

**RLB361**  
**Náboženství a sociální mozek III.**

**Evoluční psychologie, vývoj sociální kognice, role náboženství**

15.10.2012

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Scientific evidence proves that bunnies are a major causation for peace.

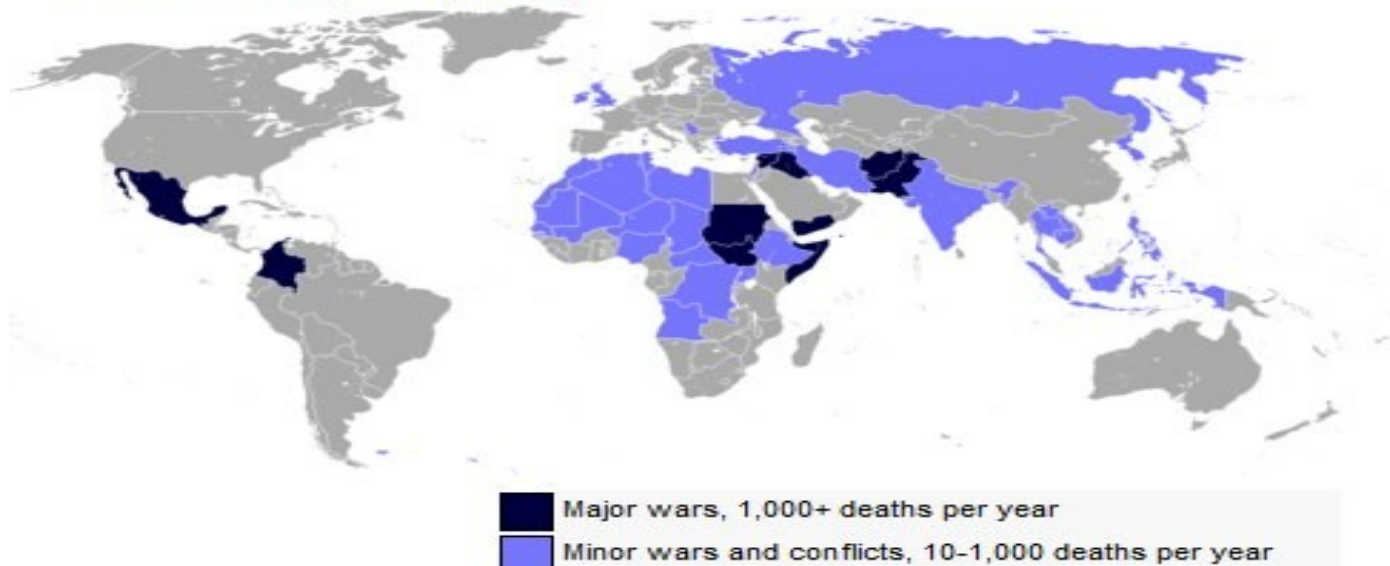
## Wild bunny range

Source: Wikipedia (2012)



## List of ongoing military conflicts

Source: Wikipedia (2012)



- Náboženství a mozek – korelace či kauzalita?
- Religionistika – materialismus vs. Mentalizmus?
- God module?

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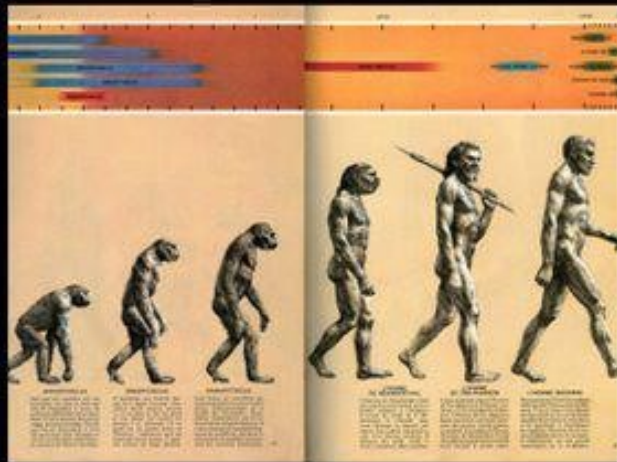
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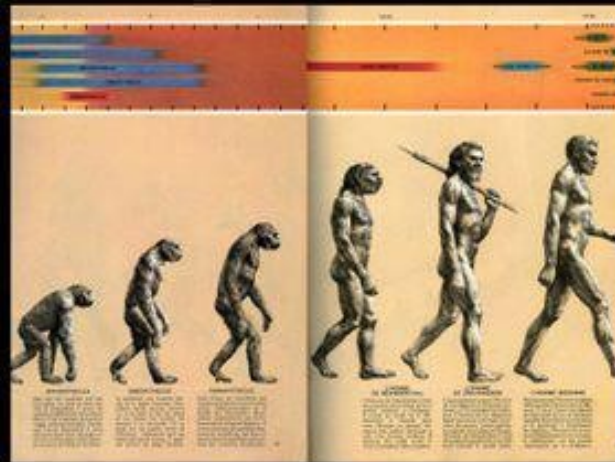
- Cíl přednášky:
  - Seznámit posluchače s evolučními teoriemi, které se týkají náboženství a sociálního mozku
- Hlavní argumenty:
  - Lidský mozek se vyvíjel od jednoduššího ke složitějšímu
  - Jednotlivé charakteristiky lidského mozku se vyvinuly z určitého selekčního tlaku, některé prvky náboženství tyto vlastnosti podporují
- Předpoklady:
  - Informace vázané na médium
  - Neexistují specificky náboženské procesy
  - Náboženství je možné redukovat na menší prvky a zkoumat jejich organizaci



