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## A LINGERING CONTROVERSY: THE CASE FOR HOMO HABILIS

**ABSTRACT.** — *The H. habilis taxon, although introduced by L. S. B. Leakey some twenty years ago, has not yet gained general acceptance. This paper explores the origins of the controversy and shows how it illustrates the passage from unilinear to multilinear thinking in the study of human evolution.*

**RÉSUMÉ.** — *Bien que L. S. B. Leakey l'ait introduit il y a une vingtaine d'années, le concept d'Homo habilis n'est pas encore universellement accepté. Le présent article explique les origines de cette controverse et montre comment elle illustre le passage de l'unilinéaire au multilinéaire dans l'étude de l'évolution humaine.*

**KEY WORDS:** L. S. B. Leakey — Hominids — Polytypism — Taxonomy.

### 1. *Homo habilis* & Co: early hominids in Africa

East Africa is by far the best known fossil-bearing region in the world and an undisputed favorite for Plio-Pleistocene research. There are two reasons for this fact: first, prehistoric volcanic activity covered the organic remains with layers of datable minerals which, in becoming tuffs or basalts, ensured proper fossilization; second, tectonic movements peculiar to the Rift Valley system and powerful erosion factors brought numerous fossils close to ground surface, where they can be spotted and removed with comparative ease. This combination of datability and ready surface collection is unique so far, and suggests why so much emphasis is placed on East African excavations to the detriment of, say, South Africa, Europe, or South-East Asia: in East Africa at least, palaeoanthropological work pays off in discoveries which, if they are not always ground-breaking, are frequent and thereby heartening.

Louis Leakey began work at Olduvai in the 1930's, but it was not until his wife Mary found the cranium of *Zinjanthropus* (now *Australopithecus boisei*) in 1959 that East African research got off the ground and began to yield fossils at an exponential

rate. *Zinjanthropus*, K/Ar dated at 1.75 m.y.a., was associated with Oldowan tools ancestral to hand-axe (Acheulian) industries. Since then, in the last twenty years, the evidence for early hominids in East Africa has accumulated. The Omo Valley in Ethiopia has produced mammal and hominid fossils, as well as crude pebble tools; farther north, in the Hadar region, Maurice Taieb and Donald Johanson excavated Lucy (AL 288/1) in 1974 — the exceptionally complete (almost 40 %) skeleton of a female *A. africanus* dated at 3 m.y.a. A year later, in the same area (site AL 333), thirteen individuals were found together in a context also dated at 3 m.y.a. (Johanson and Taieb 1976), but unfortunately the research had to be discontinued because of the political unrest that swept over Ethiopia in 1977. Another spectacular discovery in East Africa was that of fossilized hominid footprints estimated 3.5 m.y. old at Laetoli (M. D. Leakey 1979), which literally took captivated audiences in the stride of our earliest ancestors. However, the undisputed star site in recent years has been East Lake Turkana, whose rich fossil beds have poured forth countless remains at the instigation of Richard Leakey and his well-trained team; yet problems in dating and interpreting these finds abound, as we shall see.



All this should not have us overlook South Africa's early hominids, which have come to light regularly, if at a slower pace than in East Africa, since Raymond Dart reported the Taung child in 1925. The early hominid situation in 1964 was therefore as follows: *A. africanus* was the earliest hominid in both East and South Africa, appearing about 3 m.y.a.; *A. robustus* appeared in both regions about 2 m.y.a. and became extinct about 1 m.y.a.; in East Africa *robustus* evolved into a "super-robust" form called *boisei*, which some view as a distinct species and others as the upper end of *robustus*' range of variation. This schema was just too simple to be true; and before long Leakey, Tobias, and Napier (1964: 8) came up with the description of a wholly new species:

Genus *Homo* Linnaeus

Species *habilis* sp. nov.

(Note: The specific name is taken from the Latin, meaning "able, handy, mentally skilful, vigorous". We are indebted to Prof. Raymond Dart for the suggestion that *habilis* would be a suitable name for the new species.)

Now, even though one needs a taxonomic way of representing a probable mutation, the naming of a new species is a serious affair in science; L. Leakey, notorious as he was for his impetuosity in the matter, must have been spurred to do so by powerful considerations. He considered that, as compared with the australopithecines, *H. habilis* exhibited:

- (i) a greater cranial capacity
- (ii) a lighter cranial vault
- (iii) a lesser postorbital constriction
- (iv) smaller cheek teeth and comparatively greater front teeth
- (v) a V-shaped, rather than U-shaped, dental arcade
- (vi) a more prominent midfacial region.

