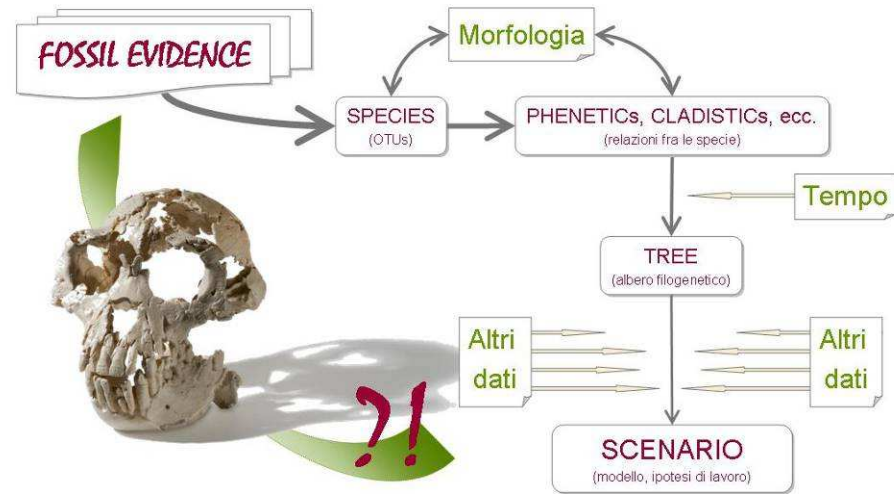
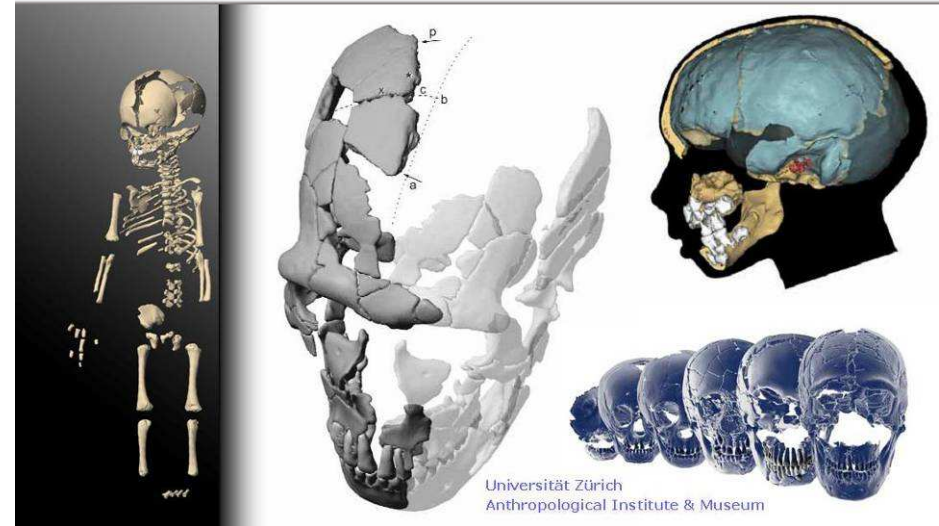


Una scienza storica



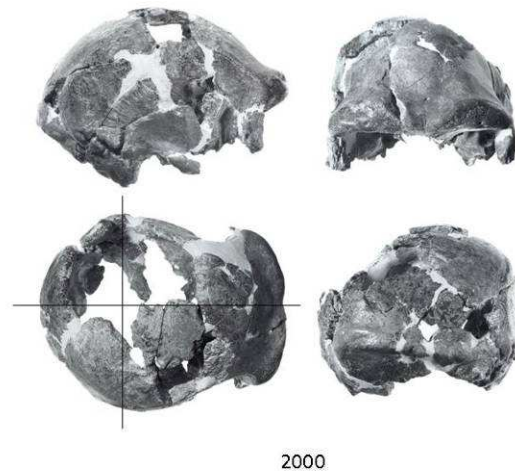
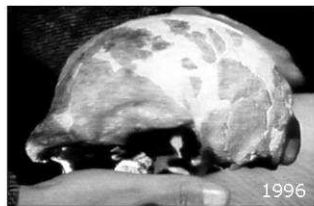
"virtual" paleoanthropology