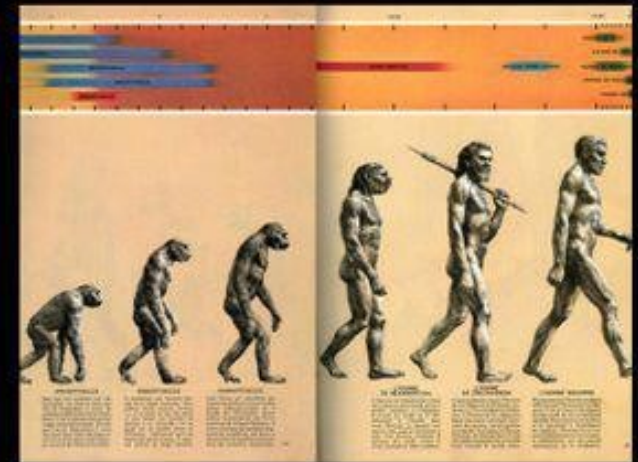
What biologists think happened



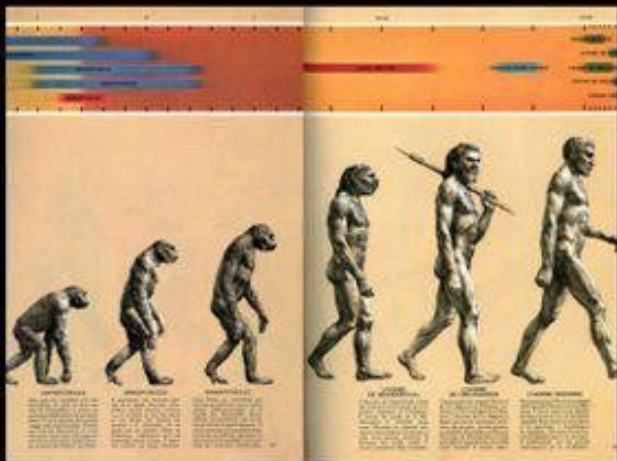
What paleontologists think happened



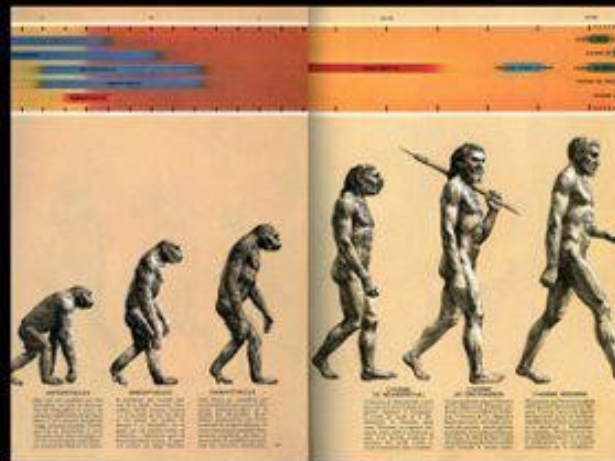
What geneticists think happened



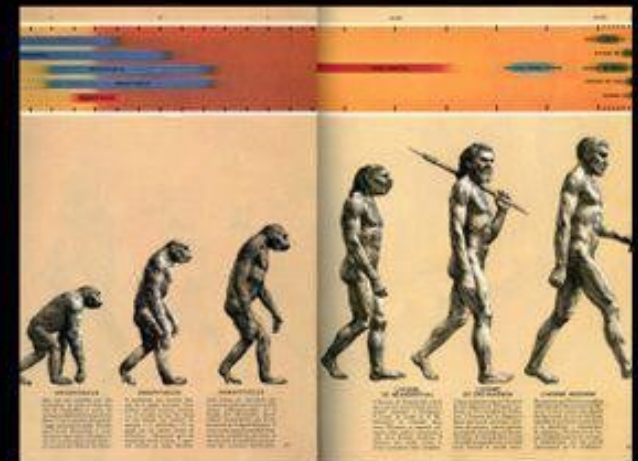
What archaeologists think happened



What believers can't believe happened



What actually happened



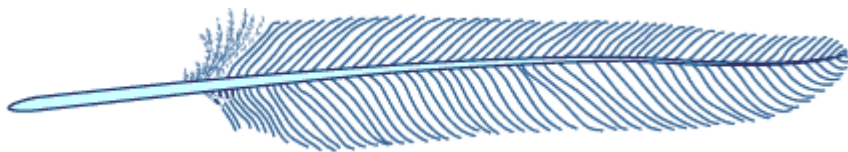
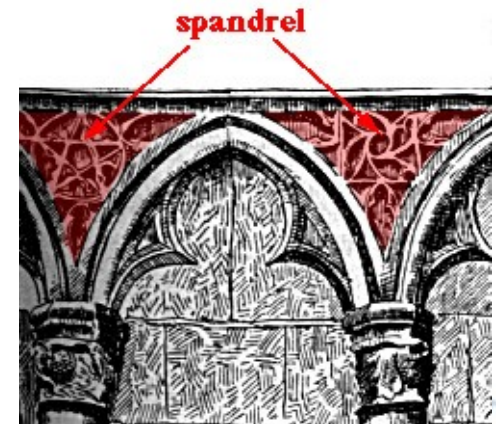
You don't have to believe it, but participation is mandatory.

- Evolution – change of inherited characteristics over generations
- Fitness – the ability of organism to pass genes onto next generations and their ability to pass etc.
- Niche – concrete environment where organism is under selection pressure – nutrition, disease, predators
- Trait – basic product of evolution – solves fitness problems
