
Man of the Future

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Source: *Theory Into Practice*, Apr., 1969, Vol. 8, No. 2, Teaching the Young to Love (Apr., 1969), pp. 72-75

Published by: Taylor & Francis, Ltd.

Stable URL: <https://www.jstor.org/stable/1475253>

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Man of the Future

Loren Eiseley

There are days when I may find myself unduly pessimistic about the future of man. Indeed, I will confess that there have been occasions when I swore I would never again make the study of time a profession. My walls are lined with books expounding its mysteries, my hands have been split and raw with grubbing into the quicklime of its waste bins and hidden crevices. I have stared so much at death that I can recognize the lingering personalities in the faces of skulls and feel accompanying affinities and repulsions.

One such skull lies in the lockers of a great metropolitan museum. It is labeled simply: Strandlooper, South Africa. I have never looked longer into any human face than I have upon the features of that skull. I come there often, drawn in spite of myself. It is a face that would lend reality to the fantastic tales of our childhood. There is a hint of Wells's *Time Machine* folk in it—those pathetic, childlike people whom Wells pictures as haunting earth's autumnal cities in the far future of the dying planet.

Yet this skull has not been spirited back to us through future eras by a time machine. It is a thing, instead, of the millennial past. It is a caricature of modern man, not by reason of its primitiveness but, startlingly, because of a modernity outreaching its own. It constitutes, in fact, a mysterious prophecy and warning. For at the very moment in which students of humanity have been sketching their concept of the man of the future, that being has already come, and lived, and passed away.

We men of today are insatiably curious about ourselves and desperately in need of reassurance. Beneath our boisterous self-confidence is fear—a growing fear of the future we are in the process of creating. In such a mood we turn the pages of our favorite magazine and, like as not, come straight upon a description of the man of the future.

The descriptions are never pessimistic; they always, with sublime confidence, involve just one variety of mankind—our own—and they are always subtly flattering. In fact, a distinguished colleague of mine who was adept at this kind of prophecy once allowed a somewhat etherealized version of his own lofty brow to be used as an illustration of what the man of the future was to look like. Even the bald spot didn't matter—all the men of the future were to be bald, anyway.

Occasionally I show this picture to students. They find it highly comforting. Somebody with a lot of brains will save humanity at the proper moment. "It's all right," they say, looking at my friend's picture labeled "Man of the Future." "It's O.K. Somebody's keeping an eye on things. Our heads are getting bigger and our teeth are getting smaller. Look!"

Their voices ring with youthful confidence, the confidence engendered by my persuasive colleagues and myself. At times I glow a little with their reflected enthusiasm. I should like to regain that confidence, that warmth. I should like to but . . .

There's just one thing we haven't quite dared to mention. It's this, and you won't believe it. It's all happened already. Back there in the past, ten thousand years ago. The man of the future, with the big brain, the small teeth.

Where did it get him? Nowhere. **Maybe there isn't any future.** Or, if there is, maybe it's only what you can find in a little heap of bones on a certain South African beach.

Many of you who read this belong to the white race. We like to think about this man of the future as being white. It flatters our ego. But the man of the future in the past I'm talking about was not white. He lived in Africa. His brain was bigger than your brain. His face was straight and small, almost a child's face. He was the end evolutionary

product in a direction quite similar to the one anthropologists tell us is the road down which we are traveling.

In the minds of many scholars, a process of "foetalization" is one of the chief mechanisms by which man of today has sloughed off his ferocious appearance of a million years ago, prolonged his childhood, and increased the size of his brain. "Foetalization" or "pedomorphism," as it is termed, means simply the retention, into adult life, of bodily characters which at some earlier stage of evolutionary history were actually only infantile. Such traits were rapidly lost as the animal attained maturity.

If we examine the life history of one of the existing great apes and compare its development with that of man, we observe that the infantile stages of both man and ape are far more similar than the two will be in maturity. At birth, as we have seen, the brain of the gorilla is close to the size of that of the human infant. Both newborn gorilla and human child are much more alike, facially, than they will ever be in adult life because the gorilla infant will, in the course of time, develop an enormously powerful and protrusive muzzle. The sutures of his skull will close early; his brain will grow very little more.