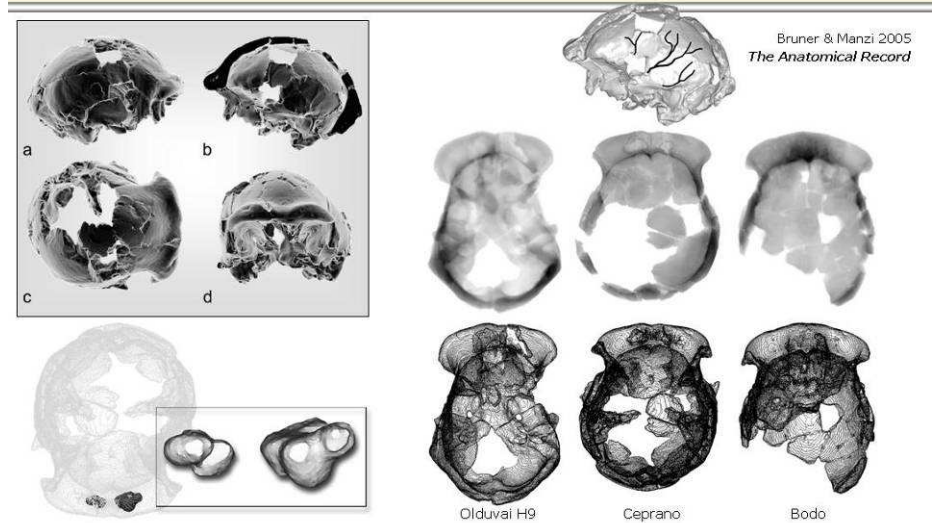
Dai frammenti allo "specimen"

Una difficile ricostruzione
a partire da oltre 50 frammenti:

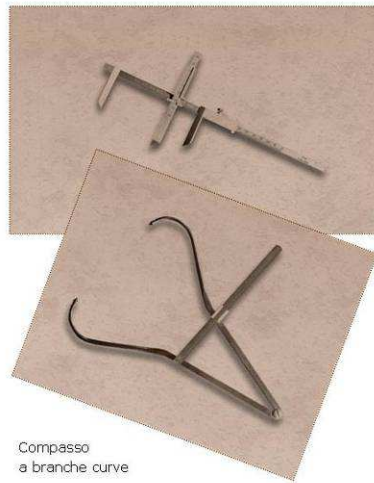
- A. Ascenzi & coll.
- R.J. Clarke
- M-A. de Lumley
- F. Mallegni



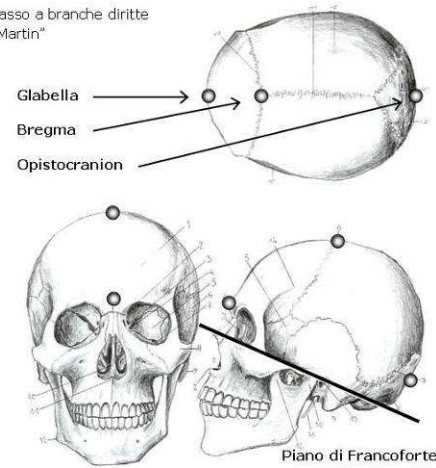
Ceprano - esame tomografico (TC)



