

Historical Developmental Psychology: The Sample Case of Paintings

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Since the publication of Ariès's ground-breaking book in 1960, an exponentially increasing number of studies on the history of childhood and the family has been published. A critical review of this historical research however, shows that there are many serious theoretical and methodological weaknesses. It is argued that the empirical analytical research tradition of developmental psychology could be applied fruitfully to solve at least some of the problems. This is demonstrated by the analysis of paintings in which children are depicted. Based on Lorenz's theory of the "*Kindchenschema*" (child schema), ethological research demonstrated which anatomical proportions trigger the innate releasing mechanisms for affection and nurturing in humans. These proportions were used to devise an instrument for assessing historical change in the depiction of "childishness". This instrument was then used in a first study of 100 Dutch and Flemish paintings from the 15th to the 20th centuries. A correlation coefficient of 0.60 between recency of the paintings and childishness scores was found. These data support Ariès's hypothesis that, since the end of the Middle Ages, there is a continuous increase in childishness in the cultural representation of children, such as paintings. This study discusses how this empirical approach to paintings could be generalised to other historical sources. The paper concludes with a general discussion of the desirability of developing a "historical developmental psychology", i.e. of framing an empirical developmental psychology in a cultural-historical context.

Developmental psychologists should themselves clarify and understand the cultural-historical conditions of childhood (Elder, Modell, & Parke, 1983).

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In historical developmental psychology the empirical analytical approach of developmental psychology should be applied to an historical examination of children's behaviour.

In the first part of this paper a review of the relevant literature on the history of childhood is given. It is suggested that there are serious methodological weaknesses, which could at least be partially overcome by applying the empirical approach of (developmental) psychology. The second part of the paper offers an example of such an approach: The quantitative analysis of historical change in the representation of childhood in Dutch and Flemish paintings. Finally, in the discussion, some suggestions are made for generalising the approach demonstrated in the case of paintings to other domains of historical data on the representation of childhood.

HISTORY OF CHILDHOOD: LITERATURE REVIEW

Van den Berg's *Metabletics*

An early book, *Metabletica*, on historical psychology was written by the Dutch psychiatrist and cultural historian J.H. Van den Berg (Van den Berg 1956; English translation, 1961). This study argued that psychologists often neglect the assumption (1961, p. 8), "... that earlier generations lived a different sort of life, and that they were *essentially* different". This assumption requires an historical psychology, or a study of *metabletics* (derived from the Greek word *metaballein*, to change). In particular, Van den Berg's analysis of the *metabletics* of childhood is interesting for developmental psychologists.

Van den Berg first demonstrated that in early post-Medieval pedagogic manuscripts the child was "absent". For example, in 1580 Montaigne advised the Countess of Curson, Diane de Foix "... to confront the child with philosophical discourses ... from the moment it is weaned" (Montaigne, 1580/1969, pp. 175–176). In Montaigne's opinion these are to be preferred to Boccaccio's *Decameron*. To our modern eyes, the recommendation of either alternative (Van den Berg, 1961, p. 22), "clearly evidences an unchildlike interpretation of the child". Even John Locke in *Some thoughts concerning education* clearly showed an adultomorphic interpretation of childhood in emphasising that children should be treated as creatures who are willing and eager to understand *Reason*. "They understand it as early as they do language, ... they like to be treated as rational creatures" (Locke, 1693; this and related quotations as well as the exact references are to be found in Van den Berg, 1961, pp. 22–32).

Not until the second half of the 18th century did a new conception of childhood come into being. It was Jean Jacques Rousseau who argued that reasonableness is not the first but the last effect of education (1762,

p. 71): "... to begin with reason is to begin with the end". Van den Berg (p. 23) comments: "Rousseau understood. He was the first to view the child as a child, and to stop treating the child as an adult." And he adds: "All the manifestations of the correct treatment of the child—the publishing of children's books, the manufacturing of children's clothes, the construction of playgrounds, and the furnishing of pedagogic advice—all these modern proofs of understanding of the child are implicit in Rousseau's work."

Van den Berg is of the opinion that Rousseau did not *invent* a new theory of childhood, as if often stated, but that he simply observed the fundamental change in childhood which took place in his era. According to Van den Berg, Rousseau was the first to see modern childhood because clear signs of a growing distance between adults and children became visible during his lifetime. Since Rousseau, this distance has been rapidly increasing. Although Rousseau called adolescence (1762, p. 236), "... a moment of crisis" of a "rather short" duration, we now view the period of adolescence as lasting a much longer time (Koops, 1990). Consider briefly a second example, which in the historical literature has attracted much attention—that of the child prodigy. Before, and during Rousseau's time there were many examples of, to our modern eyes, astonishingly talented children. Van den Berg describes how Theodore Agrippa d'Aubigné, born in 1550, read Greek, Latin, and Hebrew when he was six years old, and that he translated Plato into French when he was not yet eight; Blaise Pascal, born in 1623, wrote, at 12 years of age and without assistance, a treatise on sound which was taken seriously by expert contemporaries; Père Joseph, born in 1597, recited the drama of Golgotha, standing on his own little table at a dinner party given by his father, when he was four years old. Historical evidence shows that in earlier times, adults were proud of such signs of talent. However, it is only since Rousseau that such children are considered to be child prodigies.