Many scientists did not take kindly to this explanation for reasons that will be considered below. To complicate things further, in 1975 R. Leakey found KNM-ER 3733, a calvarium of *H. erectus* type with a capacity estimated at between 600 and 900 cc, in association with a calvarium of *A. robustus* type (ER 406); the upper member of the Koobi Fora formation, where they were found, has been dated at between 1.6 and 1.3 m.y.a. (Leakey and Walker 1976). This leaves us with a situation where at least one African region (the East) had at some time four different hominids trotting along contemporaneously; if we must believe Leakey and Lewin (1978: 26), these were "individuals who lived between three million and one million years ago, and (...) represent two species of *Australopithecus* (*africanus* and *boisei*) and two of *Homo* (*habilis* and its probable descendant *erectus*)." Also, *A. robustus*, *H. habilis* and *H. erectus* co-existed for some time at Olduvai, as attested by the excavations of Bed II deposits (M. D. Leakey in Isaac and McCown 1976: 450). At this site *H. habilis* remains are associated with an Oldowan tool industry; *H. erectus* is

found in a context associated with primitive Acheulian hand-axes; as for *A. boisei*, "it seems unlikely that he was responsible for more than tool-using" (ibid.: 455).

This phase of the history of mankind is particularly confusing in comparison to the later period when *H. erectus* evolves into *H. sapiens* in Europe, Africa, and Asia — with only occasional departures from the expected range of variation, as in *neanderthalensis*. *H. habilis* thus stands right in the midst of the heated debate that accompanies the search for the first biocultural hominid.

## 2. Ever since L. S. B. Leakey: the controversy

Louis Leakey's attribution of his new find to *Homo* — and his concomitant revision of the definition of the genus to make it accept *habilis* more readily — triggered off violent reactions: "Even Louis' old ally Sir Wilfrid Le Gros Clark turned against him over the naming of *Homo habilis*, maintaining to his dying day that it was an australopithecine" (Cole 1975: 254). Further objections were raised on the grounds that the evidence was based on a small number of badly damaged fossils which "came from different places and times" (Gould 1977: 59): the older fragments could equally well be assigned to *A. africanus* while the younger ones were not much at variance with *H. erectus*. The general impression was of an ad hoc concoction. Furthermore, the dating was very insecure until the discovery of KNM-ER 1470 in 1972, the fossil skull which makes the strongest case for *habilis*, although it too is not immune to criticism: for example, the KBS tuff associated with it, first dated at 2.6 m.y.a., had to be revised to 1.8 m.y.a. (Curtis *et al.* 1975).

Species-naming can be the consequence of too great an enthusiasm, but we must also remember with Cole (1975: 16) that whereas "a new species attracts funds, further examples of new species do not": this practical consideration undoubtedly played a part in the genesis of *H. habilis*. However, it is probable that the attribution of genus *Homo* rather than *Australopithecus* to an obviously transitional type of fossil is based on ideological grounds: "Underlying Dr Leakey's many productive years in the field was the unshaken conviction that nothing so crude as an australopithecine could possibly have been ancestral to subsequent human forms" (Brace 1979: 33–34). In L. Leakey's views, *H. habilis* emphasized the tool-using aspect of man: thanks to this evolutionary device man could adapt to changing circumstances very rapidly instead of evolving a lengthy biological mutation, thereby separating himself more and more sharply from the other animals. As Leakey himself (1966: 1280) wrote: "I have never been able to accept the view that *Australopithecus* represents a direct ancestral stage leading to *H. erectus*, and I disagree even more strongly with the present suggestion of placing *H. habilis* between them." He even went on to posit "two distinct species of the genus *Homo* at a very early stage — one leading to *H. erectus* and sub-



sequent extinction, and the other to *H. sapiens*" (ibid.: 1281). Coupled with this bias was another one, just as forceful: "The Leakeys did not recognize a distinct 'gracile' species of australopiths in East Africa, the type which is known in South Africa as *Australopithecus africanus*" (Cole 1975: 299). This viewpoint explains in part the profusion of *habilis* remains which turned up on the Leakeys' sites; however, Richard Leakey has since dissociated himself from such a prejudice and acknowledges the presence of *africanus* (e.g., ER 1813).

