

Thoughts on the Idea of Evolution

compiled by

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*from the writings of Wolfgang Schad, Rudolf Steiner, Jos Verhulst,
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*Preparatory materials for discussing the question: Is the human being an animal?
(with major implications for questions on human freedom and morality).*

The Idea of Evolution in Pedagogy: Human Ancestors and the Development of Humanity

The discoveries [of the six million year old hominid *orrorin tugensis* and seven million year old *sahelanthropos tschadensis*] tell us that the shared and original ancestor of our close relatives the human-like apes and of human beings is, in fact, a mixed or combined form (*Mischform*). And this is indeed logical because the common primeval form (*Urform*) of this ancestor must have contained the potentiality for both directions of development. Both the lineage of apes and the lineage of humans arose out of this common ancestor's potentiality. The ancestor apparently possessed not only the potential for both, but also the capacity to impart form to both (*Formgebung*).

These oldest of recent findings of early humanity fit the portrayal Rudolf Steiner has presented of the ancestors that apes and human have in common. He put forth the following analogy:

. . . [the separation of the animal forms was actually necessary to the human being. Each animal form which separated in bygone times from the general stream signifies that man had then progressed a step further. Imagine that all the qualities distributed throughout the animal kingdom were in the human being. He has purified himself from them. Through this man was able to develop further [Translator]. If we take a muddy liquid and allow the gross matter in it to settle to the bottom, the finer part remains at the top. In the same way the grosser parts which man would have been unable to use for his present condition of development *have been* deposited like a sediment in the animal forms. Through man having cast out of his line of development these animal forms—his elder brothers, as it were—he has reached his present height. GA 104, *The Apocalypse of St. John*, Lecture IV, p. 81–82)

Thus, in this development the ape lineage developed out of this mixed form in one direction in which the human characteristics were lost and a coarsening occurred. And on the other side the development toward the human being entailed a purging of ape features and a purification leading to being human. Neither side develops from the other; instead both stem from the same common mixed form in which the trunk-limb parts of the body (*Rumpf-gliedmassenbereich*) become more humanized [upright] and the brain area still remains more animal-like for a long time.

Thus we can say: We have traveled through a shared development with animals that are closely related to us. And this development is achieved through an unmixing. And indeed one can still observe on both the human and ape sides that this process of unmixing is still not complete. The ape child manifests so much that is human. And every human being must ever and again strive to renew his or her true humanity.

Furthermore, are not human children in certain areas of life also superior to adults? To imagine a world of only adults is intolerable. The state of childhood brings an irreplaceable element of humanness into the world of grownups. What is it that we as parents and teachers owe the child? Aging in adulthood can entail the danger of lapsing into oneness, fixed attitudes, and inflexibility. However, in so far as we can recognize such tendencies in ourselves, we can overcome them inspired by children who embody unceasing transformation. Children are forever moving toward new, unpredictable shores. They show us how important the understanding of evolution is for modern people in general and for Waldorf pedagogy in particular. By nature, spirit is action and where spirit blows, something is always changing into the future. In beholding our children growing up, there lies a call to adults to be optimists. That indeed is the great value of understanding evolution.

Die Idee der Evolution in der Pädagogik: Menschenvorfahren und Menschheitsentwicklung by Wolfgang Schad, Professor and Director of the Institute of Evolution Biology and Morphology, University of Witten-Herdecke in *Erziehungskunst*, vol.9, September 2004, pp. 938–942.

Steiner on Child-like Wonder, Reverence, Openness as Higher Cognitive Faculties and Key to Retaining Our Essential Humanness

from *Practical Advice to Teachers*, Lecture 8, p 122-3.

You must have the ability to transform yourself [as teachers] in such a way that the children literally wake up in your lesson and that you yourself become a child with the children, but not in a childish way. . . . It is not a matter of becoming childish with the children in an external way; we must transform

what is more mature into something childlike. To be capable of doing this in the right way we have to look rather more deeply into the nature of man. We have to take seriously the fact that just with regard to his most important spiritual characteristic man becomes productive by retaining the childlike element all his life. We are a poet, an artist if we can always relive in ourselves the activity of the child with our maturer humanity. To be for ever a steady fellow, unable any longer to use in a childlike, an inner childlike way our thinking, feeling, and willing . . . is not a suitable mood of life for a teacher. The proper mood of life for him is always to be able to return to childhood with everything he experiences and with everything he learns. . . . He will return because with every new fact he will experience as much delight and intense joy as the child does when he perceives anew fact of life. In a word, it is the soul and spirit that should return to childhood and not the external physical manifestation. Then, too, a great deal will depend on the atmosphere that is created between teacher and pupils. It is right, for instance, if you speak about life and about nature in such a way that you take as much pleasure in it as the children themselves and are as much amazed as the children themselves.

Steiner on Evolution: Densification of the Human Spirit into Earthly Form
from *The Apocalypse of St. John* – Lecture Six, p. 108.

[Human beings] pass through a series of incarnations, as a result of which they develop slowly and rise from one incarnation to the next. Men trod the surface of our earth as true spiritual infants. Since the separation of the sun and moon from our earth they have risen to the present stage. All these souls will return in different bodies up to the end of the earth's evolution. Now if man were influenced by the sun alone he would have to pass in a single incarnation through all that he now goes through in so many. The right tempo comes into the many incarnations through the balancing of the forces between the sun and moon from without.

Modern man was gradually shaped during the period when sun and moon withdrew; the first germs of the present-day man were then created. That was at a time when man moved upon this earth not at all as he does now. You must not imagine that when the moon had just gone forth man moved upon this earth in a fleshly form as he does now. There appear first all the forms which had previously been there, as a repetition; and when the earth was liberated from the sun and moon it looked approximately like the old moon, even softer. And if a being with eyes organized like those of the present day had looked at the earth he would not yet have been able to see man. On the other hand, certain other

beings were there who were not sufficiently mature to await a later time. These had to take bodily form while the stage of evolution was still incomplete; so that some time after the moon's departure from the earth certain forms of the lower animals could already be seen physically condensed. Man had not yet descended, nor yet the higher mammals. Man was still a spirit being. He floated as a spirit round the earth and took into himself the finest substances from the environment of the earth. Then gradually he densified so far that he could descend to where the earth had already become solid and islands had formed.