The next step was made by Rousseau's contemporary and follower Campe, the influential German innovator of education, who complained that these prodigal cases were symptomatic of the general educational maltreatment of the children of his time. He was of the opinion that it was *not* delightful at all to see an eight- or ten-year-old boy (Campe, 1786, pp. 94–95), "... who has read a whole library of books, who can converse about the plants and animals of India, who speaks many languages, who knows all the paradigmata of Latin grammar by heart ...". This was yet another dramatic expression of the modern opinion that there should be a distance between childhood and adulthood.

In Van den Berg's work, and that of many later authors, this distance and its growth since the 18th century is demonstrated in many specific domains, such as the exposure to birth, death, sexuality, and science. In general, the historical development has consisted in the child losing contact with these

domains. In Van den Berg's view, the child was pushed away from the adult world.

The Ariès Tradition

In the epilogue of the Dutch edition of his book, Van den Berg writes that he was greatly influenced by his encounter with French psychiatry and French (historical) thinking in general. It is probable that he had known some of the early work of Philippe Ariès: he repeatedly quotes an essay of Ariès in a book edited by Prigent (1956). However, the reader should be aware that Ariès's work *L'enfant et la vie familiale sous l'Ancien Régime* was published in 1960, four years after Van den Berg's book being published in Dutch. It is as if Van den Berg offered the outline for Ariès's book, which in its turn is much richer in argument and demonstrative power. It was the English translation of Ariès's book (Ariès, 1962) that became the most important "classic" source for modern theoreticians on the history of childhood. Ariès's message is the same as Van den Berg's: Medieval society did not recognise childhood (Ariès, 1962, pp. 411–412). In the 16th century, adults were beginning to recognise children as a source of amusement and relaxation (p. 129), but they were regarded only as the playthings of adults (p. 131); childhood was still not perceived as a separate state from adulthood. During the 17th century, adults gradually realised that children were *different* from adults and not merely smaller, they were seen as being innocent and weak ("fragile creatures of God", p. 133). By the mid 18th century the modern view of childhood had emerged (p. 133): "Not only the child's future but his presence and his very existence are of concern: the child has taken a central place in the family." In our own time (p. 411), "... new sciences such as psychoanalysis, paediatrics and psychology devote themselves to the problems of childhood, and their findings are transmitted to parents by way of a mass of popular literature. Our world is obsessed by the physical, moral and sexual problems of childhood".

Ariès postulates that there are strong connections among the idea of childhood, the history of scholastic life, and the history of the family. He demonstrates how the school or grade level gradually became the most important determining factor in the process of differentiating the ages of childhood, adolescence, and adulthood. In the last part of his book, he discusses how the nuclear family became the social cell of the state, and how within this cell the child was gradually placed at the very centre. He then concludes that the school and the nuclear family together removed the child from adult society.

Ariès's, as well as Van den Berg's, description of the historical development of childhood concentrates on the cultural *conception* of

childhood, not so much on the actualities of childhood. Evidence of the latter was presented by Demos (1970), who investigated the historical sources on the Puritan colony set up at Plymouth, Massachusetts, in the 1630s. Despite great differences in approach and theoretical orientation (see Pollock, 1983, p. 3), Demos agrees with Ariès that at the time there was no concept of childhood. Zuckerman (1970), who studied the early colonial history of New England towns, agrees with Demos and Ariès on the absence of a “modern” conception of childhood in the 16th and early 17th centuries, as do many social historians and historical sociologists who have analysed the history of the family. Shorter (1976) concluded that childhood was first conceived in the upper classes of the 16th century. Firestone (1971), Hoyles (1979), and Illich (1973) all agree that, “. . . childhood is a social convention and not just a natural state” (Hoyles, 1979, p. 2). Also, many authors (e.g. DeMause, 1976; Hunt, 1972; Trumbach, 1978) offered a description of (Pollock, 1983, p. 4) “. . . changing attitudes to children [*for the better*, W.K.] through the centuries”.

It is important to stress that Ariès clearly stated that a lack of concepts pertaining to childhood does not imply a lack of affection (1962, p. 128): “The idea of childhood is not to be confused with affection for children.” Nevertheless, several authors have claimed that there is a strong relation between the lack of a conception of childhood and ill-treatment. Stone (1977) wrote that, in the 15th and 16th centuries, children were subject to strict discipline, which at the end of the 17th century became even more barbaric. Stone’s interpretation of this increase as (1977, p. 193), “. . . a by-product of a greater concern for the moral and academic training of children” is still in agreement with Ariès’s conclusion that because of the (1962, p. 258) “discovery of the child” in the 17th century “. . . the whip takes on a degrading, brutal character”. Two authors have explicitly linked earlier periods in history with more severe treatment of children.