Louis Leakey seems to have conveniently ignored the fact that the ability to make or use tools existed also in some australopithecines, thereby making them potentially *habile*. For a more objective criterion in the characterization of a *habilis* taxon one must turn to cranial studies: "the taxonomic status of the newly-recognized hominid species, *Homo habilis*, hinges at least partly on whether any australopithecine is likely to have possessed so large a cranial capacity as the type specimen of the proposed species" (Tobias 1968: 81).

Indeed *Homo habilis* "had a larger brain (600 cc on average, compared with just over 400 cc) and somewhat smaller teeth than *A. africanus*" (Pilbeam 1972: 9). But is it a sufficient reason for placing him in genus *Homo*? Is it not preferable to see in him, as indeed Pilbeam does, a transition form *Australopithecus habilis*, which dates back to 2 m.y.a. and is in part contemporaneous with *A. africanus* (himself going back to 5 m.y.a.)? The fossils L. Leakey christened *H. habilis*, dated at between 1.85 and 1.6 m.y.a., were the fragmentary remains of individuals possessing teeth within the range of variation of *africanus*, with a brain capacity averaging 650 cc, hand bones attesting to a powerful grip, and evidence for a good locomotion but a bent-kneed posture: all this puts *habilis* more within the range of *Australopithecus* than within that of *Homo* — especially when we consider the body size of the first specimens, very similar to *A. africanus*. This aspect is obviously not what L. Leakey (1966: 1280) had in mind when he wrote: "*H. habilis* (...), in its mandibular structure, is unquestionably of *Homo* type." In order to expound his theory that *habilis* was the direct ancestor of *sapiens*, with the australopithecines and *H. erectus* being side branches, L. Leakey was willing to extrapolate a great deal from the scanty remains that were the only evidence available to him. In fact, despite its larger cranial capacity, the lesser importance of the cheek teeth relative to the front teeth, the decrease in postorbital constriction and the absence of sagittal crest (which, in *robustus*, points to the presence of powerful chewing muscles adapted to a herbivorous diet), *H. habilis* as it was then known through insufficient samples could have been a variation of *A. africanus* attributable to sexual dimorphism.

Louis Leakey's position put the patience of many other scientists under undue strain, and the controversy began. Leakey's co-authors, Tobias and Napier, soon retracted part of the statements they

had made concerning the validity of *H. habilis*; in the same year they wrote a letter to *The Times* (5 June 1964), in which they confessed: "anatomy alone could not tell us whether the creature was a very advanced australopithecine or the lowliest hominine" (quoted in Cole 1975: 256). However, a few years later Tobias (1968: 90) estimated that the mean cranial capacity of *H. habilis* exceeded the mean for *A. africanus* by 159 cc, a difference he considered significant. Professional anthropologists were divided, some refuting the *habilis* concept altogether (Le Gros Clark), others accepting it (Tobias), still others (e.g., Campbell 1974: 348) treating *H. habilis* as a subspecies of *erectus*. Most commonly *habilis* is placed on the same evolutionary line as *A. africanus*, both branching off from *robustus*; see for instance J. D. Clark (in Isaac and McCown 1976), or Simons, Pilbeam, and Ettl (1969: 259), who conclude: "though the question may still be open, the present evidence favors placement of the Bed I "*Homo habilis*" material in genus *Australopithecus* and possibly in species *A. africanus* as well." On the other hand magazines such as *Time* (e.g., 7 Nov. 1977: 38–39), and such popular books as Sagan 1977 (pp. 91 ff) and Copens 1983 (pp. 99 ff) accept *habilis* without much reticence: for them the taxon is a convenient device to explain to their readers the emergence of the first man-looking hominid; it is an arbitrarily chosen "missing link" between the australopithecines and man. The association of *habilis*-type remains with artifacts different from those attributed to *Australopithecus* would be essential to sanction the new species' right to exist, as "it is probable that the mental qualities of the various types of fossil man are reflected more accurately by the implements which they were capable of fashioning than by the structure of their brain-cases" (Oakley 1959: 110).

