Coon's Theory on *The Origin of Races*

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RÉSUMÉ

Dans son étude sur l'origine des races, le professeur Coon n'a eu recours qu'à deux catégories, *Homo erectus* et *Homo sapiens*. Ce choix s'avère inadéquat et, conséquemment, la solution du problème de l'émergence de l'*Homo sapiens*, telle que proposé dans cet ouvrage, est factice. Il est à noter, de plus, que le professeur Coon ne prône pas, comme on le pense communément, l'évolution parallèle des races, mais il voit celle-ci comme la conséquence d'une diffusion de gènes en provenance du groupe caucasien.

Carleton Coon's monumental book *The Origin of Races* has received well deserved recognition as an outstanding compilation of data dealing with fossil hominids.* On the other hand, few of the major reviews of this book have not expressed misgivings about the way in which Coon has interpreted this material (Birdsell 1963; Dobzhansky 1963; Montagu 1963; Oshinsky 1963). Most of the criticism has concentrated on his thesis that the formation of the major geographical races, as he has defined them, preceded the transition of man *(Homo)* from the *Homo erectus* to his modern grade of development. The statement in the concluding chapter of his book that "*Homo erectus* (after already being divided into five geographic races or subspecies) then evolved into *Homo sapiens* not once but five times, as each subspecies, living in its own territory, passed a critical threshold from a more brutal to a more *sapient* state", (Coon, p. 658) generally has been interpreted as a proposal of parallel evolution within a number of stocks that were geographically isolated from one another. It has been pointed out that the possibility of such

* This article is based on comments concerning Coon's book which I have been expressing for some time in discussions with friends and colleagues. Ronald Cohen, one of the assistant editors of *Anthropologica*, suggested that it would be worthwhile to write up these comments in the form of a brief article.

parallel evolution is "vanishingly small" (Dobzhansky 1963) and that differences in the rate of evolution for Coon's various stocks would involve extraordinary disharmonies in the tempo of hominid evolution (Birdsell 1963:184). Unfortunately, with the partial exception of Birdsell (185), these reviews have failed to emphasize and explore another major current of thought which runs through Coon's book and one which, in my opinion, is vital for understanding the full meaning of *The Origin of Races*. It is not surprising that they should have done so since the material concerning this second current of thought is found tucked away in nooks and crannies of Coon's chapters, is often expressed in the form of vague hypotheses, and is not explicitly enunciated in the final chapter where it should have been set beside the theory of the individual *sapienization* of the different major races, which it complements. Only when this material has been collected together can the real implications of Coon's work be appreciated.

To begin with, despite statements to the contrary, neither the developmental hypothesis of Coon nor that of his predecessor, Franz Weidenreich (1946), whose theory of human evolution Coon is essentially reworking and updating, is in the final analysis a theory of parallel evolution. Weidenreich may have believed in orthogenesis (Dobzhansky 1963: 365), but a reading of the second chapter of *Apes, Giants and Man* will show that he did not depend on it to explain how his races evolved from the *Homo erectus (Archanthropine)* to the modern *Homo sapiens (Neoanthropine)* stage while yet remaining a single species. A close examination of his chart on page 30 entitled "Pedigree of the Hominidae" reveals not only horizontal lines separating grades of evolution and vertical lines separating the "racial" lines of biological development, but also oblique lines which the text tells us represent "interchange, as a graphic presentation of the conception of the hominid groups as one species". Clearly, Weidenreich allowed for gene flow as a factor in the sapienization of hominids in different areas, and thus his claim was a more modest and reasonable one than it is often represented. What he was saying was that gene flow between different regions, while great enough to account for brain development, cranial change and the other physiological alterations that marked the

