict. With the increased ‘complexity’ of the child’s interiority – a fragmented, tectonic territory to be discovered, measured, mapped, quantified, etc. – came some pressure to address, if not solve, this very complexity.

The diagnosed multiplication of ages within individual children according to child psychologists at the beginning of the century was a way for child psychology to establish itself as a readjusting force. The symptom of age maladjustment, of a lack of ‘normality’, was presented both as the great finding *of* child psychology, and as an issue to be addressed *by* child psychology. The problem was everywhere emphasised in the sternest terms: Hollingworth highlighted the ‘difficulties in adjustment to school procedure when a child has a 12-year-old capacity for thinking and the body of a 7- or 8-year-old, combined with the life of a 6-year-old’;[[50]](#footnote-50) somewhere else she noted ‘the problems that arise from *the combination of immaturity and superiority*’.[[51]](#footnote-51) ‘Probably every phase of [the child’s] complicated make-up is subject to deviation’, insisted Wallin and Cubberley.[[52]](#footnote-52) The resulting issues were not an academic question: social and economic efficiency depended on their being addressed:

It would be greatly to the advantage of such children if their superior ability were more promptly and fully recognized, and if (under proper medical supervision, of course) they were promoted as rapidly as their mental development would warrant. Unless they are given the grade of work which calls forth their best efforts, they run the risk of falling into lifelong habits of submaximum efficiency.[[53]](#footnote-53)

So it became the duty of society to repair these conflicted children, through education, but it was child psychologists and, to a lesser degree, paediatricians who could best drive the operations. ‘The teacher or school official, charged with the responsibility of classifying, promoting and demoting pupils, is puzzled by these discrepancies and keenly feels the need of an explanation of them’, thus state Gates *et al*.,[[54]](#footnote-54) justifying the need for education to follow the advice and knowledge of psychologists. Researchers of the time thus explored ways in which the educational system might be modified in order to micro-manage the children’s multiple ages and ensure maximum efficiency. Their concerns were heard. In Britain, the Hadow Report of 1931 and Spens Report of 1938 integrate the discoveries of child psychology, with the latter containing the following two notes:

36. Modern psychology stresses the wide individual differences in intellectual and emotional characteristics. One child differs from another far more than is generally supposed, and the notion that every normal child follows the same general course of development is mistaken.

37. Since the ratio of each child's mental age to his chronological age remains approximately the same, while his chronological age increases, the mental differences between one child and another will grow larger and larger and will reach a maximum during adolescence. It is accordingly evident that different children from the age of 11, if justice is to be done to their varying capacities, require types of education varying in certain important respects.[[55]](#footnote-55)

These ‘certain important respects’ did not lead, in the Spens Report, to recommendations for systematic ability grouping in schools, but this was the first time in British history that a report was so concerned with differences in children’s abilities, and linked them to ‘chronological age’ and ‘mental age’.

Acceleration, enriched curricula, advancement, etc., were frequently reviewed in psychological literature as ways of achieving the ‘normality’ that the child, and especially the ‘superior child’, previously lacked. At the beginning of the century, many psychologists extolled the virtues of acceleration to bring children with higher mental than chronological age up to their rightful *pedagogical* age and thus to their optimal working capacity. The problem, of course, in a context where there were so many ‘ages’ to take care of, was that accelerating the child to align mental and pedagogical ages risked creating new mismatches with social or emotional ‘ages’. ‘If the child is greatly accelerated in grade status, so that he is able to function intellectually with real interest, he will be misplaced in other important respects’, says Hollingworth,[[56]](#footnote-56) who, despite being in support of acceleration, colourfully noted its potentially disastrous social consequences:

When [the accelerated child] jumps up and down, clapping his hands... at an announcement from the teacher, the older children will laugh at him, and later may hang paper tails and other tokens of ignominy upon him; whereas his childish glee would have constituted no violation of taste among eight-year-olds.[[57]](#footnote-57)