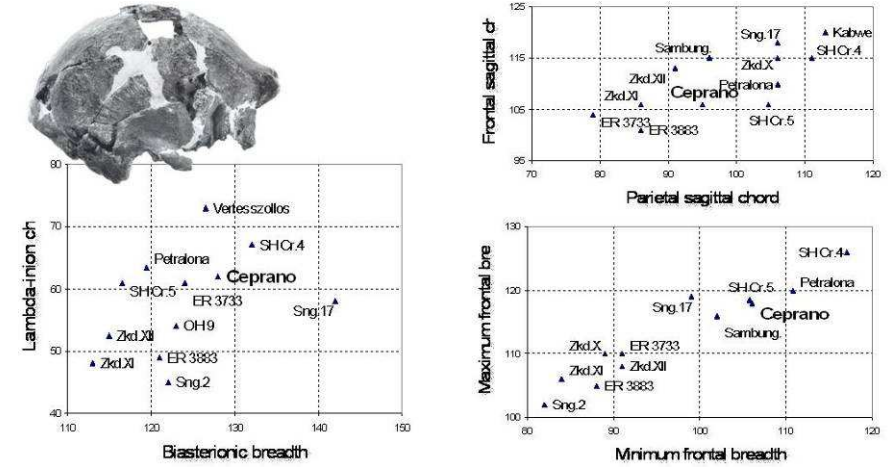
Craniometria, lo strumentario



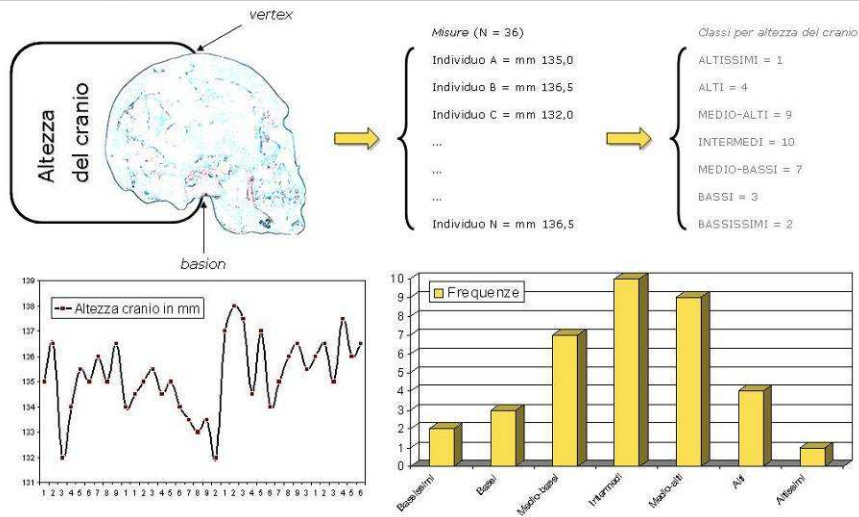
Compasso a branche dritte o "di Martin"



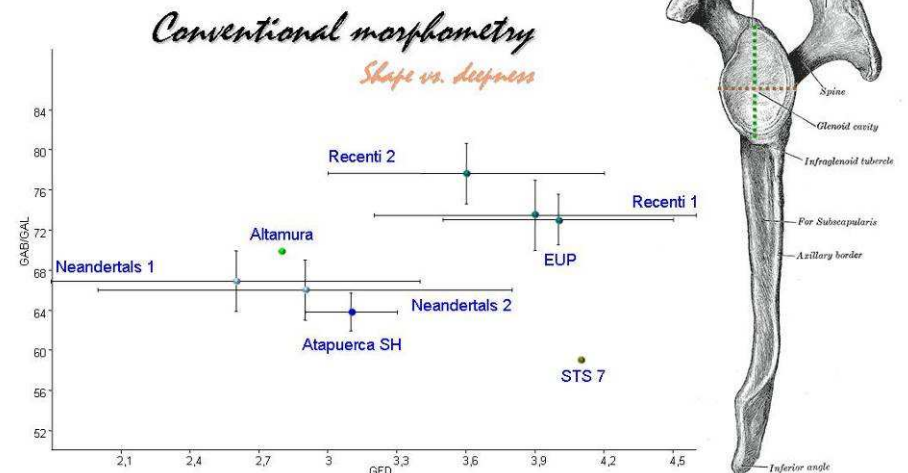
Ceprano - morfometria livariata



Craniologia: le misure



Morfometria: forma vs. profondità

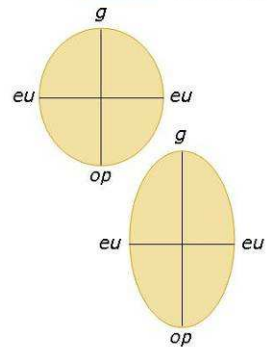


Craniologia: gli indici

✓ Indice cranico orizzontale

- Lunghezza massima: glabella-opistocranium M1, g-op
- Larghezza massima: eurion-aurion M8, eu-eu