- Mutation – structural and molecular chemical change in genetic material affecting trait



- Adaptation – set of traits that increase fitness
- By-product – side products of selection, other effects than primary function

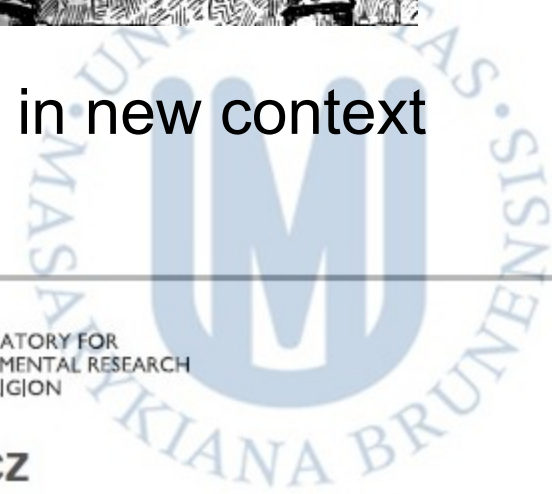
- Spandrel – never selected for their function, proved to be adaptive in a new context
- Exaptation – side effect of adaptation, secondary adaptive function proved to be adaptive in new context



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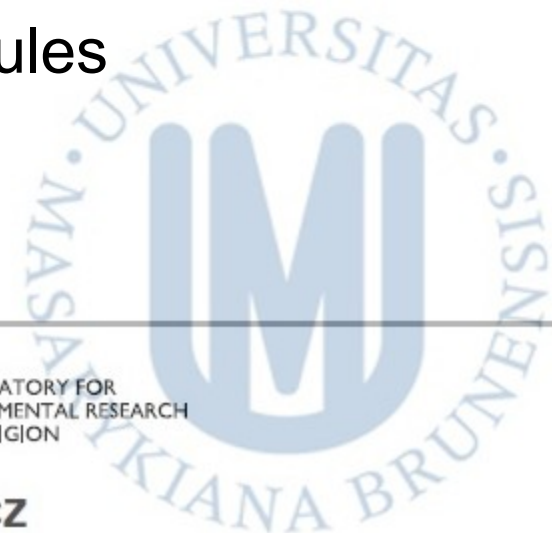
- Evolutionary psychology – social and psychological factors are relevant to evolutionary fitness; group as a niche
- Examines psychological traits – perception, attention, language, memory, and how they are expressed in behavior
- Psychological traits as evolved adaptations - modules

