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## The role of Southern Africa in understanding Human origins

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For understanding hominid evolution, 3 major periods must be considered: 1) the origin of superfamily Hominoidea, 2) the origin of the family Hominidae (*sensu stricto*), 3) the origin of the genus *Homo*. We will only consider the first two as the third is widely addressed in South Africa, in particular in the Cradle of Humankind. For almost a century, our earliest history was based on East African evidence but new palaeontological discoveries in Southern Africa suggest that this region may have played an important role in our history, especially considering the palaeoclimate and palaeovegetation (extensive areas of Miombo Woodland).

The earliest hominoids in Africa occur in East Africa (Kenya and Tanzania ca 25 Ma) and their precursors might be in the Fayum (Egypt, 32-35 Ma). In 2008, prospecting by a Franco-Namibian team in the Sperrgebiet (Namibia) led to the discovery of Palaeogene faunas which include anthropoids (Pickford et al. [2]) dated 45-47 Ma for the oldest and 43-44 for the youngest (Pickford et al [3]), and thus the oldest in the Old World. It was the first record of such an ancient fauna in this part of the continent and was followed by the discovery of two additional sites in the same area.

The southern half of Africa was long thought to be devoid of non-human hominoids, but in 1991 the first Hominoidea from the sub-continent (*Otaviopithecus namibiensis*) was discovered at Berg Aukas (Namibia) in 12-13 Ma karstic deposits (Conroy et al. [1]) and in 1996 the first Lower Miocene hominoid (Senut et al. [4]) was found at Ryskop, Namaqualand, South Africa. It appears that Hominoidea were not restricted to Eastern Africa, but that Southern Africa was also a region of diversification. The question which remains to be answered concerns their origin: did these southerly hominoids migrate from East Africa, or was there a local evolution from Palaeogene precursors? This will remain unanswered until we find fossiliferous deposits in the south aged between 40 and 18 Ma.

The Mio-Pliocene is a key period for understanding our past and even if it is poorly known (even in East Africa), some fossiliferous deposits of this age have been found at Etosha (Namibia). This is a promising area which has already yielded a lower Pliocene skeleton of *Mammuthus subplanifrons* equivalent in age to Langebaanweg, South Africa, but there are also older levels with fossil mammals. They have not yielded any hominids yet, but this discovery needs to be mentioned because Mio-Pliocene deposits are rare in Africa, and are crucial for understanding hominid origins, especially the origin of Australopithecinae in South Africa. A lower Pliocene locus has been identified at Bolt's Farm (South Africa, Sénégal and Michaux [6]) which has a potential for yielding early hominids.

During the Palaeogene Namibia was humid and well vegetated, but conditions changed in the Lower Miocene. Desertification began (Ségalen et al. [5]) and the biota adapted to these changes. When East Africa became drier in the Late Miocene and Pliocene, several South African taxa dispersed northwards (Senut et al. [7]). There were faunal interchanges between Southern Africa and other parts of the continent and we cannot *a priori* exclude the possibility that 1) hominoids, 2) hominids and even 3) *Homo* might have originated in the sub-continent rather than in the Equatorial zone.

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