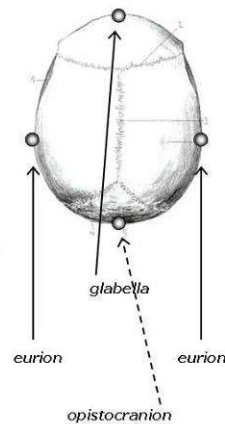
→ Indice = rapporto percentuale:



$$(eu-eu / g-op) \times 100$$

BRACHICRANIA = valore ALTO dell'indice

DOLICOCRANIA = valore BASSO dell'indice



La "strutturalismo" di D'Arcy Thompson

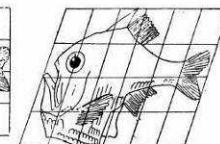
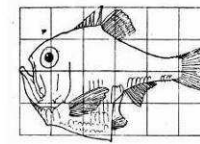
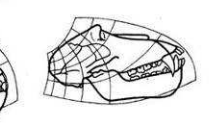
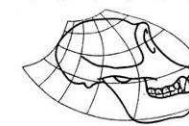
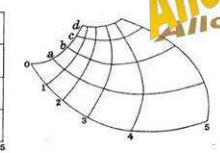
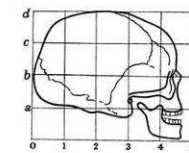
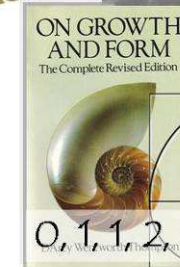


Fig. 517. *Argyropelecus Olfersi*.

Fig. 518. *Sternopyge diaphana*.



Allometria



Sir D'Arcy Wentworth Thompson (1860-1948)

0, 1, 1, 2, 3, 5, 8, 13, 21...

Il metodo "naturale" di G. Sergi

Noi quindi posti nella necessità di scegliere il più importante e il più utile dei caratteri interni per la classificazione (...) troviamo i maggiori vantaggi nel cranio, intorno a cui raggruppiamo tutti gli altri caratteri (...) per avere il tipo etnico completo.

Si aggiunga che accettando il cranio come principale carattere interno, noi implicitamente accettiamo il cervello nelle sue varie forme: e il cervello il più importante organo fra gli organi dell'uomo.

A me sembra che la craniometria, oggi divenuta cabalistica (...), non può servire a distinguere razze o gruppi umani (...). A me sembra, (...) dopo che anch'io ho adoperato la craniometria in mancanza di meglio, che sarebbe tempo di stabilire, (...) per lo studio dell'uomo nelle sue variazioni, un metodo naturale, non diverso da quello che in uso per la zoologia e la botanica.

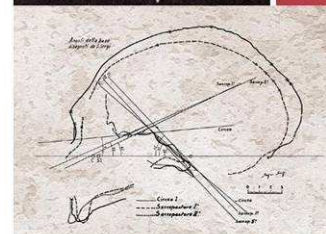
Il metodo pratico, già adoperato da me, (...) è quello di collocare sopra una grande tavola la serie di crani, con ordine, in file eguali (...) e poi dall'esercizio del guardare e riguardare (...) a poco a poco si acquista (...) uno sguardo fino.

L'osservazione del cranio bisogna che cominci con la ben nota norma verticale del Blumenbach, quella norma da cui, in seguito, Retzius trasse l'indice della larghezza; anche per il metodo che propongo ha il primo posto, ed essa ci deve fornire (...) il primo carattere di classificazione.