This first controversy, based on a lack of substantial evidence, came to an end in 1972 when Richard Leakey found four crania of *Homo* type, one of which (KNM-ER 1470) was initially assigned an age of 2.6 m.y. and a mean cranial capacity of 810 cc: "The endocranial capacity and the morphology of the calvaria of KNM-ER 1470 are characters that suggest inclusion within the genus *Homo*, but the maxilla and facial region are unlike those of any known form of hominid" (Leakey 1973: 450). In view of these facts and others as well — e.g., that "the glenoid fossae and external auditory meati are positioned well forward by comparison with australopithecines" (ibid.: 448) — R. Leakey quite reasonably attributed the remains to *Homo sp. indet.*, thereby eschewing the taxonomic issue for the time being. His father, who believed that the genus *Homo* had a very old ancestry separate from *Australopithecus*, showed a delight that is easy to imagine: "the theories he had held for so long seemed to be completely vindicated: here, apparently, was *Homo*, the direct ancestor of modern man, way back in the earliest Pleistocene" (Cole 1975: 403). The new specimen was the only nearly complete skull of early *Homo*, morphologically close to *erectus* and contemporary with *Australopithecus*.



First dated at 2.6 m.y.a., it confirmed L. Leakey's cherished hunch; alas, this spectacular dating was short-lived: Curtis *et al.* (1975) brought the age of the KBS tuff — where ER 1470 and another cranium, ER 1590, had been found — down from  $2.61 \pm 0.26$  Myr to  $1.60 \pm 0.05$  Myr for one area, and  $1.82 \pm 0.04$  Myr for another.

However, the mystery of early *Homo* was beginning to prove attractive to some scientists, and inter-regional parallels were drawn. In South Africa, Swartkrans' *Telanthropus* was re-examined and compared to *A. robustus*: "The teeth are smaller and the jaws and face less robust. The cranium, as far as it is preserved, is more gracile and rounded, with less robust crests and ridges. There is a distinct possibility that this represents a second hominid species at Swartkrans" (Pilbeam 1972: 124). With *erectus*-like teeth but a smaller brain and thinner cranial bones, the creature could be a South African counterpart of *H. habilis* or a frail specimen of *A. robustus*. Also from Swartkrans, three fragments from *A. robustus* and *Telanthropus* were assembled by Ron Clarke in 1972 and found to fit perfectly (Nelson and Jurmain 1979: 317): a *habilis*-type skull (SK 80/846/847) was thus obtained, which exhibited a higher forehead and a lesser postorbital constriction than *A. africanus*. At Sterkfontein, the STw. 53 cranium possesses similar features. The current dates associated with the presence of early *Homo* in Africa are: 2–1.8 m.y.a. for East Lake Turkana, 1.8 for Olduvai, 1.85 for Omo, 2–1.5 for Swartkrans, and 2–1.5 for Sterkfontein. But there is little doubt that these dates will have to be reappraised many times as new discoveries constantly challenge them.

### 3. Aftermath: the significance of *Homo habilis*

The first controversy, concerning insufficient evidence and erratic name-giving, has abated. It has led to a new, deeper one which brings to the fore many problems concerning evolution and classification. *H. habilis* was first conceptualized as a transitional form in a unilinear evolutionary schema that smacked of orthogenesis: "(...) for (Louis) Leakey, the brutish-looking *Homo erectus* was a sideline, a cul-de-sac of human evolution, off the beaten track leading to modern man. So too did he think of Neanderthal Man, with his grotesque, flat-topped, beetle-browed and enormous skull, as a caricature of a human being, not an ancestor of modern man" (Tobias in Isaac and McCown 1976: 68). Indeed, if one did not know of Louis Leakey's generous personality, the qualification "specific elitism" or even "racism" would come to mind: however, it seems preferable to consider such a theory mere wishful idealism. This inherently tendentious character of *H. habilis* has made more than a few anthropologists uneasy: the term is now commonly replaced by *Homo sp.* or Early *Homo*, both these labels being non-committal taxonomically as well as evolutionarily — in this case they simply concern a transitional form placed somewhere between *Australopithecus* and *H. erectus*.

Richard Leakey, for one, does not hesitate to consider the early *Homo* type a decisive step on the ladder of human evolution and to infer much from the fossil record: "(...) *Homo habilis* is already on the way to becoming human, to creating home bases as the scene of intricate social intercourse, to becoming a keenly cooperative animal, to swapping an ecology of opportunistic feeding for an economy based on reciprocal sharing of plant and animal foods" (Leakey and Lewin 1978: 53). In less deterministic tones Brace (1979: 64–65) posits that a specialization took place early among contemporary hominids, with *A. africanus* emphasizing hunting and thus becoming *Homo*, and others such as *robustus* concentrating on plant consumption; by the end of the Lower Pleistocene only the quicker-feeding, more aggressive *Homo* was left.