Thus we see that the first men appeared comparatively late in the earth's evolution and at that time they had a very different constitution from the present man. I cannot describe to you the forms of those men which first crystallized, so to speak, out of the spirit. Although you have already heard much that is difficult to believe, you would be too greatly shocked were I to describe to you the grotesque forms of the bodies in which your souls were then incarnated. You would not be able to bear such a description.... The solid parts were only built into this human form gradually. There were originally no bones in the human body, even when it had already descended. The bones developed out of soft cartilaginous structures which traversed the human body like cords. These in their turn originated from quite soft substances, and these soft substances from fluid substances, these from airy—the airy from etheric and the etheric from astral which had densified from spiritual substantiality. If you trace it back you will find that everything material has originated from the spiritual. Everything is in archetype in the spiritual world. It was only in the Atlantean epoch that the bones, formerly merely indicated, actually developed in man.

If we look back and see how mankind has hitherto developed on the Earth, we shall find that this development of the future is quite in harmony with it [Lecture 4, p. 80–82]. Let us look back to the origin of our Earth after Saturn, Sun and Moon and a long interval had passed. The Earth then emerged anew out of the cosmic darkness. At that time, in the first part of the Earth development, there were no other creatures upon the earth besides man. He is the firstborn. He was entirely spiritual, for embodiment consists in a densification. Let us imagine a body of water suspended in space which, through a certain process, partially crystallizes into ice, first a small part and then the same process continually repeated. And now let us imagine that the small pieces of ice which crystallized fall from the body of water, so that they are now separated from the whole mass. Now, because each small piece of ice can only grow larger so long as it is in the whole body of water, when it has separated from this it remains at the stage it has reached up to that point. Let us imagine a portion of the body of water separated in the form of small pieces of ice; let us imagine that the freezing of

the water continues and at the next stage more water assumes the form of small lumps of ice; these again fall out, and so on, till finally a very large part is crystallized out of the mass of water and takes the shape of ice. This last has taken the most out of the mother-substance of the water; it has been able to wait the longest before separating.

It is the same in evolution. The lowest animals were unable to wait, they left their spiritual mother-substance too early and hence have thus remained behind at an earlier stage of evolution. Thus the gradually ascending grades of lower beings represent backward stages in evolution. Man waited until the last; he was the last to leave his spiritual, divine mother-substance and descend as a dense substance in fleshly form. The animals descended earlier and therefore remained at that stage. We shall see the reason for this later. At present we are interested in the fact that they descended and have remained at earlier stages of evolution. What, therefore, is an animal form? It is one which, had it remained united with the spirit from which it proceeded, would have developed up to our present humanity. But the animal forms have remained at a standstill; they have left the spiritual germ; they have separated themselves and are now degenerating. They represent a branch of the great tree of humanity. In ancient times man had the various animal natures within him, as it were, but then separated them off one after another as side branches. All the animals in their different forms represent nothing other than human passions which condensed too early. What man still possesses spiritually in his astral body, the several animal forms represent physically. He kept this in his astral body until the latest period of earth existence, and hence he could progress the furthest.

Man still has something within him which must separate itself from sensual evolution as a descending branch, as the other animal forms have done. What man has within him as tendencies to good and evil, to cleverness and stupidity, to beauty and ugliness, represents the possibility of an upward progress or a remaining behind. Just as the animal form has developed out of progressing mankind, so will the race of evil with the horrible faces develop out of it as it progresses towards spirituality and reaches the later goal of mankind. Thus in the future there will not only be the animal forms which are the incarnated images of human passions, but there will also be a race in which will live what man now hides within him as a portion of evil, which today he can still conceal but which later will be manifest. Let us make clear the chief thing that will appear by an illustration that may perhaps seem strange to you.

We must understand that this separation of the animal forms was actually necessary to man. Each animal form which separated in bygone times from the general stream signifies that man had then progressed a step further. Imagine that

all the qualities distributed throughout the animal kingdom were in man. He has purified himself from them. Through this he was able to develop further. If we take a muddy liquid and allow the gross matter in it to settle to the bottom, the finer part remains at the top. In the same way the grosser parts which man would have been unable to use for his present condition of development have been deposited like a sediment in the animal forms. Through man having cast out of his line of development these animal forms—his elder brothers, as it were—he has reached his present height. Thus man rises by throwing out the lower forms in order to purify himself and he will rise still higher by separating out another kingdom of nature, the kingdom of the evil race. Thus mankind rises upward. Man owes every quality he now possesses to the circumstance that he has rejected a particular animal form. One who with spiritual vision looks upon the various animals knows exactly what we owe to each one of them. We look upon the lion form and say: If the lion did not exist in the outer world, man would not have had this or that quality; for through his having rejected the lion he has acquired this or that quality. This is the case too with all the other forms in the animal kingdom.

Now the whole of our five ages of human development, the various cultural ages from the ancient Indian to our own, really exist in order to develop intelligence and reason and all that belongs to those two capacities and forces. Nothing of this existed in the Atlantean epoch [Tertiary Era]. Memory was present and also other qualities, but to develop the intelligence and what pertains to it, while turning our attention to the outer world, is the task of the fifth epoch. Directing our clairvoyant vision to the surrounding world we inquire: To what do we owe the fact that we have become intelligent? What animal form have we put forth from ourselves in order to become intelligent? Curious and grotesque as it may appear, it is nevertheless true to say that if there were not around us the animals which belong to the horse nature, man would never have been able to acquire intelligence.