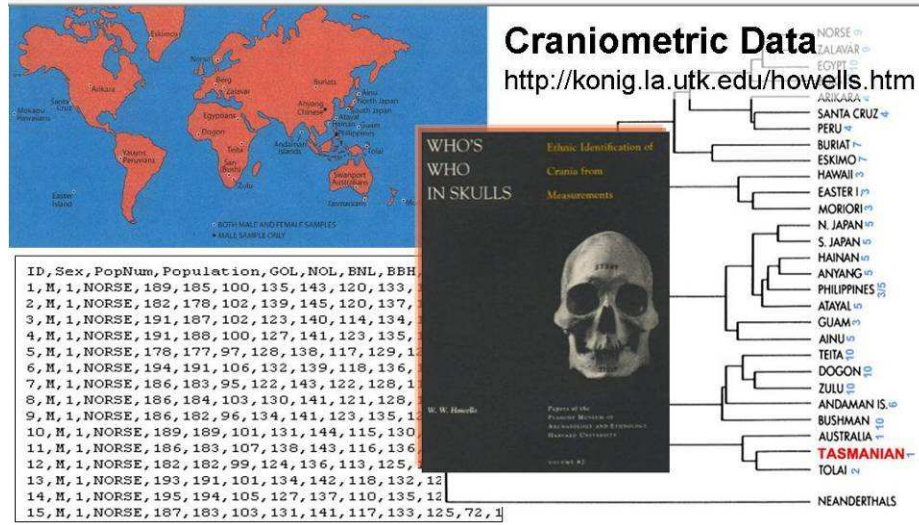
Giuseppe Sergi, 1893



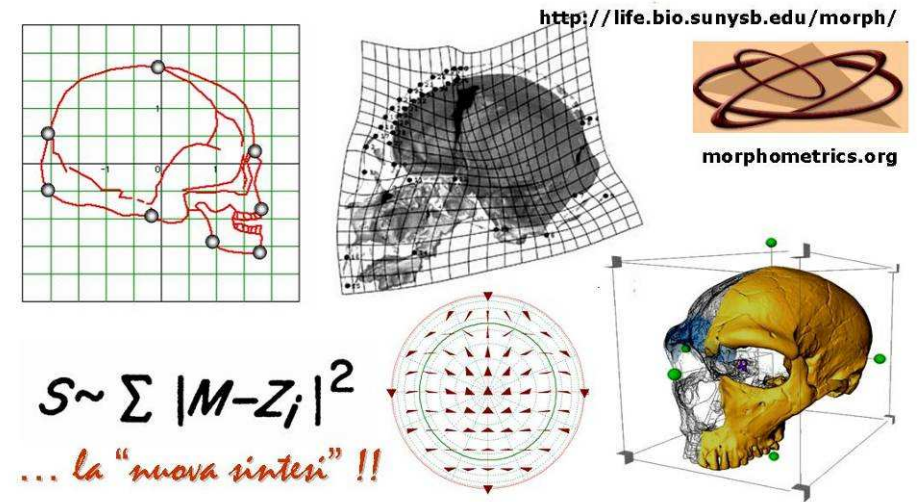
La "morfometria geometrica" di S. Sergi



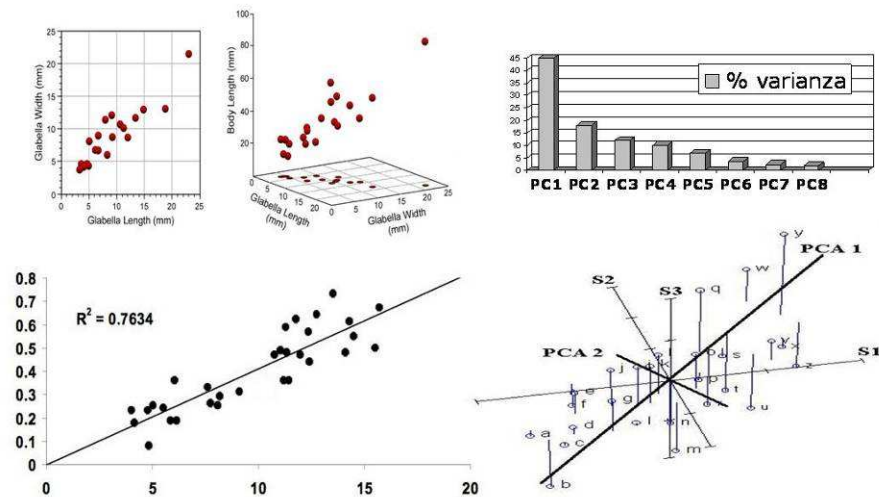
La craniometria multivariata di W.W. Howells