Coon (1962: 302) had already noted: "Hunting, speech, fire, and a type of social organization in which men, under competent leadership and following prearranged plans, could combine forces in hunts and raids of several days' duration, must have given *Homo* a decided advantage over his less imaginative and less communicative cousins." This early, and now rather simplistic, concept of the transition from *Australopithecus* to *Homo* at least points to the most elusive aspect of the differences obtaining among early hominids: they must have lain not so much in bone configuration as in cultural or proto-cultural processes. In this, Coon is joined by the sociobiologists, who argue that the shift to big game hunting "could even have been the impetus that led to the origin of early *Homo* from their australopithecine ancestors over two million years ago" (Wilson 1980: 293). Sociobiologists consider the passage from *Australopithecus* to *Homo* the beginning of an autocatalytic social evolution that has characterized the ascent of human predominance on the planet ever since: for them, as for Brace and R. Leakey, *H. habilis* is really the "able, handy, mentally skilful, vigorous" little man Louis Leakey envisioned in his grandiose development of human palaeohistory.

These are inferences made from a reconstruction based on the fossil record. The reconstruction in itself is a difficult enough task: even Walker and Leakey (1978: 62) consider it to be "the equivalent of someone's selecting two individuals at random to represent the entire population of the U.S. today". The hominid range of variation itself has to be determined from a possibly unrepresentative sample; such a task was undertaken by Wolpoff (1976) who, after a thorough discussion of comparative anatomical measurements, concludes (p. 596):

A combination of data suggests that the australopithecines were both polytypic and significantly dimorphic. (...) At the same time it appears that within these polytypic populations, females averaged half the weight of males. In all, the australopithecines were unlike any living primate, combining the polytypism of living humans with the sexual dimorphism of baboons. Only the most variable of the higher primates can be used as an analog for australopithecine variation.



This somewhat discouraging statement is echoed by Brace (1979: 49): "Since they did wield crude tools as defensive weapons rather than employing canine teeth, we would not expect to find a gorilloid degree of male-female canine dimorphism, but we should not be surprised if there in fact had been a gorilloid degree of dimorphism in size and muscularity." This difficulty of interpretation of fossil discoveries is aptly summed up by Wolpoff (1968: 477), who writes: "In discriminating fossil species in closely related animals, we are forced to give a morphological answer to a behavioral question." Fortunately, in the case of the hominids this difficulty is mitigated by the presence of tools made, or simply used, by them. M. D. Leakey (1969: 756) reported examples of *H. habilis* industry:

Only scattered artifacts occur in the area where the cranium was found (Old. H.24), but at the main DK site, a few hundred yards to the west, an Oldowan industry was found at the same horizon when excavations were undertaken there in 1963. It was at this site too, that the stone circle, believed to be the remains of a windbreak, was uncovered. In 1959, at site MK, two hominid teeth were found in the same deposit. These teeth have been referred to *Homo habilis*.

A later article (Leakey, Clarke, and Leakey 1971: 309) gives more details concerning the material culture of H.24: the fossil remains are associated with cobbles, polyhedrons, discoids, subspheroids, scrapers and burins, of the Oldowan type. But this evidence is not powerful enough to overcome the usual problems of even basic identification: "it is possible that Olduvai H.13 and H.14 represent females of *Homo habilis* with the type and H.16 representing the males. The difference in the morphology of the occipital region in the two groups, however, cannot be disregarded and suggests the possibility of taxonomic variation" (ibid.: 312).

By now it is clear that to reconstruct the specifics of early hominid polytypism is virtually impossible; it remains to be seen, however, whether the task of reconstructing broad processes can be tackled more efficiently.