In former times men were still aware of this. All the intimate relations existing between certain races of men and the horse originate from a feeling which may be compared to the mysterious feeling of love between the two sexes, from a feeling of what man owes to this animal. Hence when the new culture arose in the ancient Indian age, it was a horse that played a mysterious role in religious ceremonial, in the worship of the gods. And all customs connected with the horse may be traced back to this fact. If you observe the customs of ancient peoples who were still close to the old clairvoyance such as, for instance, the old Germanic peoples, and notice how they fixed horse skulls to the front of their houses, this leads you back to the awareness: man has grown beyond the

unintelligent condition by separating out this form. There is a profound consciousness that the acquisition of cleverness is connected with it. You need only remember Odysseus and the wooden horse of Troy. Such legends contain deep wisdom, much deeper than our science contains. The horse species is not employed in legend without reason. Man has grown out of a form which once contained within it what is now embodied in the horse; and in the form of the centaur, art still represented man as connected with this animal in order to remind him of the stage of development out of which he had grown, from which he had struggled free in order to become the present human being.

What thus took place in bygone times in order to lead to present mankind will be repeated at a higher stage in the future. It is not the case, however, that this would in the future have to run its course in the same way in the physical world. Those who become clairvoyant at the boundary between the astral and the devachanic planes can see how man continually purifies and develops what he owes to the separation from the horse nature. He will accomplish the spiritualizing of intelligence. After the great war of all against all, he will elevate to wisdom, to spirituality, what is today merely reason, merely cleverness. This will be experienced by those who then will have reached the goal. The fruits of what was able to develop in humanity in consequence of the separation of the horse nature will be manifested.

Steiner from *The Theosophy of the Rosicrucian* (1907: GA 99)

In the remote past, during his first incarnation the human being was entirely under the sway of every emotion and desire; true he had an ego, but he behaved like an animal ... [a] wild man ... [p. 25].

During the time when the Sun had already withdrawn and the Earth had not yet cast out the Moon, man was in a condition in which his astral body was the bearer of the most savage lusts, for every bad force was implanted in him and there was no counterbalance. After the separation of the Sun there was a globe in which, if one wished to express it today, the human beings were still entirely group souls, but of the most sensual order with the worst instincts. During this passage through a veritable hell, and under the influence of the departed pure Sun forces (not only of the physical sun, but also of the Sun-beings, who had withdrawn to the Sun) the recapitulating Moon gradually matured so far that it could throw out the terrible instincts and powers, and retain on the Earth whatever was capable of evolving. With the departure of the present moon all those sensual forces went away; therefore, in the present moon you have the remains, 'in its spiritual significance, of all the evil influences which were at that time present in the human realm; and therefore too the moon is looked upon as having a detrimental influence. Thus it was everything capable of evolution that

remained on the Earth after the separation of the Sun and the Moon [pp. 118–123].

Let us consider first the animal-men themselves. They were gradually matured far enough for the Ego to be incorporated. . . . It is now for the the first time that the earlier swimming, floating position changes and man begins gradually to arrive at the upright position. His spine, his spinal nerve-cord, became vertical, in contrast to the completely horizontal position which it had during the Moon period, and with this rise into an upright position went parallel the widening out of the mass of the spinal marrow into the brain; and yet another development ran parallel with it. For the floating, swimming motion which man had both in the Moon period and during the repetition of the Moon period when the Firemist forces were still present in the environment, he needed a kind of swimming bladder, and this was actually a part of man's composition, as is the case with the fishes of the present day. But now the Fire-mist (we have called it *Ruach*) was precipitated. This took place quite gradually and slowly. The air, to be sure, was still filled with thick vapor, but the worst was precipitated and with this began the time when from a gillbreather man became a lung-breather. The swimming bladder was transformed into lungs. Through this man became capable of receiving into himself the higher spiritual beings, namely, the first rudiments of that which stands above the Ego-Spirit-Self or Manas. This metamorphosis of the swimming bladder into the lungs is expressed in the Bible in the wonderful monumental words: "And God breathed into his nostrils the breath of life and man became a living soul." Here is expressed what had taken place in the human being during millions of years. And all the beings which we have learnt to know, the plant-animals as well as the animal-men of the Moon and their descendants during the Moon period of the Earth, all of them as yet had not red blood . . . the influence which came in then with the change in the breathing process, was supported by the introduction of iron into our evolution [through the influence of Mars]. This was of the utmost importance in our terrestrial evolution. Under these influences the human organism was perfected to the point of beginning to purify and refine the bodies which it had earlier received on Saturn, Sun and Moon. It began to work first, of course, on the body which had been last received, the astral body, and this purification of the astral body constitutes our present civilization.

If you could observe that human being . . . you would find him very dissimilar to the present human form . . . it would appear grotesque to the present day materialistic thinker. He had more or less the development of an amphibian, a reptile, which was just beginning to breathe through lungs, and from the former floating, swimming motion was learning little by little to raise and support himself on the earth. When we say that man in the Lemurian Epoch

had a mode of progression that alternated between a hop, scarcely to be called a step, and then a flight into the air, we have the nearest approach to some memory of it in the old Saurians. Nothing remains to be discovered by the geologist as solidifications or fossils, for the body was quite soft, it contained as yet no kind of bony structure. . . .

The beings on the Moon who were animal-men had divided into two groups, one of which had kept pace with evolution and taken on the human form. But, there were some who had not advanced with evolution. These are the present higher animals, they had stayed behind at an earlier level and since they could not share in the advance, they fell back more and more. All our present mammals are relics of the Moon animal-men who stayed behind. You must therefore never imagine that the human being was ever such an animal as those existing on earth today. The bodies of those animals were not at that time capable of receiving the I, the Ego; they had remained with the group nature of the Moon. The last which had almost achieved the additional principle of the earth, but which nevertheless proved later on too weak to be the vehicle of an individual soul, are the apes, the present ape species. They too, however, were never actual ancestors of mankind, but beings which had degenerated.