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- Adaptation vs. By-product
- Mechanistic approach
- Genetical underpinning vs. Social effects
- God module and its selection
- Religion as set of traits, multiple by-product, however with some adaptive traits
- Social cognition mechanism and religion
- Adaptive effect – natural selection of religious individuals
- Group selection – freerider, religion helps in maintaining



**„The building of religious concepts requires mental systems and capacities that are there anyway, religious concepts or not.“**

Boyer, P. 2001. *Religion Explained: The Evolutionary Origins of Religious Thought*. New York: Basic Books.

# Sociální kognice:

- Výběr, zpracování a využití informací k formulování úsudků a rozhodnutí o sociálním světě
- Sociální poznávání a hodnocení druhých lidí
- Jak lidé myslí o jiných lidech



# Formování skupin:

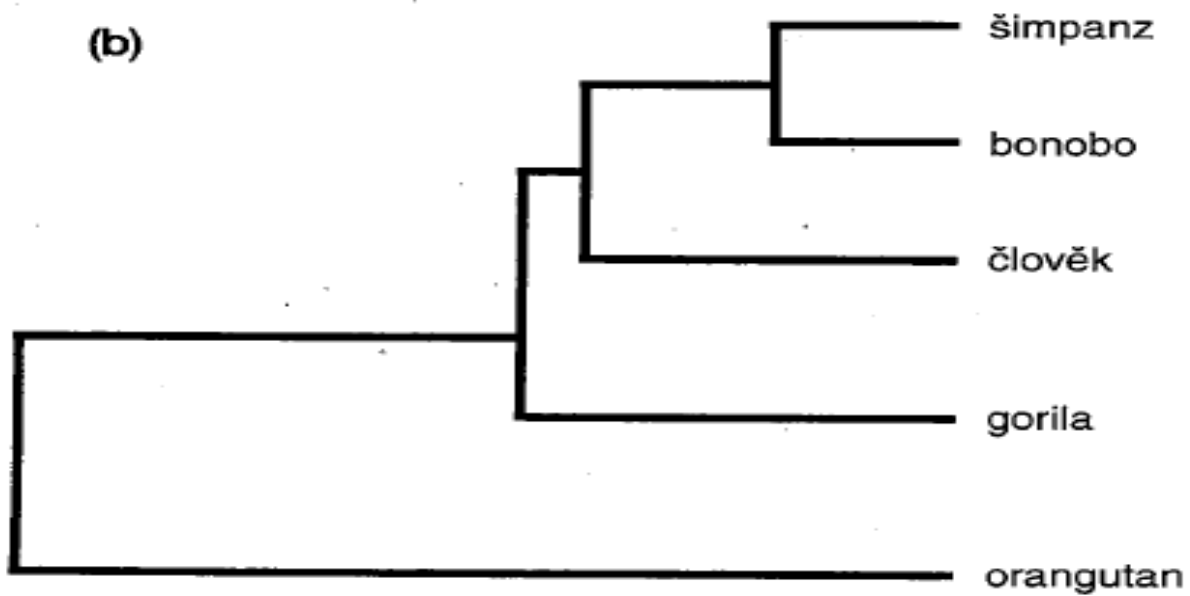
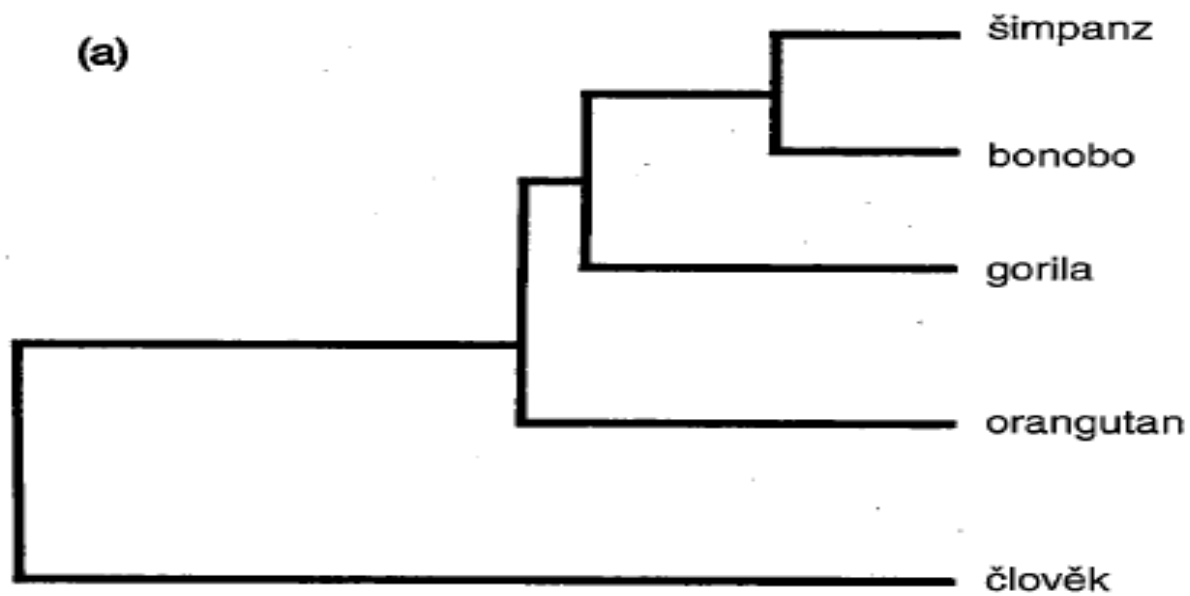
- Kin selection – reproductive success of relatives
- Selfish gene – Dawkins – promotes only its own replication
- Selfishness is not a rational thing to do on a long run – reputation