Adapting a child’s schooling thus became for child psychologists a *puzzle*; when one age was made to match another, a third one began to stick out. Highly individualised care was, to a degree, the answer to this quandary: Richards-Nash emphasises that the ‘superior child’ ‘needs a rich and varied curriculum… But more than this he needs to be understood and wisely helped in making his social adjustments’.[[58]](#footnote-58) In Volume III of *Genetic Studies of Genius*, which follows up on hundreds of children identified in the 1920s as gifted, Stoddard Burks *et al.* devote a whole chapter to various case studies of acceleration. There is, they note, popular concern about ‘bright children whose progress through the grades has been faster than normal’.[[59]](#footnote-59) Their case studies run the gamut of possible outcomes, from ‘A case of brilliant achievement combined with social balance’ to ‘A case of unwise acceleration’. For acceleration to be successful, they argue, one must devote thought to the social maturity of the individual children considered. For Terman, deciding on a child’s most adequate grade could not solely rely on IQ, but on such varied criteria as timidity, emotional stability, daydreaming and ‘love affairs’.[[60]](#footnote-60) Ryan also presents a long list of criteria to be taken into account for grouping pupils for acceleration;[[61]](#footnote-61) Lehman and Wilkerson add play.[[62]](#footnote-62) But even these best-laid plans did not assuage the impression that adjusting the child’s mental age to the detriment of his physical age was dangerous anyway; Dolbear, in her 1912 study of precocious children, noted: ‘in some ways it seems as if the so-called dullard has quite a fair chance to become a genius; for time has been allowed for his physical development, a matter not carefully enough attended to in children of unusual mental ability’.[[63]](#footnote-63)

What was, therefore, the *solution*? ‘The problem should not be considered finally solved or incapable of solution’, say Wallin and Cubberley of the question of correspondences between different ages.[[64]](#footnote-64) Even though research of the time is traversed with optimism, it is difficult not to detect in this corpus of texts a certain sense of puzzlement in the face of insoluble complexity. There was a feeling that *something* could be done to rearrange the child’s mismatched facets, but no key algorithm had yet been found. Such early twentieth century writings may have perpetuated and intensified concern around the body and mind of the child, extending and complicating a web of worries, incredulity and curiosity which had begun in the eighteenth and nineteenth centuries.[[65]](#footnote-65) The child’s fragmented development appears in those texts so intensely complex that its fine-tuning, similar to that of a precious watch by a skilled horologist, was, even on a case-by-case basis, fraught with perhaps insuperable difficulties.

*The end of the golden age of ‘ages’*

Neither mental age nor any of the other identified ages enjoyed a long life as a workable concept in child psychology. The mid-1920s to late 1930s mark a turning-point in the use of the terms ‘physiological age’, ‘anatomical age’, ‘mental age’ in psychological research; a simple Ngram search presents 1925 as a particularly abrupt break in the meteoric rise of the expression ‘mental age’, which had started in 1907. While the data is to be taken with caution, it is plausible that the proliferation of expressions using age to refer to developmental stages and ability enjoyed a golden era of barely thirty years.

In the mid-1920s, a particularly serious critique of the mental age concept emerged, formulated by psychologist L.L. Thurstone.[[66]](#footnote-66) Thurstone, who had been an engineer and had a more solid understanding of statistics than many psychologists of the time,[[67]](#footnote-67) discredited the concept in a 1926 article where he pointed out logical flaws in its calculation.[[68]](#footnote-68) For Thurstone, the problem with mental age was primarily a technical one; however, as Olivier Martin’s careful history of intelligence measurement from Binet to Thurstone shows, the criticism was strong enough to throw doubt upon the notion that intelligence should be identified in terms of age, relative to each individual, and quantified in years. Thurstone’s critique was itself critiqued,[[69]](#footnote-69) but the idea progressed, and Weschler, in 1939, adapted intelligence tests to follow a ‘deviation IQ’ method, which is now current practice for the calculation of intelligence quotient. Age categories are still used to establish median scores, but it is not possible anymore to infer an individual’s ‘mental age’ from their IQ score. As a result, current calculations of IQ are more evidently comparative than ones relying on mental age. The deviation method removes the rhetorical implication that an individual can ‘possess’ two different ages at once.