DeMause, for instance, reconstructs in his “psychogenic theory” of “the evolution of childhood” a horrifying dark world of childhood in the past, in which children, up to the 13th century, were regarded as being “full of evil”, and parents in the early Middle Ages (1974, p. 553) “. . . routinely resolved their anxieties about taking care of their children by killing them”. In general (DeMause, 1974, p. 503): “The further back in history one goes, the lower the level of childcare, and the more likely children are to be killed, abandoned, beaten, terrorized, and sexually abused.” A second well-known example is Badinter’s book on *The Myth of Motherhood*. She describes how, before 1760, the educators, philosophers, and theologians in French society considered the child to be (1981, p. 39) “. . . an evil or sinful creature”, and for most people the child simply was “. . . often considered a nuisance, or even a misfortune”. In her opinion, the abandonment and neglect of children in earlier centuries demonstrates that motherhood is not biologically given

and that there is no such thing as a maternal instinct. Thus, “motherhood” is a relatively recent cultural historical invention.

Evidence or Emplotment?

How do all these authors know about the metabletics of childhood during so many centuries? What is the nature of their evidence? It is not possible to summarise all the methodological discussions from the literature on the history of childhood, which have come into being since Ariès’s book. Much of these discussions have been presented in the introductory chapters of the book by Pollock (1983). The following is predominantly a summary of that author’s criticism.

One of Pollock’s main points is that the sources used for the history of childhood (1983, p. 22), “... are overwhelmingly secondary”. We will only summarise one important case: The use of the so-called advice literature. DeMause (1976), for instance, used 200 advice statements on child rearing for the 18th century, and Stone (1977) lists several hundred similar sources of evidence. Mechling (1975), however, claims that there are two main types of advice literature (p. 46): that which “reflects” current practice and that which is the vanguard of change. Mechling criticises historians for not differentiating between these two types of evidence. Murphey (1965, p. 150) concludes that, “... advice manuals are not descriptions of actual practice, but prescriptions of what practice ought to be”, and Brobeck (1976) states that such manuals are predominantly written by people who have not been parents themselves and hence have no experience of child rearing. Furthermore, from modern studies it is quite clear that it is at least disputable whether parents in general pay much attention to expert advice (Bronfenbrenner, 1958; Mechling, 1975). From two pertinent studies in the United Kingdom (Newson & Newson, 1965, 1968) it may be concluded that (1965, p. 235) “... contemporary babybooks are a rather poor indication of what actually happens in the home”. The authors concluded from their evidence (1968, p. 556), “... we do not have the impression that mothers in Britain are strongly expert-oriented so far as child rearing is concerned. However, even if it is accepted that the advice literature does offer a reliable direct source of information on actual child rearing and the nature of the relation between adults and children, then there are still serious problems of sampling. Pollock pointed out that the historical advice literature quoted from is generally of the authoritarian type; in fact, many authors give the impression that there was no other (Pollock, 1983, p. 45) and she refers to some historians who have criticised this one-sidedness on the basis of a less biased inspection of the sources. For example, McLaughlin (1976) found two types of advice literature in the Middle Ages: one emphasising the importance of strict discipline; the other that children should not be beaten.

Ryerson (1961) found that advice manuals from 1550 to 1750 advocated a much more permissive style than in later centuries. Bremner (1970–1973) and Murphey (1965) found two different kinds of advice for the 19th century: one advocating that the child's will should be broken; and the other advocating a gentler method of child rearing.

This advice literature is the principal source used in the historical studies of childhood. And thus Pollock (1983, pp. 49–50), on the basis of her critical analysis, is able to cast serious doubt on the validity of the “evidence” on infanticide, abandonment, sending to a wet-nurse, and swaddling as put forward by DeMausse (1976), Hunt (1972), McLaughlin (1976), and Tucker (1976) to prove the neglect of infants and the general indifference to children.

It is not difficult to agree with Pollock's conclusion that the bulk of the existing literature is (1987, p. 12), “... characterised more by the construction of grandiose theory, and premature attempts at synthesis, than by attention to the requirements of scholarship”. This is also certainly true for the original works of Van den Berg and Ariès. These authors used a (Pollock, 1983, p. 24) “*mélange* of evidence”, for their metabelical accounts: paintings, information on children's dress, descriptions of children's games and pastimes, moral and medical tracts, etiquette books, diaries, biographies, autobiographies, etc. They then proceeded to make subjective selections from these sources, and set themselves the goal of writing down a coherent synthesis of their impressions.

Hayden White, a historiographer who frequently writes about the importance of narrative in the writing of history, coined the concept of “*emplotment*” (White, 1973, 1987). Historians like Van den Berg and Ariès “*emplot*” as a way of achieving coherence for all the information they have to present. Thus, the problem is that there are too many impressionistic ideas and too few careful, methodologically sound analyses of primary historical sources. There is far more creative *emplotment*, so to speak, than valid and reliable data.

It is precisely at this point that the empirical-analytical research tradition of psychology, in this case especially of developmental psychology, has much to offer. In the next four sections I will discuss one example of a potentially fruitful application of this research tradition: a quantitative analysis of paintings in which children are depicted.

THE CASE OF PAINTINGS

In his research, Ariès made use of paintings in which children are portrayed. He even framed the main research question of his book by referring exclusively to paintings. “In the tenth century”, he wrote, “artists were

unable to depict a child except as a man on a smaller scale. How did we come from that ignorance of childhood to the centering of the family around the child in the nineteenth century?" (Ariès, 1962, p. 10).