emergence of *Homo sapiens* did not result in the swamping of various other traits already present in the gene pools of the various major geographical regions of the Old World. Coon's treatment of this aspect of sapienization does not differ from Weidenreich in principle, although Coon may be less liberal in allowing for gene flow (see, e.g. Weidenreich: 67-91). A careful perusal of *The Origin of Races* shows that Coon's five-fold evolution of *Homo sapiens* does not necessarily mean five parallel and independent evolutions. Again and again, as we shall see, Coon suggests gene flow from one region to another as the factor which initiates the crossing over from one grade to another. Presumably the development of the nervous system and alterations in endocrine functions (major aspects of sapienization according to Coon) would have a selective advantage anywhere and a few genes introduced from outside would multiply rapidly in the recipient population. On the other hand, traits like the architecture of the teeth, which would have a neutral selective value, or skin colour, which under some conditions might have a negative selective value, would either be eliminated or not seriously alter the appearance of the population.[1] The most serious error which both Coon and Weidenreich made in pursuing this line of argument, and one which has resulted in much of the opposition to their theory, has been to suggest that the races or subspecies of the present day existed prior to the evolution of *Homo sapiens* as a species. A more modest and accurate characterization of the results of their work would have been to suggest that certain traits characteristic of modern populations already appear to have been present within the early man populations that occupied similar geographic regions. But, however unfortunately their conclusions were phrased, neither Weidenreich's nor Coon's theory depends upon parallel evolution, which their critics rightly claim is improbable. Instead, they both allow for gene flow between the major geographic regions but hold that it "need not have been extensive in order to have stimulated general evolutionary change" (Coon, 486).

There is, however, an important difference in the manner

[1] Birdsell's review contains some important remarks concerning this proposal (p. 185).

in which Coon and Weidenreich present their case. Both discuss evolution within a single polytypic species. As paleontologists are well aware, the differentiation of successional species within a single line of development such as they are studying is largely an arbitrary and heuristic device, since the process of development is continuous and unbroken. Weidenreich formally recognised this fact by setting up ten evolutionary phases to represent the transition between *Homo erectus* and modern man. These phases were grouped into three larger divisions called *Archanthropinae, Paleoanthropinae and Neoanthropinae.* These correspond roughly to *Homo erectus,* the early forms of *Homo sapiens* (Neanderthaloids, Pre-sapiens, etc.) and *Homo sapiens sapiens* respectively. There is no reason that grades should correspond with formal species divisions. As Coon clearly recognizes, a grade can be either larger or smaller, depending upon the problem under consideration. In spite of this, Coon has chosen to work within the framework of a two grade scheme based upon the division of the genus *Homo* into its two species *erectus* and *sapiens* (p. 336). Worse, the two divisions cease to be merely heuristic devices and Coon makes the crossing of the threshold from *erectus* to *sapiens* a matter of crucial importance. From this point on (p. 371) the book is largely concerned with determining when the hominids in each area passed the threshold from the *Homo erectus* grade to the *Homo sapiens* one.

After formulating this highly artificial problem, Coon proceeds to document his claim that man crossed the threshold of sapienization in different parts of the world at different times. In Europe all fossil finds from Swanscombe down to the present are accepted as *Homo sapiens* and Coon even goes so far as to suggest that the Heidelberg mandible, generally regarded as *Homo erectus* might also be *Homo sapiens* (p. 492). By all counts, assigning a possible *sapiens* status to this fragment is generous indeed. On the other hand the Solo and Rhodesian Man finds, which most paleontologists classify as *Neandertaloid* (and therefore as *Homo sapiens*) are assigned by Coon to the *Homo erectus* grade. The arbitrary nature of this classification is recognized by Coon himself when he notes that Pithecanthropus, Solo and living Australoids form a typological sequence which places "Solo almost exactly in the middle of the pro-