Despite the apparently short-lived glory of ‘mental age’ in child psychology and intelligence testing, the notion of an age split within individuals was neither abandoned in common parlance nor, in fact, in all of psychology. Numerous handbooks or textbooks published well after 1950 mention mental age as a current component of IQ, even when, in some cases, they have provided historical background showing that the notion has been discarded.[[70]](#footnote-70) Other texts, particularly in special education, acknowledge the difficulties with the term, but also assert its practical usefulness: special education practitioner Elaine E. Castles thus declares that ‘most workers in the field of mental retardation have found the concept of mental age to be very useful. It describes an individual’s level of cognitive development in a way that makes intuitive sense’;[[71]](#footnote-71) Merrill *et al.* call it a ‘relatively gross measure’, but one which is useful as a ‘construct indicating current ability/performance levels in general cognitive functioning’.[[72]](#footnote-72) As such, little has changed since the time when Frank Freeman, in 1924, declared that mental age was a dubious concept, but one which ‘has substantially proved its validity, however, by the fact that it works’.[[73]](#footnote-73) Terman’s claim that the term is self-evident and immediately evocative may well be right, judging by the number of newspaper articles which still regularly mention it more or less unquestioningly.[[74]](#footnote-74) Despite criticisms and its abandonment as a measure of intelligence, mental age has enjoyed comfortable success in the twentieth century, and there is still both scholarly and informal support for the belief in internal divergences, expressible in years, within individual subjects.

The same decline is perceptible in the 1930s for physiological, anatomical, carpal, somatic, and other declensions of ‘age’ related to bodily development. For one, those concepts quite simply appeared not to keep their promise, namely, to provide stronger correlations than chronological age with other aspects of children’s development, specifically psychological or intellectual. Slightly later in the century, the influential developmental models of Piaget and of the rediscovered Vygotsky, both very much reliant on chronological age, would weaken the interest for physiological age. In parallel, from the mid-1930s onwards, the question of children’s physiological development was severed from psychology and reclaimed by various domains of medicine, particularly paediatrics, radiology and developmental medicine. In 1937, Thomas Wingate Todd published an influential map of bone development in children, based on radiographies, which was updated in the 1950s; here, we may note, the term ‘age’ to talk of anything other than chronological is replaced by the words ‘maturity’ or ‘maturation’.[[75]](#footnote-75) While those extensive developmental maps formed part of the ongoing effort, described above, to chart and measure childhood, and emphasised to a degree the loose connection of developmental stages to chronological age, few claims were made by Wingate Todd or his followers that psychological traits could be deduced from the ‘maturity indicators’ that such atlases revealed.

However, throughout the century, chronological-age-based developmental psychology perhaps did not completely assuage concerns that had been germane to the use of the terms ‘anatomical age’ and its equivalents. The anxiety that chronological age might not provide reliable indication of which year group a child should be in never completely faded in the twentieth century, and constituted a major point of debate in the so-called ‘tracking wars’ of the 1980s.[[76]](#footnote-76)

I shall conclude this study by theorising briefly the construction of *adulthood* implicit in this ‘age craze’. Adulthood was somewhat excluded from the obsession for age in the discourse of intelligence testing and psychology in the early twentieth century. Mental age only applied to the first sixteen years of life or so, which were, as we have seen, precisely studied and sometimes broken down into months. Afterwards, the far larger number of years which constitute adulthood were rather strangely stated to bring no further evolution. In the thought of early IQ test developers, early years were absolutely crucial – Hollingworth defined the seven to thirteen years old range as ‘the golden age of the intellect’.[[77]](#footnote-77) While adults may acquire more worldly experience, their mental age was set. The adult, it was implied, had achieved some kind of normality by virtue of his adulthood; not only did his mental age not evolve anymore, his chronological age was also no longer a relevant variable for the measurement of his capacities. The notion that a forty-year-old might have a similar mental age as a sixteen-year-old as far as psychological measurements were concerned was always a source of debate, called an ‘absurdity’ by Thurstone.[[78]](#footnote-78) Others attempted to argue rather awkwardly that while adults possibly acquired more knowledge, their intelligence did not increase: the adult individual ‘works always with the same mental tools’.[[79]](#footnote-79)