Thus in the old Lemurian Age [Mesozoic Era], the Earth was a kind of fiery mass, in which the modern mineral was for the most part dissolved and fluid, as is iron in an iron-foundry, and out of this developed the first mineral island masses. Upon these there wandered, half hopping, half hovering, the forefathers of man. . . . There still continued a magical connection between human will and the forces of fire. If the human being had a mild character, then through the will, he acted on the natural element of fire in a calming manner, and in this way more land could be deposited. The passionate man, on the other hand, worked with his will magically in such a way that the fire-masses became fierce and turbulent and tore up the thin earth crust. Now once more the whole savage, passionate power that was peculiar to man on the Moon and during the repetition of the Moon-period on the Earth burst forth in the newly arisen individual human souls. The passions had such an effect on the fiery masses that they became ungovernable; a great part of the land on which the Lemurians dwelt was destroyed, and only a small number of the inhabitants of Lemuria were preserved and could continue the human race. All of you were living in those times; your souls are the very ones which saved themselves from the raging fiery mass of Lemuria. The portion of humanity which had been saved, migrated 'into the land which we know as Atlantis [Tertiary Era], and the main part of which stretched between the present Europe and America; from there the human race multiplied and spread.

From *Developmental Dynamics in Humans and other Primates* by Jos Verhulst

Although Bolk [Professor of Anatomy at the University of Amsterdam] and Steiner were contemporaries, they were active in completely different professional fields and apparently remained unaware of each other's work. [p. xvii] Yet the views they developed on the relationship between human beings and animals coincide remarkably. These views share the premise that the human being represents the original form, so to speak, from which animals not only developed but also diverged. The idea of the human being is central to animal evolution and manifests with increasing clarity as evolution progresses. In mammalian evolution the human being plays the role of something like an Aristotelian "final cause" or guiding factor . . . [a] hypothesis, which is present in seminal form in the works of Goethe.

From *Growing Young* by Ashley Montague, Professor of Anthropology, Princeton University

Louis Bolk, Professor of Anatomy at the University of Amsterdam . . . pointed out that compared with other primates, the rate of development of humans, from fetus through infancy and childhood into adulthood, is slow, and that adult humans exhibit many physical traits that are also features of the human fetus [p. 7]. This is not so true of the adults of other animals. He listed flat-facedness, minimum body hair, large brain size, structure of hands and feet, the form of the pelvis, and a number of additional physical characteristics that change in other animals but that in human beings persist into adulthood. In short, said Bolk, echoing Kollmann, "Man, in his bodily development, is a primate fetus that has become sexually mature." Bolk called this principle fetalization. Fetalization was effected by retardation of the rate of development.

The importance of this slow development, or retardation, was seen by J. B. S. Haldane, as it was by Bolk, as a major evolutionary trend in human beings. . . He underscored the fact that the essential feature of the latest stage of human evolution has been not the acquisition of new features but rather the preservation of embryonic and infantile traits that had been developed when the organisms were in the womb sheltered from violence. The retention of these features has enabled human beings, Haldane suggested, to shed much of their animalism; Haldane further proposed that if human evolution is to continue along the same lines, "it will probably involve a still greater prolongation of childhood and retardation of maturity."

The adults of the great apes-orangutan, chimpanzee, and gorilla-are all gerontomorphic forms [Gr. Geron—old man, becoming like an old individual, meaning extreme specialization of the adult stages"] . . . as are most prehistoric

humans up to the Upper Pleistocene, some thirty thousand years ago [p. 10]. Humans are born at an earlier stage of physical development than apes, and as they develop remain more like the immature infant than does the ape, the latter pursuing a more specialized developmental path. The human infant starts off by being born with a heavier body than the ape, and a head size that in proportion to body size is relatively the same as in the ape; but in proportion to their height the apes end up with a heavier body and proportionately smaller head. In other words, the apes diverge from what would seem to be the promise of their infant traits and develop instead toward gerontomorphy, whereas humans retain that early promise and continue to develop by stretching out their juvenility for many years. This is brought out . . . graphically clear [in a comparison of the] the skull. At the fetal stage . . . , the chimpanzee and human skulls are much more alike than they are at the adult stage. . . . The adult human skull departs far less from its fetal form than does the chimpanzee skull at the same stage of development. Indeed, when one superimposes a drawing of the human adult skull over one of a newborn human's, it is seen that the adult human skull for the most part simply represents an enlarged newborn's . . . [p. 12]. The juvenile chimpanzee resembles both human child and adult human. From such a juvenile chimpanzee it would require very few changes by neoteny [or paedomorphism] process whereby the fetal and/or juvenile traits . . . retained in later stages of development to produce a human form.

In paedomorphosis there is a displacement of ancestral features to later stages of development. Certain ancestral traits are, as it were, pushed off the end of individual development [p. 15]. As Julian Huxley put it, "Previous adult characters . . . never appear because their formation is too long delayed: they are lost to the species by being driven off the time-scale of its development." And, again, in another work, "The old adult characters may be swept off the map and be replaced by characters of a quite novel type." It is not that one trait is displaced from one locus to another, but that it is either wholly or partially discarded or substantively modified.



Young Chimpanzee



Adult Chimpanzee

Photos in Montague [p. 14] and Poppelbaum [p. 8]

The capacity for learning is characteristic of the juvenile ape, to a comparatively limited extent, and to a much greater extent of the human infant and child. We see this most strikingly in the retention and development of the ability to play, the sense of humor, the ability to learn, the continuing growth and development of curiosity and inventiveness, and the remarkable uses of the imagination, the ability to make believe, traits that juvenile apes exhibit to a quite marked degree, but that fail to develop as they mature.... Educability is the outstanding species characteristic of humans. The juvenile ape is more educable than the adult ape [p. 62–64].

The greatest capacity for adaptability[is] plasticity—the supremely neotenuous trait of humans. It is this very plasticity of mental traits that makes humans unique among the living creatures of nature [p. 77–78]. It is this plasticity, educability, that freed humans from the constraint of a limited range of biologically predetermined responses. The human became capable of acting in a more or less regulative manner upon the physical environment instead of being largely regulated by it. The process of natural selection in all climes and at all times has favored genetic constitutions that permit greater and greater educability and plasticity of mental traits. . . . It is by neoteny of plasticity, of maleability, adaptability, that the made-over ape [primate?] became *Homo sapiens* and it is upon the continued development of these same neotenuous traits that his future development depends.