Medieval art, until about the 12th century, did not know childhood or did not attempt to portray it. Up to the end of the 13th century, there are no depictions of children characterised by a special artistic representation, but only images of men on a reduced scale. Ariès (1962, p. 34) claims that: "This undoubtedly means that the men of the tenth and eleventh centuries did not dwell on the image of childhood, and that that image had neither interest nor even reality for them. It suggests too that in the realm of real life, and not simply in that of aesthetic transposition, childhood was a period of transition which passed quickly and which was just as quickly forgotten." At the beginning of the 13th century, a few examples of depicted children began to appear which came a little closer to the modern concept of childhood: the adolescent angel; the Infant Jesus, and the Infant Notre-Dame, who in the history of painting developed from an adult on a reduced scale to a tender little child; and the naked child introduced by the allegory of death and the soul. In the 14th century, the dyad of Virgin and Child became more and more profane and at the same time paintings went more often beyond the childhood of Jesus. There were depictions of the childhood of the Virgin and other holy childhoods. A lay iconography then came into being in the 15th and 16th centuries; genre painting was developing at this time. Since then more and more paintings showed children mingled with adults in everyday life, and the child was apparently depicted because of his or her graceful or picturesque qualities. According to Ariès, the "new taste for the portrait" indicated that children were emerging from the anonymity in which their slender chance of survival had maintained them. Ariès stresses that this marked a very important moment in the history of feelings. In the 17th century, the modern child was, at last, fully represented in paintings: for the first time there are portraits of children on their own, an intense interest in typical childish scenes is shown (pictures of the reading lesson, the music lesson, the little child at play), and even family portraits were completely planned around the child.

Among social historians, Ariès's use of paintings has not gone uncriticised. Pollock (1983, p. 47) argued that "... the different types of childhood portrayed in paintings may have more to do with changes in art than changes in the way children were seen". However, I find it hard to accept that painters in earlier centuries were technically not capable of depicting child-like proportions. How, then, could we understand that the ancient Greeks could do it very well? And why is it only the childishness that is "difficult" to depict, whereas painters are, for instance, able to depict realistically the complicated musculature of an adult male? On the basis of several different arguments, Brobeck (1976) and Fuller (1979) opposed

Ariès's account. Brobeck's argument was based on his study of portrait paintings from 1730 to 1860, where the indications of childishness he found are opposed to those of Ariès. Fuller demonstrates a "recognition of childhood" in the Renaissance. The essential historical changes leading to depictions of childishness, however, were, according to Ariès, much earlier, as I already outlined.

DeMausse (1974, p. 507) writes: "Not only does this {Ariès's theory, W.K.} leave the art of antiquity in limbo, but it ignores voluminous evidence that Medieval artists could, indeed, paint realistic children"; and he refers to Lasareff (1938). Careful study of Lasareff's essay on the iconography of the Virgin, as well as of his "enormous bibliography" (DeMausse, 1974, p. 559, note 20) lead me to the conclusion, however, that this essay and data perfectly support Ariès's analysis! Instead of offering "... many examples of paintings of the child in early Medieval art" (DeMausse), it demonstrates that early depictions of the Christ child only represent adults on a smaller scale, although the earliest more child-like representations, in agreement with Ariès, are not to be found before the 13th century (Lasareff, 1938, p. 42): "The earliest example of the Virgin with the playing Child in East Christian art is a miniature in a thirteenth century Serbian Gospel."

Although there is no important counter-evidence against Ariès's point of view, the main methodological problem of his study is the uncontrolled selectivity with which historical data-sets, such as paintings, are used for historical analysis or emplotment.

In his book, Ariès creates the impression that he has made a thorough analysis of European painting (see, e.g. pp. 49 and 412). In fact, careful examination reveals that in his chapter on the child in iconography, Ariès only studied some 40 child portraits and his analyses are very impressionistic and almost impossible to replicate. Table 1 shows how limited and fragmentary Ariès's work method must have been. Table 1 gives a precise reconstruction of the number of paintings owned in the Netherlands between 1580 and 1780, made by the historical economist van der Woude (1991) on the basis of wills, inventories of household effects, and the

TABLE 1
Number of Paintings in the Netherlands, 1580–1780

<i>Date</i>	<i>Old*</i>	<i>New Pieces</i>
1580–1630	1,492,707	1,019,793
1630–1680	3,240,754	2,464,562
1680–1730	3,055,539	3,312,993
1730–1780	1,165,831	2,148,554
<i>Totals</i>	<i>8,954,831</i>	<i>+ 8,945,902 = 17,900,733</i>

*Note: See the text for the explanation of "old" and "new pieces".

administration of the painters' guilds. In the "old" column are entered works which were acquired through inheritance or purchase abroad. Under "new pieces", the new masterpieces which were produced in the Netherlands in that period and were not exported, are listed. It is quite clear that anyone who, like Ariès, professes to know "European painting" (and not even just Dutch painting) in a particular period, must claim to have studied tens of millions of paintings, a claim which is simply untenable!

The current study reformulates conclusions of the Ariès tradition into testable hypotheses. Furthermore, an inventory of the thousands of Dutch paintings representing children from the 12th to the 20th century is made, in order to enable us to conduct analyses of representative samples of paintings. Our research is concentrated on the careful assessment of "childish proportions".