It was clear, from the beginning of IQ testing and the invention of mental age, that this concept was used mostly in relation to children, with the assumption that chronological age was a largely irrelevant or unproblematic measure in adulthood. It was as if adulthood was generally understood to bring stability on its own; Hollingworth argued that ‘by the time a gifted person is physically mature, many of the problems herein outlined automatically disappear as problems’.[[80]](#footnote-80) To her credit, she, like Terman, would spend the rest of her life doing longitudinal studies of gifted children to ascertain precisely ‘what after-effects’[[81]](#footnote-81) appeared in adulthood from age mismatches in childhood; but it is fair to say that concerns about adulthood remained somewhat of an afterthought in the study of age mismatches, which by its very nature and discursive reflexes could not capture the variety of physiological and mental phenomena in adulthood. In the 1930s, as research on the multiple ages of childhood waned, the study of the adult life course from physiological and anatomical perspectives was, in the meantime, taking off. ‘There is a necessary association of life with age, but until recently the earlier ages have been mainly stressed, to the exclusion of maturity, later maturity and senescence,’ noted Walter Miles, who led the pioneering Stanford Later Maturity Studies group.[[82]](#footnote-82) Longitudinal studies of physiological and mental evolutions in adult life, from the 1930s onwards, would challenge the notion that adulthood offers a peaceful haven after a hectic early life. Despite this relatively early medical and physiological interest in the processes of aging, the social sciences and humanities were slow to follow; associated theorisations of the adult life course, and critical approaches to old age in sociology, economics, or cultural studies, remain a recent development in research.[[83]](#footnote-83)

‘The child is essentially different from the adult as the larva is from the imago’, peremptorily declared C. Ward Crampton at the beginning of an article on anatomical age.[[84]](#footnote-84) Whether entomological or horological, the minute, highly individualised interest for children’s ‘ages’ which developed in the first two decades of the twentieth century portrayed the ‘larva’ stage of life as full of developmental *Sturm und Drang*. With its intense focus on age as a sole unit of measurement, and on instability or unpredictability as a distinctive possibility in child development, early twentieth-century child psychology made adulthood appear, by contrast, solid, stable, relatively unaffected by the passing of years. Perhaps the exacerbation of developmental inconsistencies in children, and the puzzlement they elicited, distracted ‘adults’ for a while from their own uneven life paths.