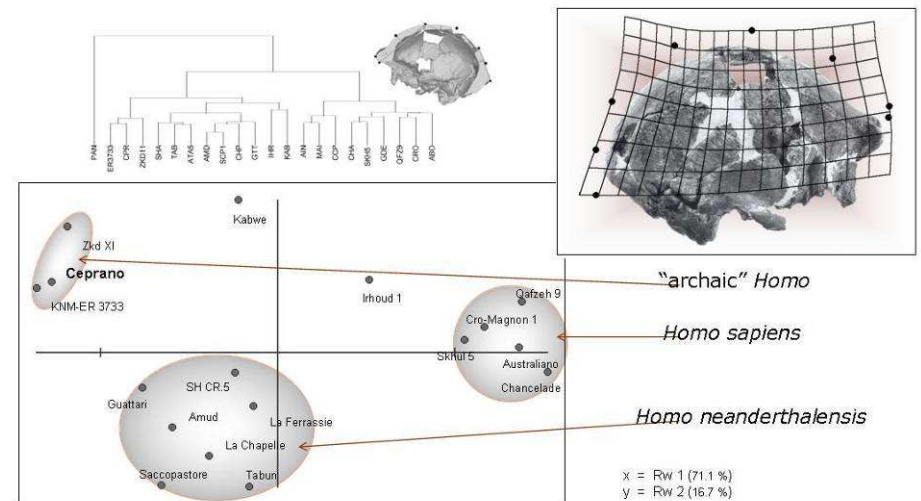
Lo shape space della morfometria geometrica



Nello spazio a N dimensioni

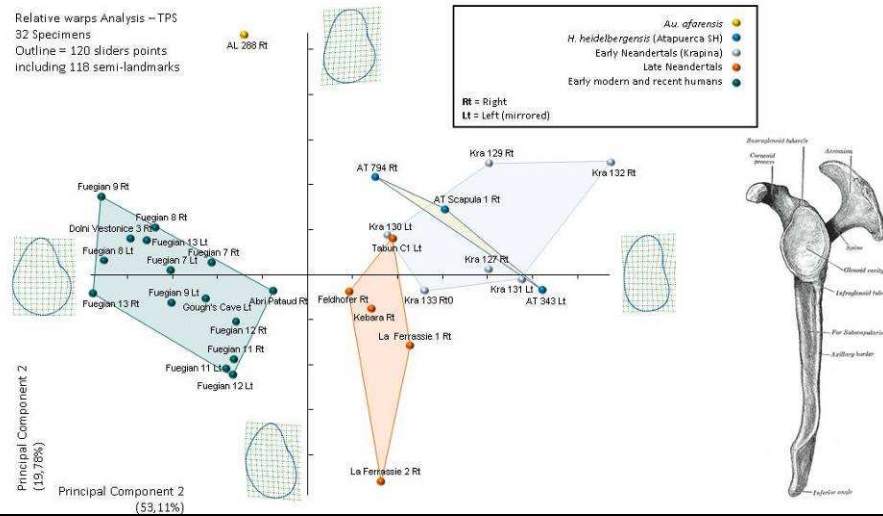


Morfometria geometrica (cranio)

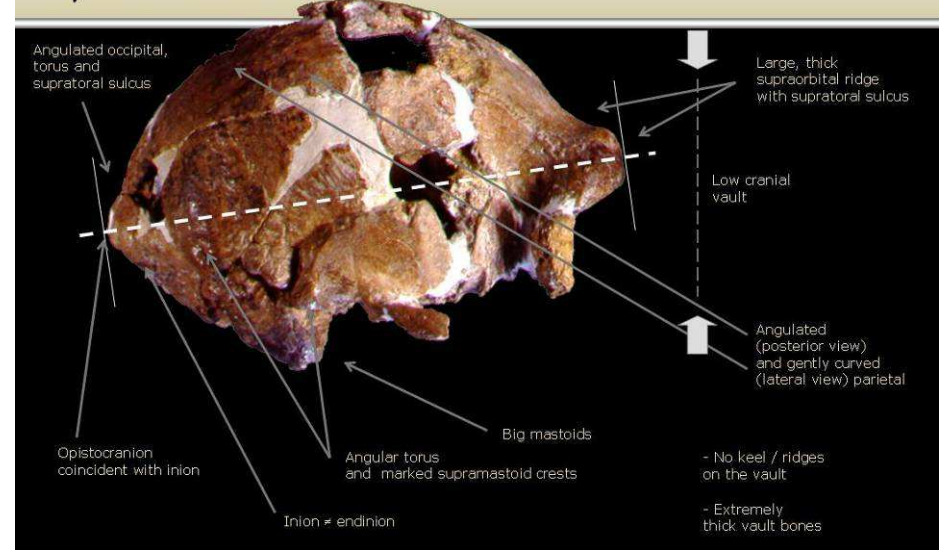


Morfometria geometrica (scapola)