cession in both sexes, a grade (or a half grade if one prefers) above Pithecanthropus and below the aborigines" (p. 393). Likewise Weidenreich (1946: 40), who also classified Solo as an *Archanthropine (erectus),* took pains to point out that it was an extremely advanced form close to the upper threshold of the type. Noting the similarities between the Solo and Rhodesian finds, Weidenreich had no hesitation in classifying the latter as primitive Neanderthaloid. In short, by eliminating the intermediate grade used by Weidenreich and many others in their discussions of human evolution (which is done with little more than a paragraph of scant justification on p. 336), Coon freed himself to assign intermediate forms to either of his two grades in a fashion that often seems to be unduly arbitrary. Coon's preoccupation with establishing the priority of *Homo sapiens* in the Caucasoid line reaches a climax when he queries whether the Ting-tsun teeth and Changyang maxilla from the Late Middle or Upper Pleistocene in China are *Homo sapiens* or *Homo erectus.* Considering the scanty evidence, there is little reason to doubt that they are essentially Neanderthaloid (Chang 1962: 758).[2]

Clearly, by adopting a two grade classification Coon has not advanced the study of human evolution. Far too much energy is devoted to the artificial task of assigning the rather wide range of finds that are morphologically transitional between Java Man and Cro-Magnon above or below the arbitrary line that makes the division between two successional species. In order to support his claim that the first *Homo sapiens* evolved in the Caucasoid line Coon has played down the variation within these two arbitrarily defined grades, has assigned the rather primitive Neanderthaloid forms in Java and Rhodesia to the earlier of his grades and has treated everything in the Caucasoid area from the Heidelberg jaw on as potentially *Homo sapiens,* that is as sharing characteristics that "can be matched in most

[2] It is noteworthy that in the chart on page 335 both these finds are listed as Upper Pleistocene. Nevertheless in the text Coon notes that while Movius considers the Ting-tsun finds to be of Third Interglacial age, the Chinese discoverers consider them to be Middle Pleistocene. Moreover concerning Changyang he says "Chia, who described it, considers the fauna of this site to be of Late Middle Pleistocene date, and to my knowledge no one has yet challenged this allocation" (p. 461).

respects among living peoples". One cannot help reading this claim of priority in the light of a statement made in the preface of *The Origin of Races* to the effect that "it is a fair inference that ...the subspecies which crossed the evolutionary threshold into the category of *Homo sapiens* the earliest have evolved the most, and that the obvious correlation between the length of time a subspecies has been in the *sapiens* state and the levels of civilization attained by some of its populations may be related phenomena" (pp. 9, 10).

Coon's drama of the evolution of *Homo sapiens* does not end, however, with indicating the priority of the Caucasoid racial line. It is at this point that we must again consider the "submerged plot". At one point Coon suggests that we may never know if Sinanthropus "alone and unaided" underwent the mutations that transformed him from *Homo erectus* into *Homo sapiens* or if "someone else who had earlier undergone this process" assisted him through mixture (p. 481). He also noted the probable lack of a common border along which the Caucasoids and Mongoloids might have exchanged genes (p. 485). A few pages later, however, he is considering the possibility that sometime during or after the last Interglacial period Caucasoid *sapiens* expanded eastward and entered "the homelands of Sinanthropus and the Mongoloids". Similarities are noted between the tools from Ting-tsun and from Mousterian sites in the west. Noting that "Chinese paleontologists and archaeologists have found no clearly *sapiens* skeletons in their country which are older than the Fen Valley (Ting-tsun) flints", he suggests that "if the Chinese population had not yet crossed the *sapiens-erectus* barrier, this injection of genes could have given them the chromosomal equipment to initiate such a transition" (p. 522). Thus the full significance of his earlier doubts about the status of Ting-tsun and Changyang becomes apparent. At the same time he suggests that a back flow of "Sinanthropus-based genes" could account for the "Sinanthropus-like" features found in some of the fossil men of the last Interglacial period in Europe (sic!) such as mandibular torus, shovel incisors, dental pearls and the degree of facial flatness. However, another, and for Coon, more plausible explanation for these primitive features is offered later.