#### 4. Matter for thinking: what it all amounts to

Some para-anatomical inferences can indeed be drawn from the East African sites: "The record suggests (...) a model of small populations living in relative isolation, undergoing comparatively rapid diversification within the compass of three main lineages — gracile and robust australopithecines and *Homo*" (J. D. Clark in Isaac and McCown 1976: 15). With small breeding populations being the rule for the greater part of the Pleistocene, it is not surprising to find that different types of hominids co-existed: the size of these populations made them particularly vulnerable to genetic drift, resulting eventually in the differentiation of a number of adaptive morphological and behavioral features. It is assumed that the closest relatives occupied the

same ecological niche: thus *A. africanus* and *H. habilis*, being both omnivorous, would be found in the same niche, to the exclusion of *A. robustus* and *boisei*, who presumably were predominantly herbivorous. Participants in a same niche had kept enough intrinsic differences not to violate the competitive exclusion principle (if the universal validity of the latter is to be taken for granted); or, alternatively, "we can only guess that at its earliest stages of development, culture was less effective and consequently was a less than all-pervasive determinant of the nature of the total lifeway that it eventually came to dominate" (Brace 1979: 55).

Since the single species hypothesis was proved to be untenable, various ways of coming to grips with the flow of hominids in the Pleistocene have been devised. The most satisfactory may be Gould's "bush theory", which Tobias foreshadowed when he proposed that instead of trying to elicit a perfect chain in the fossil record "we should think rather of multiple strands forming a network of evolving populations, diverging and converging, some strands disappearing, others giving rise to further evolutionary development" (interview, *Time* Nov 7, 1977). Gould, for his part, insists that "we still have no evidence for progressive change within any hominid species" (1977: 57), even though some members of the same species were present over a period of one million years or more. Most intriguing of all is the fact that the various hominid species seem to keep away from each other and not to connect evolutionarily. We either lack the links in the fossil record, or else the evolution proper took place somewhere else, leaving us with only the evidence of a few evolutionary dead-ends — i.e., marginal offshoots which survived up to the time when the *Homo erectus* type finally became stable about one million years ago and proved to be too much to compete with. The bush theory contends that some groups settle in favorable environments and generate marginal groups which eventually migrate to escape the various ecological pressures besetting them; the adaptation to a new environment is carried out through genetic drift, after which the now thriving population may expand and visit its place of origin by random chance or when the prevailing conditions are favorable — perhaps miscegenating with the parent species and thereby creating widespread variation. What we see from the fossil record is a mere hodge-podge of morphological types that say little about the circumstances that brought them about.

The bush theory in turn was inspired by the "allopatric theory": "in the allopatric theory, popularized by Ernst Mayr, new species arise in *very small* populations that become isolated from their parental group at the *periphery* of the ancestral range. Speciation in these small isolates is *very rapid* by evolutionary standards — hundreds or thousands of years (a geological microsecond)" (Gould 1977: 61). Thus, as in Kent Flannery's model of food production ((Flannery 1965), selection is seen as operating in marginal areas which are under ecological stress: the central population,



settled and well adapted to a propitious environment, resists change both behaviorally and genetically — one following from the other. Consequently gradual changes, being limited to small populations in peripheral areas, are likely to escape the narrow scope of the excavations: what we seem to find is the long-lasting evidence of the feedback of external forces on conservative, preponderant, and therefore more easily recoverable, areas. As Gould (1977: 62) puts it: "We will first meet the new species as a fossil when it reinvades the ancestral range and becomes a large central population in its own right." If we replace "reinvades" — which carries an unnecessary agonistic connotation reminiscent of controversial speculations put forward by Lorenz, Ardrey, Tiger, and others — by a less committal term such as "re-enters", we have here a plausible explanation of the confusion reigning in African palaeoanthropology.

Where does *H. habilis* fit into the bush theory? As a point on a continuum where both specific and generic distinctions are clumsy and inaccurate (because they represent populations overlapping in space and time, and perhaps miscegenating), *habilis* can be considered an early *Homo* form evolved from an unknown cluster of cousin hominids and developing into *erectus* while living contemporaneously with a number of doomed hominid branches which fell into the wrong specializations. Thus we are left with a problem that is both synchronic and diachronic: synchronically we have no means of knowing whether the various groups of coexisting hominids were biological species, i.e., whether they could interbreed; diachronically, we are faced with the familiar problem of allocating *habilis* to either of the two palaeospecies that seem to be closest to him chronologically and morphologically, *africanus* and *erectus*. This dilemma is further compounded by the fact that *habilis* was contemporaneous with these two "palaeospecies" and is supposed to have evolved from one to the other! Obviously, as long as this situation is not clarified by new appearances in the fossil record, many of the labels used to describe genetic relations between early hominids should of necessity be interpreted broadly; for example, when Pilbeam (1972: 82) talks about "*A. habilis*, the descendant of *A. africanus*", this is best understood as *habilis* being the outcome of peripheral mutation — a founder who reappears at the place he originally left. It is important not to lose sight of the fact that in this case, more than in any other, our taxonomic distinctions are arbitrary, that they cannot account for what we suspect were spacio-temporal variations, and that revisions in the light of new discoveries should be not only expected, but looked forward to.