By contrast, human brain growth will first spurt and then grow steadily over an extended youth. Cranial sutures will remain open into adult life. Teeth will be later in their eruption. Furthermore, the great armored skull and the fighting characters of the anthropoid male will be held in abeyance.

Instead, the human child, through a more extended infancy, will approach a maturity marked by the retention of the smooth-browed skull

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of childhood. His jaws will be tucked inconspicuously under a forehead lacking the huge, muscle-bearing ridges of the ape. In some unknown manner, the ductless glands which stimulate or inhibit growth have, in the course of human evolution, stepped down the pace of development and increased the life span. Our helpless but well-cared-for childhood allows a longer time for brain growth and, as an indirect consequence, human development has slowly been steered away from the ape-like adulthood of our big-jawed forebears.

Modern man retains something of his youthful gaiety and nimble mental habits far into adult life. The great male anthropoids, by contrast, lose the playful friendliness of youth. In the end the massive skull houses a small, savage, and often morose brain. It is doubtful whether our thick-skulled forerunners viewed life very pleasantly in their advancing years.

We of today, then, are pedomorphs—the childlike, yet mature products of a simian line whose years have lengthened and whose adolescence has become long drawn out. We are, for our day and time, civilized. We eat soft food, and an Eskimo child can outbite us. We show signs, in our shortening jaws, of losing our wisdom teeth. Our brain has risen over our eyes and few, even of our professional fighters, show enough trace of a brow ridge to impress a half-grown gorilla. The signs point steadily onward toward a further lightening of the skull box and to additional compression of the jaws.

Imagine this trend continuing in modern man. Imagine our general average cranial capacity rising by two hundred cubic centimeters while the face continued to reduce proportionately. Obviously we would possess a much higher ratio of brain size to face size than now exists. We would, paradoxically, resemble somewhat our children of today. Children acquire facial prominence late in growth under the endocrine stimulus of maturity. Until that stimulus occurs, their faces bear a smaller ratio to the size of the brain case. It was so with these early South Africans.

But no, you may object, this whole process is in some way dependent upon civilization and grows out of

it. Man's body and his culture mutually control each other. To that extent we are masters of our physical destiny. This mysterious change that is happening to our bodies is epitomized at just one point today, the point of the highest achieved civilization upon earth—our own.

I believed this statement once, believed it wholeheartedly. Sometimes it is so very logical I believe it still as my colleague's ascetic, earnest, and ennobled face gazes out at me from the screen. It carries the lineaments of my own kind, the race to which I belong. But it is not, I know now, the most foetalized race nor the largest brained. That game had already been played out before written history began—played out in an obscure backwater of the world where sails never came and where the human horde chipped flint as our ancestors had chipped it northward in Europe when the vast ice lay heavy on the land.

These people were not civilized; they were not white. But they meet in every major aspect the physical description of the man of tomorrow. They achieved that status on the raw and primitive diet of a savage. Their delicate and gracefully reduced teeth and fragile jaws are striking testimony to some strange inward hastening of change. Nothing about their environment in the least explains them. They were tomorrow's children surely, born by error into a lion country of spears and sand.

Africa is not a black man's continent in the way we are inclined to think. Like other great land areas it has its uneasy amalgams, its genetically strange variants, its racial deviants whose blood stream is no longer traceable. We know only that the first true men who disturbed the screaming sea birds over Table Bay were a folk that humanity has never looked upon again save as their type has wavered into brief emergence in an occasional mixed descendant. They are related in some dim manner to the modern Kalahari Bushman, but he is dwarfed in brain and body and hastening fast toward eventual extinction. The Bushman's forerunners, by contrast, might have stepped with Weena out of the future eras of the Time Machine.

Widespread along the South African coast, in the lowest strata of

ancient cliff shelters, as well as inland in Ice Age gravel and other primeval deposits, lie the bones of these unique people. So remote are they from us in time that the first archaeologists who probed their caves and seashore middens had expected to reveal some distant and primitive human forerunner such as Neanderthal man. Instead their spades uncovered an unknown branch of humanity which, in the words of Sir Arthur Keith, the great English anatomist, "outrivals in brain volume any people of Europe, ancient or modern . . ."