From *Man and Animal: Their Essential Difference* by Herman von Poppelbaum

The ape, in spite of his original resemblance to man, grows later on into the very physical image of astral body not penetrated by Ego, while man on the other hand visibly impresses the Ego into his bodily form [p. 80–81]. In the astral body the formation of the animal has its origin; outwardly the form as a whole, inwardly the formation of the organs. . . . Where this process of formation is carried to its conclusion, the animal nature is produced. In man, it is not carried to its conclusion ... it is drawn into the realm of a still further organisation, which we call the organisation of the Ego. Down to the smallest particle of his substance, man in his form and configuration is a product of the organisation of the Ego. This gives us the key to the morphological difference between man and animal; and at the same time it affords the simplest explanation of the divergent evolution of the two kingdoms: to become animal is to have been completely shaped by the astral body, to become man, means that the Ego has imprinted itself throughout the form. [The] remarkable postponement of bodily maturity must be recognized as the real foundation for the formative activity of the “I.” The postponing of physical maturity leaves

room for penetration by the Ego—of which the completed organism is to be the image.

“The animal has wisdom in its organs, the human being has not; the human being must first acquire it through inner effort,” [p. 87, Steiner, see similar thoughts by Goethe].

From *Developmental Dynamics in Humans and other Primates* by Jos Verhulst

Stephen J. Gould [Harvard Professor of Evolutionary Biology] comments: “... human adults resemble juvenile chimps and gorilla much more closely than adult great apes” [p. 2–3]. Gould further emphasizes . . . Scientists soon realized that young anthropoid apes were human-like in appearance [1987].

An independent tendency toward humanization is discernible in animal evolution; we see the human form merging ever more clearly from intractable organic raw material. . . . [p. 4] The human gestalt becomes ever more explicit as evolution progresses. In animals, the initial attempt at becoming human is overwhelmed by specialization, while humans remain true to the basic pattern.

This movement toward the human form is present in animal evolution from the outset [p.361]. As evolution progresses, the human prototype manifests more fully in the embryonic stages of organisms. However, the adult forms of these organisms diverge from their humanlike beginnings as they adapt to specific environmental conditions.

This process can be seen most clearly in the primates where the human form is almost achieved in the embryonic stage but is later lost as the apes mature. Only in the case of the human being does the human potential finally persist into adulthood. In this sense, the emergence of humanity can be seen as the fulfillment of evolution’s longstanding promise.

From *The Spirit in Human Evolution* by Martyn Rawson

Spiritual Selection

There is an alternative way of viewing human development and evolution that recognizes more than blind natural selection and selfish genes. This also goes beyond even the subtleties of the gene-environment feedback loop or the possibilities of gene-culture co-evolution. It includes the possibility that the individual can override such determining factors and influence his or her own development in unique ways. For humanity as a whole this alternative view suggests a spiritual-individualizing selection parallel to and interacting with the forces of natural selection. This spiritual selection is at the same time a progressive trend towards the emancipation of the individual from all forms of

determinism. As an evolutionary dynamic it has always been and remains a trend towards the expression and revelation of potential. This potential does not have its origin in a predetermined model but in a lived past, in a history. Ultimately it is also a trend that creates the possibility for the individual human being to free him or herself from the all cultural imperatives. It is a path of freedom and ethical individualism. This approach sees development itself as something more than mere change, adaptation and growth. It sees development as the progressive emergence of an inner determining principle encountering and striving to individualize what it has inherited and what it meets in the world in order to come to ever more coherent form, to ever more complete expression. This principle of being exists in the form of potential. It can only come to realized form by virtue of natural means. Being can only become through life and life can only manifest in physical, biological form.

This inner principle is spirit. Spirit comes to individualized form through the birth and development of human beings.

Human or Animal?

The question whether humans should be classified as animals or as a separate kingdom of nature is in many ways academic. Nevertheless, given the significance attributed to our human condition, it is necessary to provide an answer. The anthroposophical answer would be, Yes, we share physical, life, and sentient bodies with the animals, but the human being possesses an individual spirit that animals do not have. Animals have a spiritual dimension to their beings, of course, but this spirit is collective, rather than individual.

However, the knowledge we have today about the abilities of the higher mammals, such as dolphins, whales, and primates, suggests high levels of individualism within such collective spirits. So where do we draw the line between human and animal? Most of the traits that were once considered uniquely human were linked with the concept of culture but have now proved to be present to some extent in primates and especially chimps and gorillas. These traits include tool use and even tool making (with local cultural traditions), complex social and emotional lives (e.g., empathy, altruism, rules of conduct, diplomacy, and social politics), complex communication skills including the ability to pass on acquired skills through demonstration and emulation, the ability to anticipate future events, even the ability to deceive. Recent studies of chimps (and other primates such as colobus monkeys and macaques) even show them to be capable of using plants with specific medicinal properties both prophylactically and in response to illness or injury!

We have to ask if humans possess anything more in kind than our animal cousins than simply more in degree. One key distinction is that whilst other

mammals are capable of consciousness, only humans are capable of memory. This statement obviously has to be qualified. Mammals, and no doubt other animals, can certainly recall situations; after all rats could hardly be trained to run through mazes and trigger all manner of feeding devices. But learning from painful or pleasurable experiences is not the same as memory in the full sense. To remember, one has to recreate a mental image of a certain experience. As far as we know only humans can do this. The reason for this, according to Steiner, is memory is an act of the “I” or Ego.”

Consciousness, and we could also say sentience, is an attribute of the sentient body and soul (astral body in Steiner’s terms), whereas memory is an activity of the “I.” Forming mental pictures at will is the prerequisite for a whole range of higher faculties, including abstraction, an awareness of time and sequence, the ability to understand complex phenomena and having a sense of self. We have a consciousness of our own identity and that of others precisely because we can remember.

So what, in a nutshell, did Steiner believe his spiritual science could offer to the study of human origins?