Kindchenschema and Neoteny

In one of his most famous articles, Konrad Lorenz illustrated the working of "innate releasing mechanisms" in human beings by an analysis of the characteristic differences in form between babies and adults that serve as important behavioural cues (Lorenz 1971, pp. 154–164). As decisive features of juvenility that trigger the innate releasing mechanisms for affecting and nurturing, he mentions a relatively large head, predominance of the brain capsule, large and low-lying eyes, bulging cheek region, short and thick extremities, a springy elastic consistency, and clumsy movements. In his opinion (Lorenz, p. 154), these are the "... major characteristics following the law of summation and combining to give a child (or a dummy such as a doll or an animal) a lovable or 'cuddly' appearance ...". These features fit into the releasing schema for human parental care responses: the so-called "*Kindchenschema*" (child schema). Lorenz emphasises the power that juvenile features hold over us by noting that we judge other animals and even inanimate objects by the same criteria (see Fig. 1). Animals possessing some features also shared by human babies but not by human adults, are cultivated by us as pets and we stop and admire them in the wild (Gould, 1980, p. 102). Lorenz pointed out that certain German names for animals "... exhibit a close correlation with the releasing mechanism concerned". Species with features mimicking human babies very frequently bear names ending with the diminutive syllable "*-chen*", e.g. *Rotkelchen* (robin), *Eichhörnchen* (squirrel), and *Kaninchen* (rabbit). This final syllable does not express the smallness, but rather the "loveable" nature of the animals concerned, because the animals are often larger than close relatives without such features.

Following Bolk (1926), Gould (1977) suggests that the major difference between human and non-human primate growth is that humans mature

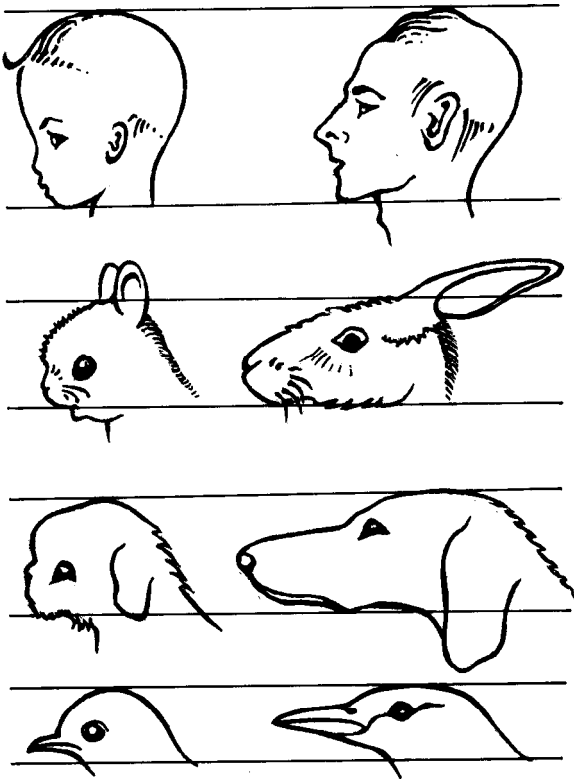


FIG. 1. Humans feel affection for animals with juvenile features: large eyes, bulging craniums, retreating chins (left column). Small-eyed, long snouted animals (right column) do not elicit the same response. (From Lorenz, K. (1971). *Studies in animal and human behaviour* (Vol. 2). London: Methuen.) Reprinted with permission.

sexually while still in an infantile or child-like stage of physical development. We are “neotenus” or “fetalised” in our body growth as well as in our physical features, at least in comparison to other primates. Gould (1981, p. 333) hypothesises that: “In neoteny rates of development slow down and juvenile stages of ancestors become adult features of descendants.” On the same page Gould summarises: “... we are, in more than a metaphorical sense, permanent children”. So neoteny refers to a long-term developmental phenomenon simply to be defined as progressive juvenilisation.

Gould (1979, 1980) has shown how Mickey Mouse markedly changed since his debut performance in the cartoon, *Steamboat Willie*, in 1928. As Mickey gradually became a national symbol, his personality softened, and his appearance changed. Mickey became progressively more juvenile in appearance. To summarise Gould’s calculations: At an early stage in his

evolution, Mickey had a smaller head, cranial vault, and eyes. During the last 50 years, Mickey has evolved towards the characteristics of his young nephew Morty. Gould's data show that Mickey's development, just as that of mankind, is neotenuous. Another demonstration of neoteny, this time in the Teddy Bear doll, is given by Hinde and Barden (1985). Their data show that the Teddy Bear has become increasingly child-like: in the last four decades the forehead of the modal Teddy Bear has increased in relation to the rest of the head and the snout has become shorter. We may conclude that the development of the Teddy Bear is another example of neoteny.

We concluded that we might use the features of the *Kindchenschema* as operational criteria for the quantitative analysis of cultural visual representations of children, especially the depiction of childish proportions. We agree with Ariès that one of the most interesting and quantitatively, as well as qualitatively, rich sources of data consists of paintings in which children have been depicted. This led us to the study of anatomical proportions of children as depicted in Dutch and Flemish paintings, with the help of the so-called *Kindchenschema*.