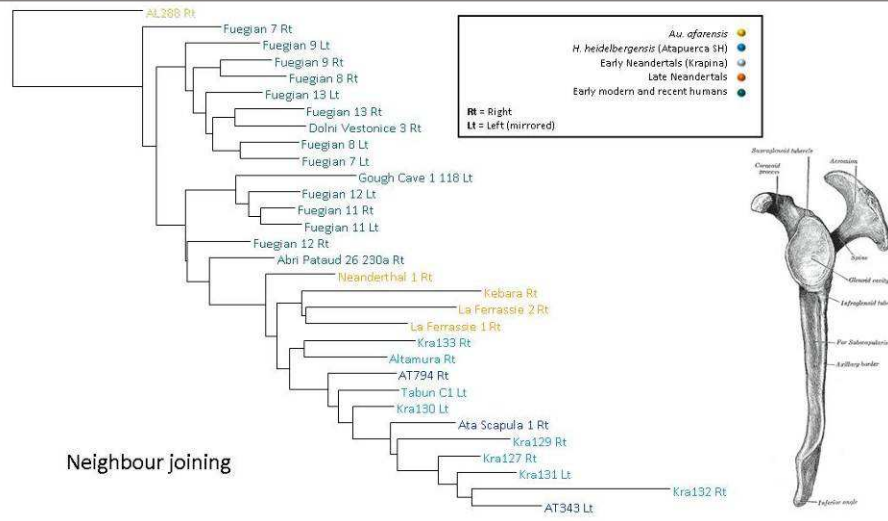
Relative warps Analysis – TPS
32 Specimens
Outline = 120 sliders points
including 118 semi-landmarks



Ceprano – caratteri descrittivi

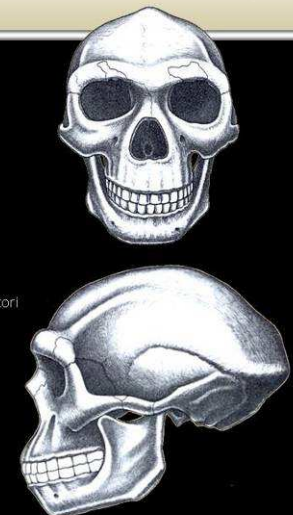


Relazioni fenetiche

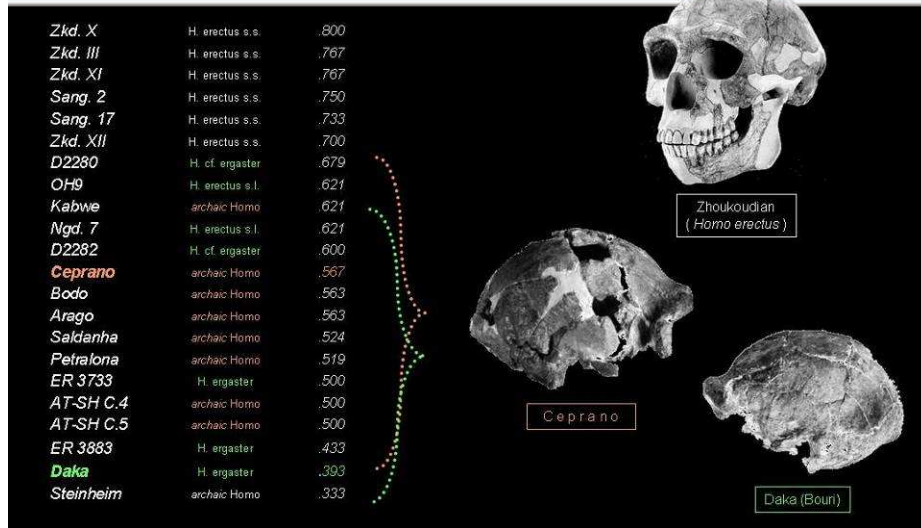


Homo erectus – una diagnosi "asiatica"