Steiner’s own version of monism sees physical and spiritual evolution as two confluent streams rather than as two parallel universes with only a one-way exchange from above to below, as is the case with most dualistic world views of the spiritual on the physical [pp. 90–93 Steiner and Paleo-Anthropology]. Steiner described a “two-fold descent of man,” the evolution of the physical organism and the birth of the soul-spirit. The task of spiritual science is “to delve into the past with regard to the soul and spirit.” He makes it clear that the relationship between spiritual science and natural science is complementary.

Now, anthroposophy does not lead to any conclusions antagonistic or contradictory to the facts advanced by natural science; only with the materialistic interpretation of these facts it can have nothing to do. With regard to human evolution, Steiner acknowledges the relationship of human beings with the higher mammals, with the anthropoid apes, but refutes the view that humanity had descended from the apes. Steiner’s view is that both mankind and the apes are descended from a common ancestor: “What should be accepted is a primeval creature, a common physical ancestor, from the stock of which the ape has degenerated, while man has ascended.” The common ancestor already possessed the “soul of man,” that is, mankind had not only a physical ancestry but a “soul-ancestor,” too. This “soul-ancestor” still belonged to “higher worlds” and thus “lacked the mental activity and moral sense now evident. Such souls could conceive no way of fashioning instruments from the things in the outer world; they could create no political states.” The human soul-spirit in primeval times clearly did not express itself in cultural, technical, or individual ways. Its activity

“still consisted to a great extent in transforming the archetype of those ancestral bodies themselves. It labored at improving the incomplete brain, enabling it at a later period to become the seat of cognitive activities.” Clearly this formative period saw considerable biological variety. As Steiner put it, “Figuratively speaking, we may say that the soul ‘selected’ a certain number of such ancestors as seemed best fitted for receiving the external corporeal expression distinguishing modern man.”

Clearly we are dealing with more than natural selection, we have to reckon with spiritual selection as well! The capacity for morphological transformation of the ancestral species, or “reconstruction” as Steiner put it, was an expression of a spiritual principle. “Thus man is physically descended from the ‘archetype’ while spiritually he is descended from the ‘ancestral soul.’ ” Not all of the branches of the genealogical tree quickened by the life-sap of the “soul-ancestor” were “capable of subjecting themselves to the soul’s progress.” One of the branches not selected to bear the human fruit “deteriorated, and is now represented by the anthropoid apes.” Indeed, in Steiner’s view the whole of animal evolution has been influenced by spirit coming progressively to a more complete form of expression. As he put it: “When our earth came into existence, man was a purely spiritual being; he began his career by building for himself the simplest of bodies. The whole ladder of living creatures represents the outgrown stages through which he has developed his bodily structure to its present degree of perfection.” This is a radically anthropomorphic picture of evolution and one for which Professor Stephen Jay Gould would no doubt save his most eloquent ridicule. But perhaps I do him an injustice—he might show scholarly, if patronizing, historical interest in so quaint a theory! The Harvard evolutionist would be justified in disposing of Steiner in a cloud of ink if Steiner’s vision were of an egocentric anthropomorphism which saw in mankind the pinnacle and goal of creation. But that was not Steiner’s position. Humanity’s unique position in nature is solely by virtue of human beings’ possessing an individualized spirit.

The whole of nature is imbued with spirit, but what even the animals lack, despite their sentience and states of consciousness, is individualized spirit. In animals, spirit comes to expression at the species or group level. One could say, therefore, that species rather than individuals evolve. Humans, as a species, have also evolved but only individual humans evolve as individuals, what we would normally call individual personal or moral development, in other words, development of new faculties through their own active endeavor. Within limits animals can learn from experience, we may also train them as juveniles to perform certain behaviors, but we cannot say that animals develop themselves with conscious intention. The story of human evolution is an account of human

ancestors increasingly acquiring this ability, the ability to direct their own development.

Central to Steiner's account of evolution is the assumption of an inherent meaning in creation because he saw the world imbued with spirit. And that spirit comes to expression in life and in living beings at all levels of existence. It comes to individualized expression in human beings. Spirit too has evolved. The challenge of anthroposophy is to recognize the spirit at work in the living world and to do so with the very human faculties that have evolved in us. The challenge is to establish a science free of the limitations materialism imposes on human thought and to do so with the very means that uphold materialism itself—the human mind and its powers of perception, insight and thinking.

The unique position humans have in creation lies in the very fact that they possess spirit in individualized form within them and this gives them incredible power over the rest of creation. This power comes through our ability to think and manipulate the world. It has taken a long time to emerge but it has now well and truly arrived! Possession of such spiritual powers of thought is from where human freedom and responsibility come. To deny the existence of the spirit, or the individual human spirit, is to deny ultimate responsibility. From where does the materialist derive his or her sense of responsibility for nature? Merely from self-interest or rationality? That hardly suffices when it comes to tough choices.

The materialist can only choose egotistically. There is no true altruism for the materialist. There is no higher truth at all, only natural selection. In the somewhat dated terminology of 1905 Steiner concluded the lecture I have quoted from above, with the following thoughts: "Thus does the materialist mark the whirling atoms in stone, in plant, in animal and in man too, in every work of art, and claims for himself a knowledge of a monistic cosmogony that has overcome the ancient superstitions. Yet [anthroposophists] have a monistic cosmogony too, and we can say, in the same words that Haeckel uses, that we see God in the stone, in the plant, in the beast, and in man; but what we see are no whirling atoms, but the living God, the spiritual God, whom we seek outside in nature, because we can also seek Him within ourselves."

The God within ourselves is the highest principle towards which we can aspire. The core of our being is an aspect of this spiritual principle and it is this core that works through evolution. It is this spiritual core that gives life its meaning, and its trend is to manifest itself ever more completely. We can only act out of the reality of this principle if we act out of freedom, that is, free from all determining factors, whether external or internal. This state of freedom is not easily attained. Yet for the sake of the earth, for world evolution—not for the meaningless egotistical motivation of self preservation and the mere continuation of our genes—we must strive for this freedom. The human spirit is

the very antithesis of egotism, and egotism is the curse of materialism. Nor is this kind of spirit much of an intellectual comfort, more an open ended and expanding challenge of responsibility. The search for this truth is also a path that begins in wonder and leads into ever-deeper levels of reverence.