##### 5. *Homo habilis* at large: a harbinger of palaeo-anthropological plenty?

The case of *H. habilis* is an apt example of the double — edged character of a scientist's stubborn theory: on the one hand it tends to make your data

fit your wishful expectations and provokes errors and negligences in your classification and interpretation; on the other hand it gives a firm orientation to your research, sometimes at great cost of personal credibility in the eyes of your colleagues in the field (in his book *African Genesis*, Robert Ardrey fittingly described Louis Leakey as a "bull in search of a china shop"). However, call it *H. habilis* or *H. sp.*, the fossilized creature that we think of as early *Homo* remains tantalizing: it symbolizes no less than the incipience of human intelligence, culture, and language. ER 1470's endocast, for instance, was found to exhibit a well-developed Broca's area — but one must quickly add that this fact is hardly a proof of the presence of linguistic abilities, as crania often suffer serious macro- and micro-distortions in the fossilization process and the apes themselves present some degree of cerebral asymmetry (Leakey and Lewin 1978: 179).

If it is true that "so far *Homo habilis*, *Australopithecus boisei*, and *Australopithecus africanus* have turned up in Africa, nowhere else" (Leakey and Lewin 1978: 52), it is nevertheless probable that surprises will come up when research of comparable scope and intensity is carried out in South-East Asia, perhaps even in southern Europe. Already Tobias and Koenigswald (1964) have offered a comparison of *A. robustus*, *A. boisei*, and *H. habilis* from Africa with *Meganthropus paleojavanicus*, *H. erectus*, *Pithecanthropus* and *P. dubius* from Java, and with hominid teeth from China, assigned to *Sinanthropus officinalis* and *Hemantropus peii*. The authors recognized four grades of human evolution:

- (i) *Australopithecus* in South and East Africa; ? in Asia
- (ii) *H. habilis* in Africa; *Meganthropus* in Asia
- (iii) *Telanthropus* in Africa; *Pithecanthropus* in Asia
- (iv) *H. erectus* everywhere.

They remark as a conclusion: "Thus, from the 2nd grade onwards, there are remarkable parallels between the Asian and African sequences" (p. 517); however, it must be borne in mind that the material analyzed was very fragmentary and this effort to synthesize very tentative. The hint has not been ignored, though, and recently Boaz (1979: 78) noted that "*H. modjokertensis* and *H. habilis* might be taxonomically synonymous." In the same way Tobias (in Isaac and McCown 1976: 409) has since written:

(...) the evolving hominid lineages between 5 and 2 m.y. were African phenomena; thereafter, *Homo* appeared in Asia at a stage when *H. habilis* was changing into *H. erectus* (cf. Tobias and Koenigswald 1964). It is not yet clear whether *Australopithecus* accompanied *Homo* in Indonesia (...) or whether the robust forms there were within the range of variation of *H. erectus* (...).

Finally the case of *H. habilis* can give us an insight into the origin of races. Early in the 1960's Coon (1962: 304) wondered if the earliest regional peculiarities we observe in *H. sapiens* were not the consequences of various degrees of interbreeding



between *Australopithecus* and *Homo*: Gould's bush theory, with its provision for numerous lateral ramifications, would tend to support such a hypothesis; and *H. habilis*, if he is shown to appear in various parts of Africa and Asia with little differentiation, could be the first instance of subspecific variation within the lineage leading directly to *H. sapiens*.

Today the *H. habilis* controversy is very much in the wings of the palaeoanthropological arena, as many specialists think the evidence available is still too slim for them to make a pronouncement. However, the concept has polarized small groups of opponents and supporters. Conspicuous among the latter, Tobias maintains that *H. habilis* represents a "cerebral revolution" which gave hominids the capacity for rudimentary speech (Tobias 1983); in this he is followed cautiously by Holloway (1983), who makes use of the taxon in his palaeoneurological studies of hominid endocasts. The *H. habilis* case is indeed perplexing; yet let us take solace with Pfeiffer's (1978: 65–66) remark that "anyone who isn't confused by the hominid story just doesn't understand the situation." This is especially true of such a key character as *habilis*.

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