But that is not all. Dr. Drennan of the University of Capetown comments upon one such specimen in anatomical wonder: "It appears ultramodern in many of its features, surpassing the European in almost every direction. That is to say, it is less simian than any modern skull." This ultramodernity Dr. Drennan attributes to the curious foetalization of which I have spoken.

More fascinating than big brain capacity in itself, however, is the relation of the cranium to the base of the skull and to the face. The skull base, that is, the part from the root of the nose to the spinal opening, is buckled and shortened in a way characteristics of the child's skull before the base expands to aid in the creation of the adult face. Thus, on this permanently shortened cranial base, the great brain expands, bulging the forehead heavily above the eyes and leaving the face neatly retracted beneath the brow. There is nothing in this face to suggest the protrusive facial angle of the true Negro. It is, as Dr. Drennan says, "ultramodern," even by Caucasian standards. The bottom of the skull grew, apparently, at a slow and childlike tempo while the pace-setting brain lengthened and broadened to a huge maturity.

When the skull is studied in projection and ratios computed, we find that these fossil South African folk, generally called "Boskop" or "Boskopoids" after the site of first discovery, have the amazing cranium-to-face ratio of almost five to one. In Europeans it is about three to one. This figure is a marked indication of the degree to which face size had been "modernized" and subordinated to brain growth. It is true that Dr. Ronald Singer has recently

contended that the "Boskop" people cannot be successfully differentiated from the Bushman because Boskopoid features can be observed in this latter group, but even he would not deny the appearance of the peculiarly pedomorphic and ultrahuman features we have been discussing. At best, he would contend, in contrast to Keith and Drennan, that these characters have emerged in a sporadic fashion throughout the racial history of South Africa. By contrast, the facial structure of existing Caucasians, advanced though we imagine it, has only a mediocre rating.

The teeth vary a little from the usual idea about man of the future, yet they, too, are modern. Our prophecies generally include the speculation that we will, in time, lose our third molar teeth. This seems likely indeed, for the tooth often fails to erupt, crowds, and causes trouble. The Boskop folk had no such difficulty. Their teeth are small, neatly reduced in proportion to their delicate jaws, and free from any sign of the dental ills that trouble us. Here, in a hunter's world that would seem to have demanded at least the stout modern dentition of the Congo Negro, nature had decreed otherwise. These teeth could have nibbled sedately at the Waldorf, nor would the customers have been alarmed.

With the face, however, it would have been otherwise. In its anatomical structure we observe characters which relate these people both with the dwarf modern Bushman and to some ancient Negroid strain distinct from the West Coast blacks. We believe that they had the tightly-kinked "pepper-corn" hair of the Bushman as well as his yellow-brown skin. A branch of the Negro race has thus produced what is actually, so far as we can judge from the anatomical standpoint, one of the most ultrahuman types that ever lived! Had these characters appeared among whites, they would undoubtedly have been used in invidious comparisons with other "lesser" races.

We can, of course, repeat the final, unanswerable question: What did this tremendous brain mean to the Boskop people? We can marvel over their curious and exotic anatomy. We can wonder at the mysterious pow-

ers hidden in the human body, so potent that once unleashed they brought this more than modern being into existence on the very threshold of the Ice Age.

We can debate for days whether that magnificent cranial endowment actually represented a superior brain. We can smile pityingly at his miserable shell heaps, point to the mute stones that were his only tools. We can do this, but in doing it we are mocking our own rude forefathers of a similar day and time. We are forgetting the high artistic sensitivity which flowered in the closing Ice Age of Europe and which, oddly, blossomed here as well, lingering on even among the dwarfed Bushmen of the Kalahari. No, we cannot dismiss the Boskop people on such grounds, for even remarkable potential endowment cannot create high civilization overnight.