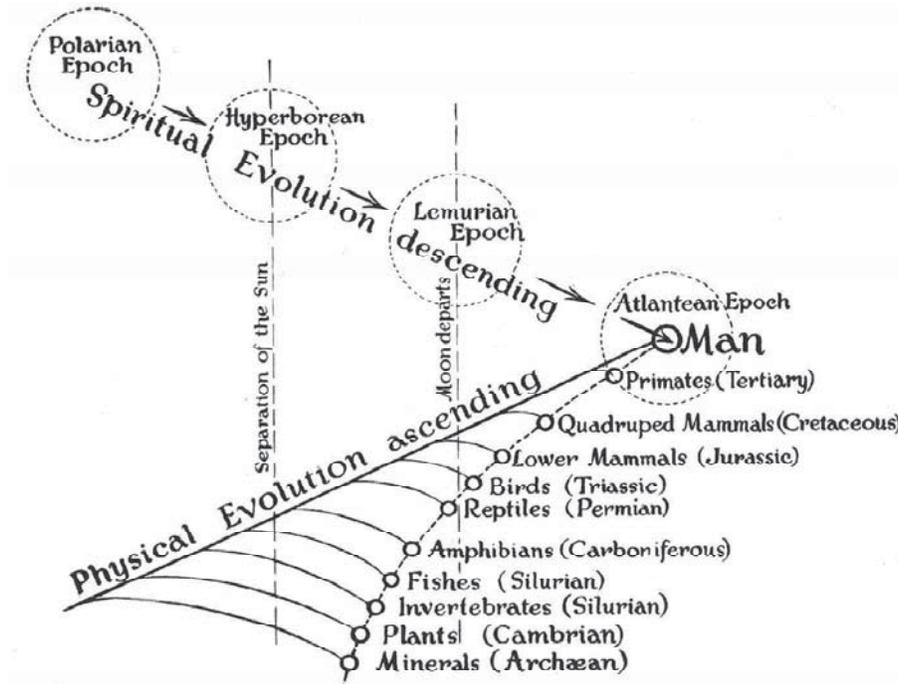


Chart from Poppelbaum's *Man and Animal*

Polarian – Azoic geological era, Hyperborean – Palaeozoic, Lemurian – Mesozoic, Atlantean – Tertiary, Post-Atlantean – Diluvium (glacial drift) and Alluvium

In amphibians the primary sense is vision; in reptiles olfaction (smell) is more important. In most mammals auditory faculties are added to olfaction and vision. In primates olfaction is less dominant but there is a dramatic increase in stereoscopic and color vision [p.140]. Primates and other social mammals, and probably the large-brained cetaceans (whales and dolphins), have the faculty to create complex spatial mental-maps of their habitats as well as being able to keep track of the even more complex social behavior of their fellows. Hand in hand with the increase in representational ability goes the increase in possible behavioral responses, since more information gives more options. Animals with greater representational powers have greater freedom of behavior—indeed these two faculties must develop in tandem through reciprocal feedback. This gives us a good example of directionality in evolution, a trend towards greater behavioral flexibility and at the same time a progressive distancing of the animal from a direct relationship to its environment, since more layers of cognitive processing separate the animal from immediate interaction with the external world. This is a clear trend towards emancipation.

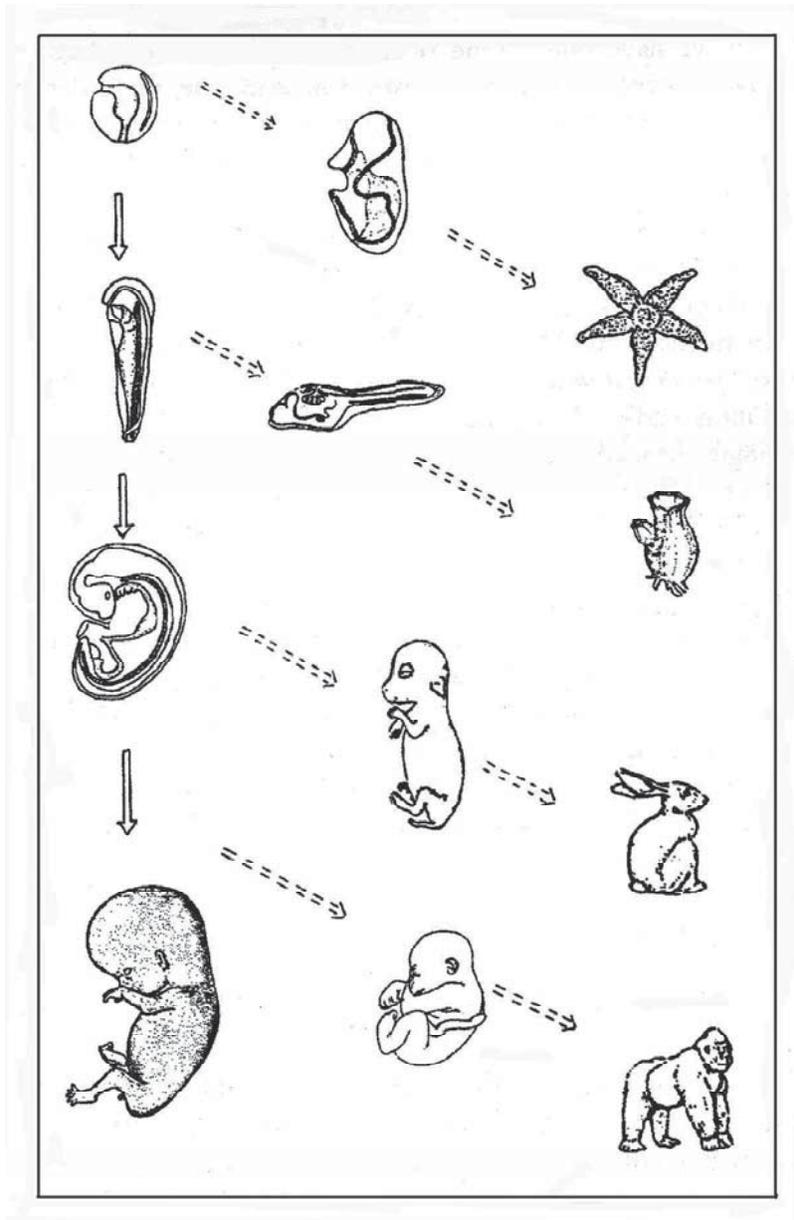


Diagram of the main line of evolution (beginning with the larva of an aquatic animal and ending with a human fetus) and its side branches.