1. Epigraph from B.R. Buckingham, ‘Mental and Physical Age in Relation to School Administration’, *Journal of Educational Research* 1:2 (1920): 139. [↑](#footnote-ref-1)
2. Quoted in Marian Durell, ‘Selection of Students for Schools of Nursing’, *Canadian Nurse* 24:1 (1928): 21. [↑](#footnote-ref-2)
3. See for instance Howard P. Chudacoff, *How old are you? Age consciousness in American culture* (Princeton, NJ: Princeton University Press, 1989). [↑](#footnote-ref-3)
4. Sally Shuttleworth, *The Mind of the Child: Child Development in Literature, Science, and Medicine, 1840-1900*. (Oxford: Oxford University Press, 2010), 140. [↑](#footnote-ref-4)
5. Ibid., 10. [↑](#footnote-ref-5)
6. The term ‘Intelligence Quotient’ was coined by William Stern in 1912. There are plenty of sources on the subject of intelligence testing and its development; see in this journal A.D.B. Clarke, & Ann M. Clarke, ‘Mental testing: Origins, evolution and present status’, *History of Education* 14:4 (1985): 263-272. [↑](#footnote-ref-6)
7. Rhetorically, the notion of ‘having’ or ‘being’ several ages at once is stronger in English, in comparison to (Binet’s) French. In French one ‘has’ twelve years, whether chronologically or ‘mentally’ (*avoir douze ans (d’âge mental)*). In English, one can either ‘be’ or ‘have a’ (mental, chronological) age, depending on the phrasing of the sentence. The English formulation can thus indicate both possession and identity. [↑](#footnote-ref-7)
8. Lewis M. Terman, *The Measurement of Intelligence: An Explanation of and a Complete Guide for the Use of the Stanford Revision and Extension of the Binet-Simon Intelligence Scale* (London: George G. Harrap, 1919), 41. [↑](#footnote-ref-8)
9. Ibid., 137. [↑](#footnote-ref-9)
10. Ibid., 40-41. [↑](#footnote-ref-10)
11. Ibid., 41. [↑](#footnote-ref-11)
12. Herbert Woodrow, *Brightness and Dullness in Children* (Philadelphia: J.B. Lippincott, 1919), 97. [↑](#footnote-ref-12)
13. Francis Lee Dunham, ‘Somatic Development, A Criterion of Mental Measurement’, *Pedagogical Seminary* 22:3 (1915): 305-325. [↑](#footnote-ref-13)
14. Mentioned *inter alia* in H.H. Ryan, ‘Grouping Pupils for Acceleration’, *Elementary School Journal* 24:1 (1923): 50-53; A. Gates, G. Taylor, E. Blocker, & D. Van Alstyne, ‘The Educational Significance of Physical Status and of Physiological, Mental, Emotional and Social Maturity’, *Teachers College Record*, 25:3 (1924): 223-239; called ‘social maturity’ in Charles Hubbard Judd, *Psychology of secondary education* (Boston, MA, US: Ginn & Company, 1927). [↑](#footnote-ref-14)
15. See Gates *et al*., ‘Educational Significance’; C.O. Weber, ‘The concept of “emotional age” and its measurement’, *Journal of Abnormal and Social Psychology*, 24:4 (1930): 466-471. [↑](#footnote-ref-15)
16. J.E. Wallace Wallin & Ellwood Cubberley, ‘Deviations in chronological, physiological, anatomical, psychological, educational, and socio-industrial age’, in *Clinical and abnormal psychology: A textbook for educators, psychologists and mental hygiene workers*, ed. J.E. Wallace Wallin, Ellwood Cubberley (Boston, MA, US: Houghton, Mifflin and Company, 1927). [↑](#footnote-ref-16)
17. Ibid. [↑](#footnote-ref-17)
18. It is used in Ryan, ‘Grouping Pupils’; Lawrence A. Averill & Alfred D. Mueller, ‘Size of class and reading efficiency’, *Elementary School Journal* 25:9 (1925): 682-691; from the 1930s, its occurrence grows, due in part to the multiplication of reading tests and their assessment – in particular by Arthur Gates (see for instance Arthur Gates, ‘An Experimental Evaluation of Reading-Readiness Tests’, *Elementary School Journal* (1939): 497-508. [↑](#footnote-ref-18)
19. Frances Lowell & Herbert Woodrow. ‘Some Data on Anatomical Age and Its Relation to Intelligence’, *Pedagogical Seminary* 29:1 (1922): 1-15. [↑](#footnote-ref-19)
20. Ryan, ‘Grouping Pupils’. [↑](#footnote-ref-20)
21. Woodrow, *Brightness and Dullness*, 91. [↑](#footnote-ref-21)
22. Ibid., 119. [↑](#footnote-ref-22)