Construction of an Assessment Instrument

Inspired by Lorenz's idea of the *Kindchenschema* many researchers, by means of systematic variation in schematic images, from "subnormal" to "normal" to "supernormal", have tried to investigate empirically the perception of childishness. Subjects have been asked to judge on the schematic images of children and of other young mammals. A variety of questions have been used, such as, "Which figure do you find the more babyish?" (Gardner & Wallach, 1965); "Which head do you find the more endearing, the cuter, the dearer or the nicer?" (Hückstedt, 1965); "Which picture do you find the nicest?" (Fullard & Reiling, 1976); and: "Will you indicate the attractiveness of this picture on this 7-point scale?" (Sternglanz, Gray, & Murakami, 1977). All these questions refer to a *subjective assessment of childishness*. From the available data in ethological research, we may conclude that adult subjects give more positive answers, the more when childish proportions are emphasised (by stressing the *Kindchenschema*): supernormal models were preferred to normal ones. We decided to use the line-drawings from ethological research for the construction of an assessment instrument with which childish characteristics in paintings could be assessed.

In our *first study*, we created items which consisted of two contrasting line-drawings, from which the subject could choose the most childish. We collected 44 items, grouped in 12 "clusters". The first cluster was called "the relation of the head to the body (excluding legs)". This cluster consists of five items in which the head/body proportions varied from 1/6 to 1/2 (no legs

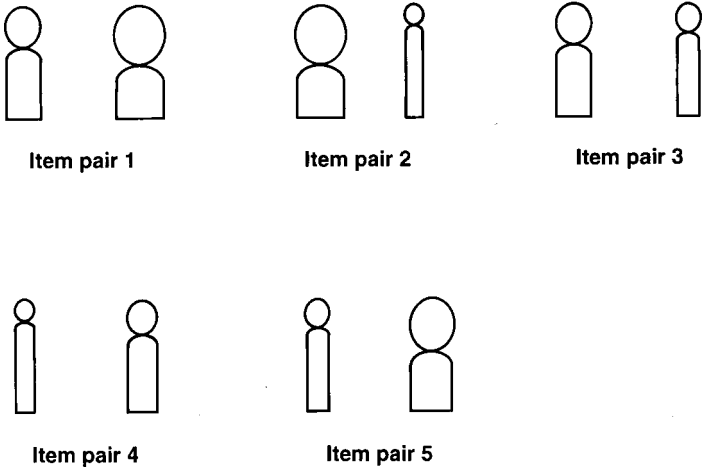


FIG. 2. Five items from the cluster “relation head/body”.

were drawn in order to avoid another proportional cue). Figure 2 shows the resulting variation from (sub)normal to supernormal models. The second cluster (Fig. 3) concerns the “relative height of the forehead”. There were 12 clusters in total.*

All the items were assessed by 90 first-year psychology students aged 18–35 years (60 women and 30 men). In groups, the students filled in the item

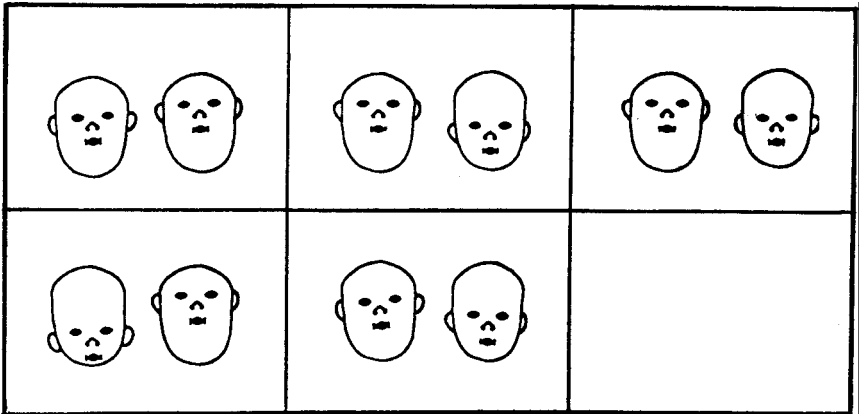


FIG. 3. Five items from the cluster “relative height of the forehead”.

* The author will send the exact item list as used in this research, to any reader who is interested in the details.

lists, presented in bookform. In order to control for sequence effects we used two versions: half of the subjects worked from item 1 to item 44, the other half from item 44 to item 1. The subjects were given the task of choosing the image from each contrasting pair which was the most childish. They were asked to give their first impression and to work quickly through the list, taking no more than 15 minutes. The results were used to remove all items with a score lower than 0.50 (where each subject's rating of an item as "childish" was given a score of 1, and "nonchildish" was given a score of 0). In addition, the subjects reported that a context-effect arose because we had depicted two items per page. Subjects reported that the meaning of a particular item was influenced by comparison with the other item on the same page. In the second study, therefore, only one item per page was presented.

In our *second study*, the items selected from the first study were presented one at a time to 98 students (61 women and 37 men) aged 18–39, who rated the items in the same way as in the first study. The data from this research was used to select a definitive set of schematic drawings of childish proportions. The following criteria were used to select the items:

1. an average score of more than 0.70 per item, indicating that 70% or more of the subjects rated a figure as childish;
2. with items of an otherwise equal value for inclusion in the definitive instrument, preference was given to the item with most variance; and
3. a selection process where five items per cluster would be available.