[Note: Contemplating the embryonic forms in the left column of the chart above enables us to project our imaginations back to the main line of direct “unspecialized” ancestors the human spirit formed to gradually manifest and reveal itself.]

The column [down] on the left represents the evolutionary “mainstream,” which displays minimal specialization but longer retention of traits from earlier phases. This sequence, rather than being seen as an actual line of evolution (since of course embryos or larvae are not descended from each other), should be

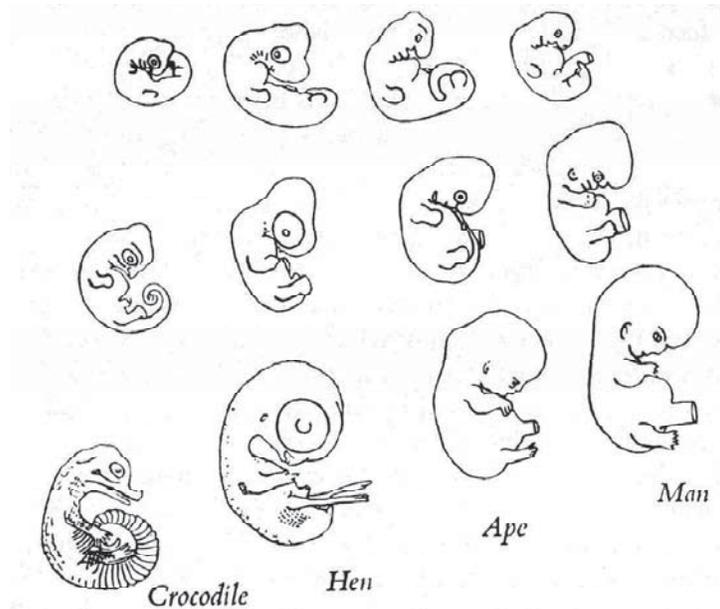
understood in the sense ... that ... the traits that appear first are more general and common, while more specific characteristics appear only later....

Figure 176 depicts lines of animal specialization as branching off [across] to the right. (In each instance, both fetal or juvenile and adult forms are shown.) These lines of evolution constitute deviations from the mainstream. The earlier the separation, the more extensive the consequences.

[Row 1 across:] The mainstream evolves from a very simple form that is best described as that of an unspecialized marine invertebrate larva.... The specialized line that evolves from this form leads to the echinoderms and transforms the neural crests into the larva's organs of locomotion. The larva later undergoes a dramatic metamorphosis to become an adult echinoderm—a starfish, for example:

[Row 2 across:] ... the next form in the mainstream can be characterized as an unspecialized tunicate larva that retains and further develops traits from the previous stage ... [Its] notochord exists not only in sea squirt larvae but also in the early embryonic stages of all vertebrates, where it serves as the precursor of the spine.

[Row 4 across:] ... The higher primates, the last species to abandon the evolutionary mainstream, are the least specialized of all animals. Their fetal and juvenile stages include characteristics that did not emerge until late in the evolutionary mainstream ... characteristics, which indicate that apes are descended from humanlike forms, are lost in adult specimens as a result of specialization processes.



Embryonal stages of the crocodile, hen, ape, and man compared, illustrating the law of retardation.

Bibliography

relating to such topics as Neotony, Paedomorphism, Fetalisation, Retardation, Heterochrony, etc.

See:

Poppelbaum – *A New Zoology*

Kranich – *Beyond Darwin*

Gould – *Ontogeny and Phylogeny*

McNamara – *Shapes of Time: The Evolution of Growth and Development*

Bromhall – *The Eternal Child*

Glossary

Heterochrony: An evolutionary change in the timing of development affecting the rate of development or the appearance of a feature in a descendant form; differentiated development of an organism, as opposed to a uniform development.

Retardation: A slowing down of development so that a feature or trait appears later in a descendant than it did in the ancestor.

Recapitulation: Passing through ancestral adult stages in embryonic and juvenile development of descendants. The “German Darwin” Ernst Haeckel postulated that ontogeny (the development of the individual) recapitulates phylogeny (the development of the species)—see Gould’s book.

Neoteny: The retention of fetal or juvenile traits into adulthood by retardation of developmental processes. Same as Paedomorphosis.

Paedomorphism: The retention of fetal or juvenile traits into adulthood by retardation of developmental processes.

Fetalisation: Bolk’s term for neotony or paedomorphism. But with an emphasis on the retention of fetal traits.

McNamara’s three major developmental trends:

Peramorphosis is a condition where growth or development proceeds beyond that observed in the ancestral condition;

Paedomorphosis is a condition where development does not reach the state observed in the ancestral condition

Hypermorphosis (a form of peramorphosis) is a condition where not only does growth and development surpass the ancestral condition, but growth and development proceeds longer than in the ancestral condition.

Shapes of Time: The Evolution of Growth and Development

by Kenneth J. McNamara, Senior Curator of Invertebrate Paleontology at the Western Australian Museum in Perth

Heterochrony refers to changes in the rate and timing of growth and development events or patterns. Besides genetic variation and natural selection, paleontologist McNamara argues that heterochrony plays a key role in the evolution, complexity, and diversity of the biosphere throughout Earth's history. He shows how changes in size, shape, and behavior during animal ontogeny have resulted in the speciation of, and general trends in, life forms.

Critical questions with which Waldorf teachers must come to terms:

Is the Human Being an Animal?

Is the Brain a Computer?

Is the Heart just a Pump?