23. C. Ward Crampton, ‘Anatomical or Physiological Age: Versus Chronological Age’, *Pedagogical Seminary* 15 (1908): 230-237, 237. [↑](#footnote-ref-23)
24. Thomas Morgan Rotch, ‘Chronologic and anatomic age in early life’, *Journal of the American Medical Association*,15 (1908): 1197-1205, 1197. [↑](#footnote-ref-24)
25. Lewis M. Terman, *The hygiene of the school child* (Boston, MA, US: Houghton Mifflin Company, 1914). [↑](#footnote-ref-25)
26. Catharine Morris Cox, Lela O. Gillan, Ruth Haines Livesay & Lewis M. Terman, *The Early Mental Traits of Three Hundred Geniuses* (Stanford: Stanford University Press, 1926/ 1959), 719. [↑](#footnote-ref-26)
27. Ibid., 362; see also Frances Perkins, ‘The Relation of Dentition to Mental Age’, *Pedagogical Seminary and Journal of Genetic Psychology* 33 (1926): 387-398. [↑](#footnote-ref-27)
28. Lowell & Woodrow, ‘Some Data’; Gates *et al*., ‘Educational Significance’; Ethel Abernethy, ‘Correlations in Physical and Mental Growth’, *Journal of Educational Psychology* 16:7 (1925): 458-466. [↑](#footnote-ref-28)
29. Leta Hollingworth. *Children above 180 IQ: Origin and Development* (London: George G. Harrap, 1942), 36. Hollingworth’s bookwas published posthumously; her study and writings mostly occurred from the 1910s to the 1930s. [↑](#footnote-ref-29)
30. Ibid., 37. [↑](#footnote-ref-30)
31. Gates *et al.*, ‘Educational Significance’. [↑](#footnote-ref-31)
32. Grace Arthur, ‘A Quantitative Study of the Results of Grouping First-Grade Classes According to Mental Age’, *Journal of Educational Research* 12:3 (1925): 173-185. [↑](#footnote-ref-32)
33. ‘168,82 months’ was the average age of pupils taking tests in Raymond Franzen, ‘Attempts at test validation’, *Journal of Educational Research* 6:2 (1922): 145-158. [↑](#footnote-ref-33)
34. Lowell & Woodrow, ‘Some Data’, 7. [↑](#footnote-ref-34)
35. Woodrow, *Brightness and Dullness*, 97. [↑](#footnote-ref-35)
36. Wallin & Cubberley, ‘Deviations’, 20. [↑](#footnote-ref-36)
37. Terman, *The* *Measurement of Intelligence*, 12. [↑](#footnote-ref-37)
38. Hollingworth, *Children above 180 IQ*, 272. [↑](#footnote-ref-38)
39. Ibid., 26. [↑](#footnote-ref-39)
40. Katherine E. Dolbear, ‘Precocious Children’, *Pedagogical Seminary* 19 (1912): 461-491, 468. [↑](#footnote-ref-40)
41. See also Shuttleworth, *The Mind of the Child*, 146. [↑](#footnote-ref-41)
42. Morris Cox *et al.*, *Early Mental* Traits, 217. [↑](#footnote-ref-42)
43. Roblyn Rawlins, ‘“Long Rows of Short Graves”: Sentimentality, Science, and Child-Saving in the Construction of the Intellectually Precocious Child, 1870-1925’, in *Symbolic Childhood*, ed. Daniel T. Cook (New York: Peter Lang, 2002), 89-108. [↑](#footnote-ref-43)
44. See for instance Anna Redcay, ‘“The Long-Defended Gate”: Juvenilia, the Real Child, and the Aesthetics of Innocence, 1858-1939’ (PhD thesis, University of Pittsburgh, 2012) on the reception of 1920s child authors. [↑](#footnote-ref-44)
45. Roblyn Rawlins, ‘Raising “Precocious” Children: From Nineteenth-Century Pathology to Twentieth-Century Potential’, in *When Science Encounters the Child*, ed. Barbara Beatty, Emily D. Cahan & Julia Grant (New York: Teachers College, 2006), 77-95. [↑](#footnote-ref-45)
46. Albertine Richards-Nash, ‘The Psychology of Superior Children’, *The Pedagogical Seminary* 31:3 (1924): 209-246, 215. [↑](#footnote-ref-46)
47. Ibid. [↑](#footnote-ref-47)
48. Ibid. [↑](#footnote-ref-48)
49. Ibid., 236-7. [↑](#footnote-ref-49)
50. Hollingworth, *Children above 180 IQ*, 80. [↑](#footnote-ref-50)
51. Leta Hollingworth, ‘The Child of Very Superior Intelligence as a Special Problem in Social Adjustment’, *Annals of the American Academy of Political and Social Science* 149:3 (1930): 151-159, 151. Original emphasis. [↑](#footnote-ref-51)
52. Wallin & Cubberley, ‘Deviations’, 20. [↑](#footnote-ref-52)
53. Terman, *The Measurement of Intelligence*, 16. [↑](#footnote-ref-53)
54. Gates *et al.*, ‘Educational Significance’, 223 [↑](#footnote-ref-54)
55. Board of Education, *Secondary Education with Special Reference to Grammar Schools and Technical*

