

# The Big Jaw

## Case Study

### Introduction to Bioinformatics

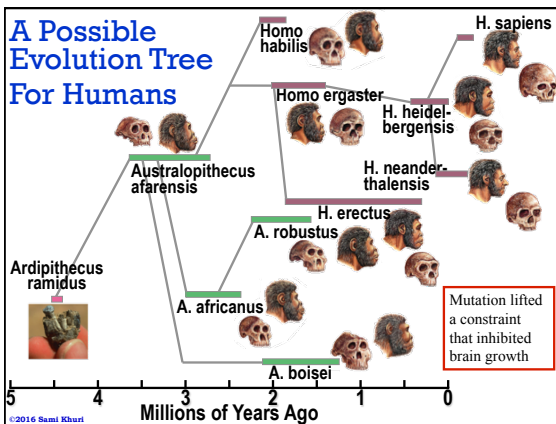
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Myosin gene mutation  
correlates with anatomical  
changes in the human lineage by  
Hansell H. Stedman et al.

**NATURE: VOL 428, 25 MARCH 2004**

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### Powerful Masticatory Muscles

- Powerful masticatory muscles are found in most primates, including chimpanzees and gorillas, and also in Australopithecus.
- Masticatory muscles are considerably smaller in members of Homo.
- The gene encoding myosin heavy chain (MYH) expressed in these muscles was inactivated by a frameshifting mutation after the lineages leading to humans and chimpanzees diverged.

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A decrease in jaw-muscle size, produced by inactivation of MYH16, removed a barrier to the remodelling of the hominid cranium which consequently allowed an increase in the size of the brain.

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