What we can say is that perhaps the unloosed mechanism ran too fast, that these people may have been ill-equipped physically to compete against the onrush of more ferocious and less foetalized folk. In a certain sense the biological clock had speeded them out of their time and place—a time which ten thousand years later has still not arrived. We may speculate that even mentally they may have lacked something of the elemental savagery of their competitors.

Their evolutionary gallop has led precisely nowhere save to a dwarfed and dying folk—if, with some authorities, we accept the later Bushmen as their descendants. This, then, was the logical end of complete foetalization: a desperate struggle to survive among a welter of more prolific and aggressive stocks. The answer to the one great question is still nowhere, still nothing. But there in the darkened laboratory after the students have gone, I look once more at the exalted photograph of my friend upon the screen, noting character by character the foetalized refinement by which the artist has attempted to indicate the projected trend of future development—the expanded brain, the delicate face.

I look, and I know I have seen it all before, reading, as I have long grown used to doing, the bones through the living flesh. I have seen this face in another racial guise in

another and forgotten day. And once again I grow aware of that eternal flickering of forms which we are now too worldly wise to label progress, and whose meaning forever escapes us.

The man of the future came, and looked out among us once with wistful, if unsophisticated eyes. He left his bones in the rubble of an alien land. If we read evolution aright, he may come again in another million years. Are the evolutionary forces searching for the right moment of his appearance? Or is his appearance itself destined always, even in the moment of emergence, to mark the end of the drama and foretell the extinction of a race?

Perhaps the strange interior clockwork that is here revealed as so indifferent to environmental surroundings has set, after all, a limit to the human time it keeps. That is the real question propounded by my friend's fine face. That is the question that I sometimes think the Boskop folk have answered. I wish I could be sure. I wish I knew.

Whatever else these skulls or those of occasional variant moderns may tell us, one thing they clearly reveal: Those who contend that because of present human cranial size, and the limitations of the human pelvis, man's brain is no longer capable of further expansion, are mistaken. Cranial capacities of almost a third more than the modern average have been occasionally attained among the Boskop people and even in rare individuals among other, less foetalized races. The secret does not lie in the size of the brain before birth; rather, as we have seen, it is contained in that strange spurt which in the first year of life carries man upward and outward into a social world from which his fellow beings are excluded. Whether that postnatal expansion is destined to be further enhanced in the long eras to come there is no telling, nor, perhaps, does it matter greatly. For in the creation of the social brain, nature, through man, has eluded the trap which has engulfed in one way or another every other form of life on the planet. Within the reasonable limits of the brain that now exists, she has placed the long continuity of civilized memory as it lies packed in the world's great libraries. The need is

not really for more brains, the need is now for a gentler, a more tolerant people than those who won for us against the ice, the tiger, and the bear. The hand that hefted the ax, out of some old blind allegiance to the past fondles the machine gun as lovingly. It is a habit man will have to break to survive, but the roots go very deep.

I once sat, a prisoner, long ago, and watched a peasant soldier just recently equipped with a submachine gun swing the gun slowly into line with my body. It was a beautiful weapon and his finger toyed hesitantly with the trigger. Suddenly to possess all that power and then

to be forbidden to use it must have been almost too much for the man to contain. I remember, also, a protesting female voice nearby—the eternal civilizing voice of women who know that men are fools and children, and irresponsible. Sheepishly the peon slowly dropped the gun muzzle away from my chest. The black eyes over the barrel looked out at me a little wicked, a little desirous of better understanding.

“Thompson, Tomé-soñ,” he repeated proudly, slapping the barrel. “Tomé-soñ.” I nodded a little weakly, relaxing with a sigh. After all, we were men together and under-

stood this great subject of destruction. And was I not a citizen of the country that had produced this wonderful mechanism? So I nodded again and said carefully after him. “Thompson, Tomé-soñ. **Bueno, si muy bueno.**” We looked at each other then, smiling a male smile that ran all the way back to the Ice Age. In academic halls since, considering the future of humanity, I have never been quite free of the memory of that soldier's smile. I weigh it mentally against the future whenever one of those delicate forgotten skulls is placed upon my desk.

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