# Formování skupin:

- Group-selection – alleles benefiting group
- Multi-level selection – Sloan-Wilson
- Individual vs. Group
- We're all better off cooperating
- Why bother to join the hunt?





Obrázek 1: Přiblížení člověka a lidanů. (a) Tradiční pohled převažující dříve do roku 1990.

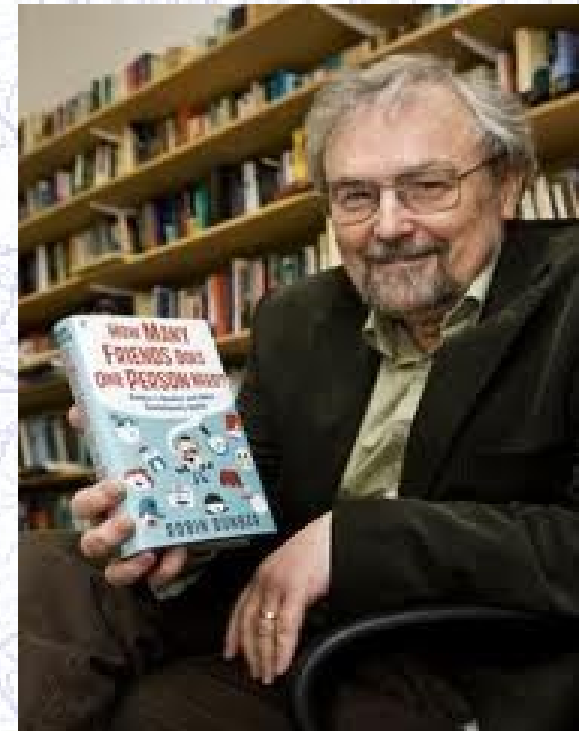
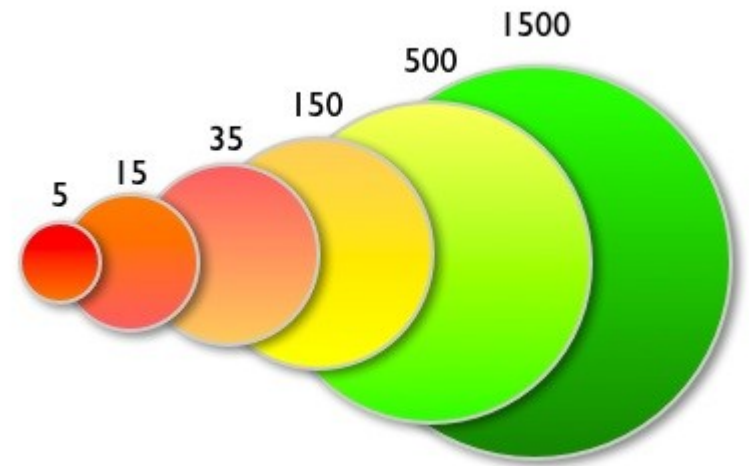


# COMMON ANCESTOR

How can anyone believe we don't share one?