This resulted in an item list of 45 items spread over nine clusters.

In the *third study* these 45 items were presented to 99 first-year psychology students (66 women and 33 men), aged 19–60 (average age 25). Once again two sequences were used. This time the subjects not only had to indicate which element of a contrasting pair was the most childish, but also whether the difference between the two elements was large, moderate, or small. This resulted in a 6-point scale: if the subject selected the most childish figure and considered the difference large then a 6 was scored; if the subject made the same choice, but considered the difference moderate then a 5 was scored; and so on through a selection of the least childish figure and a judgement of a large difference, in which case a score of 1 was given. We developed an internal consistency for each cluster and calculated the average scores. Table 2 presents the results. We decided later to remove clusters III, V, and VII, because at least three items had a score lower than 3, which meant that these items were scored contrary to our intentions. We decided to retain the remaining six clusters, although some of the Cronbach alpha's were rather low. As an example, in Table 2, the diagram on the right is one item per selected cluster. For clusters II, IV, V, VI, and IX the most childish figure is on the left and the least childish on the right; for clusters I, III, VII, and VIII



















the reverse is true. Cronbach's alpha for all the $6 \times 5 = 30$ items was satisfactory: 0.82. We then carried out analyses of variance to test for the effects of sequence and sex. We only found one effect of sex: men scored somewhat higher. For unknown reasons, men generally found characteristics of childishness to be more evident than did women.

On the basis of these findings we decided to carry out a first study, in which we assessed paintings.

Results of a First Study of Children in Paintings

On the basis of the 30 items indicated above, one subject (male, 47 years, no knowledge of the intention of the experiment, of Ariès's work, of art or art history) assessed 100 paintings. The 30 line-drawing items were used to

TABLE 2
Internal Consistencies and Means of 9 Clusters of 5 Items

<i>Cluster</i>	<i>I</i>	<i>Range</i>		
I Head-Body (without legs)	0.74	4.3-3.6		
II Head-Body (with legs)	0.68	4.1-3.4		
III Prominent forehead	0.77	3.3-2.7*		
IV Height of forehead	0.80	4.3-3.7		
V Thickness of cheeks	0.89	3.1-2.9*		
VI Height of skull	0.83	3.5-3.1		
VII Breadth of eyes	0.47	3.0-1.8*		
VIII Height of eyes	0.59	4.2-3.5		
IX Size of pupils	0.58	3.5-2.4		

* Clusters III, V, and VII were later removed (see text).

classify the children as depicted in the paintings. These 100 paintings were equally distributed over five centuries: from the 15th and up to, and including, the 19th century. For each century, a random sample of 20 paintings was selected from our pool of photographs of paintings per century which we collected from catalogues and annotated. Our collection of paintings consisted of all the Dutch and Flemish masterpieces where children are depicted. In the course of the research, we made use of two slide projectors: the left one for projecting the items consisting of contrasting line-drawings, the right one for projecting the paintings. The items were presented in random order, at both sides. Furthermore, at the left, the contrasting pairs were presented in such a way that the most childish figure appeared in half of the items at the left, and in half of the items at the right. The subject had the task of indicating which of the two line-drawings projected at the left most closely corresponded to the painting displayed at the right. The scoring was as follows: If the subject indicated that the most childish image corresponded to the painting, then a 2 was scored, in the case of the least childish image a 1 was scored and if the subject could not make a choice or found neither applicable then 0 was scored. Thus, the maximum childishness score for a painting was 60, 2 points \times 30 items. The lowest score was 0.

A Cronbach alpha of 0.89 was found for the internal consistency. The correlation between the average childishness scores and the historical dating of the paintings was then calculated. A significant correlation of 0.60 ($P < 0.01$) was found. This result, in principle, supports empirically the main hypothesis of Ariès and his disciples: painters since the Middle Ages increasingly depict children as childish.

One argument against the validity of this result is that in earlier centuries it was mainly the Christ-child who was depicted, and that this Holy Child may have systematically been depicted not as a profane, childish baby, but as more mature. In the random samples of paintings from the 15th to the 19th century there were 19, 17, 2, 0, and 0 Holy Children, respectively. So, indeed, in the 15th and 16th centuries it is almost exclusively the Christ-child that has been depicted. On the basis of the assumed special place of the Christ-child, the correlation between childishness and historical time was calculated after all the paintings with the Christ-child had been removed: it dropped to 0.51 ($P < 0.01$). Thus, the correlation between historical time and the childishness score was indeed lower, but not much: The connection most definitely remains. It is also interesting to make a further analysis of the average childishness score per century. For the 15th to the 19th century these are 12.4, 14.7, 18.4, 23.4, and 31.8. It is important to note that there are significant differences ($P < 0.05$) between all the centuries. The difference between the 15th and the 16th century means that the Christ-child was depicted in a more child-like form in the 16th than in the 15th century. One

might speculate that this is a consequence of Protestantism, which saw to it that the Holy Child became much more of a secular baby. Furthermore, it is clear that the averages constantly increase over the course of post-Medieval history: A more infantile depiction increases exponentially with the advance of time. In other words, the way in which children are depicted in Dutch and Flemish paintings during the last five centuries demonstrates a clear case of neoteny.