*High Schools* (London, 1938), 358-359. (‘Spens Report’) [↑](#footnote-ref-55)
56. Hollingworth, ‘The Child of Very Superior Intelligence’, 152. [↑](#footnote-ref-56)
57. Hollingworth, *Children above 180 IQ*, 271. [↑](#footnote-ref-57)
58. Richards-Nash, ‘The Psychology of Superior Children’, 237. [↑](#footnote-ref-58)
59. Barbara Stoddard Burks, Dortha Williams Jensen & Lewis M. Terman, *The Promise of Youth: Follow-Up Studies of a Thousand Gifted Children* (Stanford: Stanford University Press, 1930), 256. [↑](#footnote-ref-59)
60. Lewis M. Terman, *The Intelligence of School Children : How Children Differ in Ability, the Use of Mental Tests in School Grading and the Proper Education of Exceptional Children.* (Boston: Houghton, Mifflin & Company, 1919), 92. [↑](#footnote-ref-60)
61. Ryan, ‘Grouping Pupils’. [↑](#footnote-ref-61)
62. Harvey C. Lehman & Doxey A. Wilkinson, ‘The Influence of Chronological Age Versus Mental Age on Play Behavior’, *Pedagogical Seminary and Journal of Genetic Psychology* 35(1928): 312-324. [↑](#footnote-ref-62)
63. Dolbear, ‘Precocious Children’, 486. [↑](#footnote-ref-63)
64. J.E. Wallace Wallin & Ellwood Cubberley, ‘Correspondence between the different indices of development’, in *Clinical and abnormal psychology: A textbook for educators, psychologists and mental hygiene workers*, ed. J.E. Wallace Wallin, Ellwood Cubberley (Boston, MA, US: Houghton, Mifflin and Company, 1927), 53. [↑](#footnote-ref-64)
65. See for instance Peter N. Stearns, *Anxious Parents: A History of Modern Childrearing in America* (London: New York University Press: 2003). [↑](#footnote-ref-65)
66. L L. Thurstone, ‘The Mental Age Concept’, *Psychological Review* 33 (1926): 268-278. [↑](#footnote-ref-66)
67. Olivier Martin, ‘La mesure en psychologie de Binet à Thurstone, 1900-1930’, *Revue de synthèse* 4:4 (1997): 457-493. [↑](#footnote-ref-67)
68. Thurstone’s argument goes as such: it is uncertain whether IQ tests are setting mental age on the basis of average test performances for an age group, or on the basis of an average group’s age when achieving a test performance. In other words, if a cluster of tests is said to correspond to a mental age of eight, it is not the same thing to have identified it as (1) the cluster of tests successfully completed by the average eight-year-old; or (2) the cluster of tests for which one finds that the average age of completion is eight years old. Thurstone highlighted the presence of not just one but two possible regression lines, certainly close but not overlapping, and poorly encompassed by IQ tests. Thurstone proposed that testers either decided which definition of mental age they wanted, and sticked to it; or discarded the concept entirely for a quantile system which was more obviously comparative. As Martin explains, ‘Rather than affirm that a child has a mental age of 11 when he is 10 years old, [Thurstone] prefers to compare the score of a child in relation to the scores of a whole age category, and to state that his score is among the top 20% of the considered age category’ (Martin, ‘La mesure en psychologie’, 477, my translation). [↑](#footnote-ref-68)
69. Godfrey H. Thomson, ‘The Mental Age Concept and the Standardisation of Group Tests’, *Psychological Review* 35:5 (1928): 398-413. [↑](#footnote-ref-69)