If Sinanthropus may have become a *sapiens* by the grace of Caucasoid genes, Coon suggests that the Solo population of Java may have become so at third hand as the result of an influx of genes from their biological trading partners, the Mongoloids. After examining the later skeletal material, particularly from Wadjak, Coon concludes that "the transition from *Homo erectus* to *Homo sapiens* in this quadrant (it occurs to me) was caused by gene flow from a Mongoloid source. This is suggested by, among other things, the extraordinary facial flatness of Wadjak, and by the fact that during the entire span of human history as we know it, the Australoids and Mongoloids were in contact...over an open frontier" (p. 427). Indeed, far from being a parallel evolutionist, Coon appears to be quite an enthusiast for genetic diffusion, provided that this diffusion is not great enough to swamp the racial traits he has already observed at the *erectus* level. According to Coon, it is not only probable that the Caucasoids became *sapiens* first, but also there is a good chance that the sapienization of the two other Asiatic lines of development was the result of an influx of Caucasoid genes.

Turning from the "principal schools" of mankind in Eurasia to man's "indifferent kindergarten" in Africa (p. 656) Coon takes considerable pains to point out the lateness of the transition from *erectus* to *sapiens* on that continent. Discussing the "Sinanthropuslike" features of Saccopastore and other European Neanderthals, Coon notes three possible explanations. One, which we have already mentioned, is an infusion of genes from the primitive descendants of Sinanthropus in China; the other two are local mutation and natural selection and a penetration of "Sinanthropus-like" genes from North Africa where he considers that the ancestors of the Capoid peoples were then living. He notes that a walk from Cape Bon in Africa to Sicily would have been shorter than from China to Europe and suggests that "a penetration of Sinanthropus-like genes from North Africa... seems the most likely" (p. 577). Referring to these same North African populations of *Homo erectus* he notes: "Whether they achieved the *sapiens* grade by the time the Caucasoid Mouillians invaded (not long before 10,000 B.C.) is unknown" (p. 600). "By the time of the Gottweig Interstadial a presumably Caucasoid people... may have penetrated northwest Africa. If the northwest Afri-

cans had not already become *sapiens* by local evolution, here was their opportunity to rise to the *sapiens* grade through gene flow and to acquire a measure of Caucasoid characteristics some 25,000 years before the arrival of the Mouillians" (p. 603). Noting that the Congoid (Negro) race is the "weakest warp" in his racial fabric he traces a "possible negro evolutionary line" from the Chellian-3 find through Rhodesian Man to the Cape Flats skull. The latter skull which may be no more than 5,000 years old is considered to have "crossed the *sapiens* threshold but not evolved very much further" (p. 632). He notes that this could have happened "either by a purely local evolutionary process or by gene flow from outside". But he quickly adds "I think we can rule out independent mutation as the cause of change, because the territory inhabited by this ancient line is fully exposed to contacts from the north" (p. 630).

Thus *The Origin of Races* is not a book that argues for the sapienization of pre-formed racial stocks through parallel evolution, although it does leave open the possibility that this might have happened in some cases. Man's skin and teeth may have crossed the dividing line between *Homo erectus* and *Homo sapiens* five times but the sum total of Coon's argument is that his central nervous system did so only once. This latter event took place within the Caucasoid racial line. A few genes of Caucasoid *sapiens stock,* when infused into the contemporary *Homo erectus* forms of the other racial lines were a sufficient stimulus for these groups to cross over to the *sapiens* grade without "swamping" their already formed racial characteristics. Thus gene flow seems to account for the human status of the Mongoloid, Australoid, Capoid and Negro races on the one hand, and a back flow of genes from the *erectus* grade in Africa or China accounts for the primitive characteristics found in the Neanderthal populations of Europe.

While Coon's use of gene flow helps to counter some of the objections raised to parallel evolution and grade-crossing at widely different periods, the picture which emerges when this aspect of his work is considered cannot be subject to less criticism. Coon's speculations are not only based on very little clear evidence but on a system of classification which is unsuited for a consideration

of the issues at hand. Yet on this basis we are asked to believe not only that the Caucasoid is the first and probably the most evolved *sapiens* but that it is through him that all others who are *sapiens* have become so. Heavy indeed has been the white man's burden!

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