Another argument that, no doubt, will be used against our data is the possible effect of the age of the children depicted. It could be the case, for example, that in the 18th and 19th century, on average, younger children are depicted more than in the 17th century. In my opinion, this assumption is not substantial. Over the centuries, the age of children depicted has increased rather than diminished. In the 19th century, for instance, there is much attention to adolescents in paintings. There is even a complete style dedicated to it: The *Jugendstil* (which literally means youth-style). In our random 19th-century sample there are no babies depicted, but in at least 25% of the paintings, adolescents have been depicted. Even so, the average childishness score for the 19th century is much higher. So it follows that young children and adolescents of the 19th century appear to have been depicted in a more child-like way, according to our assessment criteria, than babies and infants from previous centuries.

The results presented in this section are to be considered as empirical support for what should be considered one of the main hypotheses to be derived from Ariès's historiography of childhood. This hypothesis of "historical change" states that since the 13th century, there is a continuous increase in childishness in cultural representations of children, such as paintings. Another hypothesis, that of "discontinuity", to be derived from Ariès's writings states that during the Middle Ages there was hardly any childishness in depictions of children. It is important to make clear explicitly that our data cannot be used to test the discontinuity hypothesis, because there are no Dutch and Flemish paintings in the period before the 14th century. For testing this hypothesis, different data sources should be used. Candidates have been suggested by Ariès: children's games and pastimes, moral and medical tracts, (auto-)biographies, etc. At present, no historical study has adequately investigated the tenability of the social discontinuity hypothesis.

EMPIRICAL DEVELOPMENTAL PSYCHOLOGY

Ariès explored the specific history of the concepts referring to childhood as compared to most later authors, who forged a direct link between concepts and actual behaviour. The most extreme view was given by DeMausse (1976, p. 1): "The history of childhood is a nightmare from which we have only

begun to awaken.” The evidence to justify positions such as his, however, is disputable (Illick, 1985).

Pollock’s critical analysis of the many weaknesses in the literature on the history of childhood is refreshing. It helps to oppose the extreme positions, such as those of DeMause. On the other hand, Pollock runs the risk of supporting the opposite extreme position. The challenging titles of her books, *Forgotten children* and *A lasting relationship* (Pollock, 1983 and 1987, respectively), imply that there is very little historical change in the conception of childhood. However, this theory seems equally untenable. Pollock’s conclusions (based on her analysis of 397 diaries and 36 autobiographies) that there have been few serious changes in the nature of parental reactions or of childhood from 1500 to 1900 is certainly disputable. I mention here only two important points. First, diaries and autobiographies are not without the problems Pollock attributes to advice literature, paintings, and other sources. They should not be accepted as context-free reports of direct unbiased observation (Chaytor, 1984; Sommerville, 1987). Secondly, Pollock’s diary evidence of childhood comes predominantly from the 18th century; there is too little material from early periods to offer a really balanced chronological view (Stearns, 1985). This point is an especially serious weakness if one attempts to use Pollock’s evidence to test the historical change hypothesis of Ariès. Ariès clearly was of the opinion that the roots of the modern conception of childhood are to be found before the 15th century, and the most important change took place in the 17th century. Thus, the essential part of Ariès’s account of the social historical change was not represented in Pollock’s study. These concerns suffice to conclude that Pollock did *not* prove convincingly that actual interactions between adults and children are (*contra* Ariès), historically “... curiously resistant to change” (Pollock, 1983, p. 271). Of course, her data cannot be used to test Ariès’s discontinuity hypothesis. Thus, the evidence from the two perspectives—the history of concepts and ideas about children on the one hand (Ariès and others), and the history of actual behaviour of and with children on the other (Pollock and others)—is still far from definitive and conceptions of the relations between the two are still completely speculative. It is therefore worthwhile to re-examine some of the original ideas proposed by Ariès, to reformulate them in the form of testable hypotheses, and to test the hypotheses rigorously against available historical material. Thus, the newly created field of the history of childhood can profit from the empirical analytical tradition of developmental psychology. At the same time, it is very important that developmental psychology, in its turn, learns to understand and analyse the cultural-historical conditions of childhood and development.

To demonstrate the possibility of such an endeavour, this paper reported some results of our own investigations of Dutch and Flemish paintings.

Although our study has to be replicated with more and different subjects, we hope to have demonstrated that with the measurement instrument we have devised, it is possible to investigate the generalisability of our results.

Of course, it is not the case that all questions on the history of childhood can be answered through the analysis of paintings. These reveal only a specific aspect of the cultural-historical representation of childhood in a specific society in Europe. However, it is possible to apply our approach to other parts of the world: A cross-cultural study of paintings would not be difficult, from a methodological perspective. Furthermore, such an empirical analytical approach is, in principle, applicable to many different aspects of the historical representation of the child. Suffice it to mention the possibilities of computer-based content analysis of literary sources, research into the interesting historical phenomenon of children's books, and all the information from diaries and (auto-)biographies.

I conclude with expressing my hope that developmental psychologists will have the courage to open up the borders of their discipline, and to welcome cultural-historical relevance.

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