70. For instance, Dennis Coon & John O. Mitterer, *Introduction to Psychology: Gateways to Mind and Behavior*, Fourteenth Edition (Boston, MA, US: Cengage, 2013), 293; Christine Brain and Penny Mukherji, *Understanding Child Psychology* (Cheltenham: Nelson Thornes, 2005), 111. [↑](#footnote-ref-70)
71. Elaine Castles, ‘We’re People First’: The Social and Emotional Lives of Individuals with Mental Retardation (Westport: Praeger, 1996), 25. [↑](#footnote-ref-71)
72. Edward C. Merrill, Regan Lookadoo & Stacy Rilea, ‘Memory, Language Comprehension, and Mental Retardation’, in *Language and Communication in Mental Retardation*, ed. by Leonard Abbeduto (San Diego, CA, US: Elsevier, 2003), 151-189, 153. [↑](#footnote-ref-72)
73. Frank N. Freeman, ‘The Treatment of the Gifted Child in the Light of the Scientific Evidence’, *Elementary School Journal* 24:9 (1924): 652-661, 655. [↑](#footnote-ref-73)
74. Some examples: Sam Matthew, ‘Disabled man, 40, with the mental age of seven is barred from his regular visits to Legoland over child protection fears’, *Daily Mail,* MailOnline http://www.dailymail.co.uk/news/article-2924553/Disabled-man-40-mental-age-seven-barred-regular-visits-Legoland-child-protection-fears.html (24/01/2015); Jon Harris, ‘Care worker plundered bank account of woman with mental age of 12 - to buy Girls Aloud tickets’, *Mirror*, http://www.mirror.co.uk/news/uk-news/care-worker-plundered-bank-account-5272089 (04/03/2015); Metro News Reporter, ‘Man with mental age of nine knifed to death for his phone by 17-year-old boy’, *Metro*, http://metro.co.uk/2014/08/29/man-with-mental-age-of-nine-knifed-to-death-for-his-phone-by-17-year-old-boy-4850017/ (29/08/2004). Most such examples, it seems, refer to disabled adults qualified as having the ‘mental ages’ of children. [↑](#footnote-ref-74)
75. Thomas Wingate Todd, with the collaboration of others, *Atlas of skeletal maturation* (London: Kimpton, 1937); William Walter Greulich, *Radiographic atlas of skeletal development of the hand and wrist. Based on the Brush Foundation study of human growth and development, initiated by T. Wingate Todd* (London: Oxford University Press, 1950). [↑](#footnote-ref-75)
76. Jeannie Oakes, *Keeping Track: How Schools Structure Inequality*, Second Edition (New Haven: Yale University Press, 2005): 221. [↑](#footnote-ref-76)
77. Hollingworth, *Children above 180 IQ*, 292. [↑](#footnote-ref-77)
78. Thurstone, ‘The Mental Age Concept’, 275. [↑](#footnote-ref-78)
79. Woodrow, *Brightness and Dullness*, 51. [↑](#footnote-ref-79)
80. Hollingworth, ‘The Child of Very Superior Intelligence’, 159. [↑](#footnote-ref-80)
81. Ibid. [↑](#footnote-ref-81)
82. Walter Miles, ‘Age and Human Ability’, *Psychological Review* 40:2 (1933): 99-123, 99. See also Walter Miles, ‘Measure of Certain Human Abilities Through the Life Span’, *PNAS* 17:12 (1931): 627-633. Wiles generally categorised adult ages by decade, in stark contrast with the micro-categorisation by months and fractions of years used to refer to children, as outlined earlier. [↑](#footnote-ref-82)
83. James E. Birren & J.F. Schroots, ‘History of Geropsychology’, in *Handbook of the Psychology of Aging*, ed. James E. Birren & J.F. Schoots (San Diego, CA: Elsevier, 2001), 3-28. [↑](#footnote-ref-83)
84. Crampton, ‘Anatomical or Physiological Age’, 230. [↑](#footnote-ref-84)