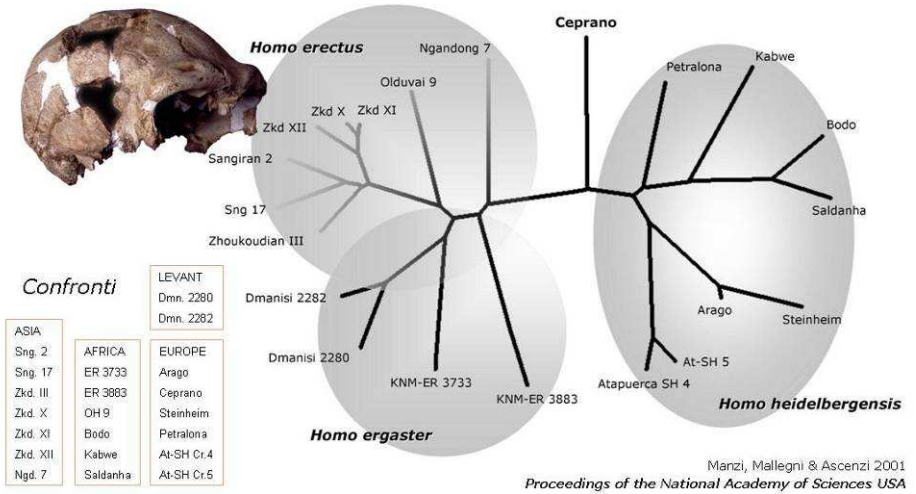
- ✓ Long and low cranial vault, with brain size around 1000 ml
- ✓ Opisthocranium coincident with inion, and sharply angulated occipital profile
- ✓ Maximum breadth across the temporal areas (convergent parietal walls)
- ✓ Massive & almost rectilinear supraorbital torus, without glabellar inflexion
- ✓ Receding frontal profile with weak (or absent) supratoral sulcus
- ✓ Strong postorbital constriction
- ✓ Sagittal (& coronal) keel with parasagittal depressions
- ✓ Transverse occipital torus, continuous with supramastoid crests and angular tori
- ✓ Straight & low temporal squama
- ✓ Supramastoid / suprameatal shelf
- ✓ Non-ossified styloid process
- ✓ Coronal tympanic plate inclination
- ✓ Deep glenoid fossa & high postglenoid projection
- ✓ Large, prognathic, and relatively flat face
- ✓ Thick vault bones



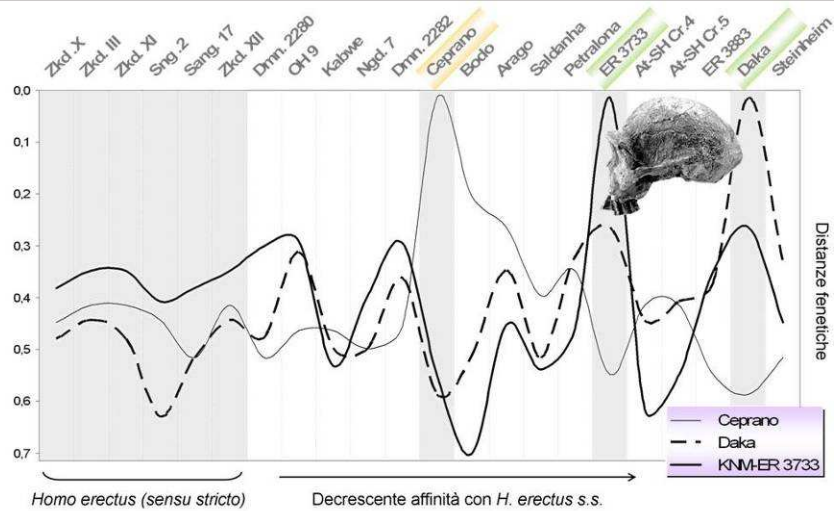
Affinità fenetica – un indice di "erectuslikeness"



Ceprano, "the bridge" (PNAS 2001)



Distanze fenetiche



Analisi multivariate