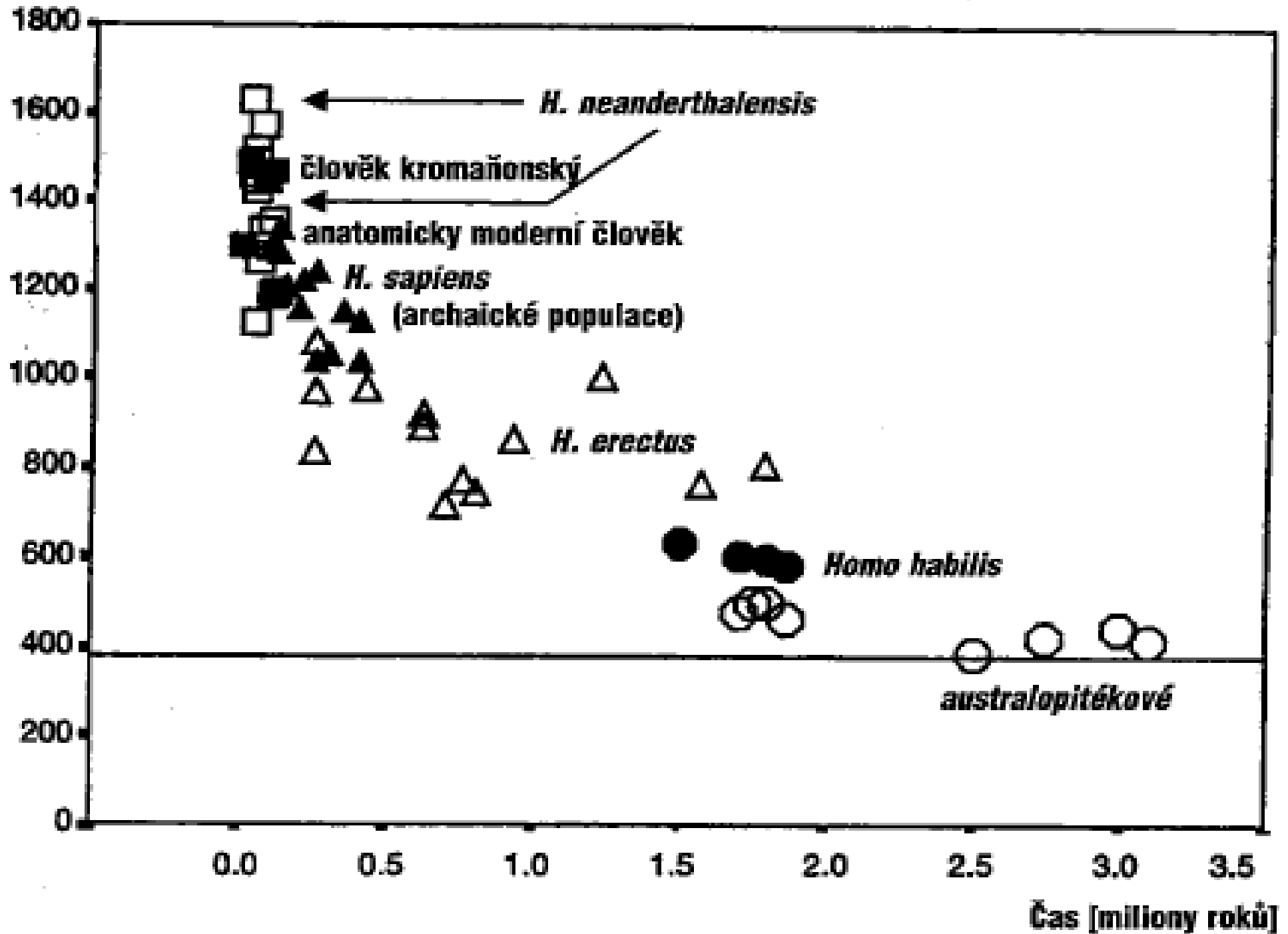
# Formování skupin:

- Příbuzenství
- Čím více, tím lépe  
(bezpečí, potrava, reprodukce)
- Kdo je přítel a kdo nepřítel?
- Dunbar's number
- Neokortex





Obsah mozku [cm<sup>3</sup>]



# Formování skupin:

- Social grooming (drbání)
- Přítel a nepřítel
- Endorfiny
- Vtipy
- Strategické informace



*Table 1*

	Counter-intuitive	Intentional Agent	Possessing <i>Strategic Information</i>	Acts in real world	Motivates reinforcing behaviors
Santa Claus	Inconsistent	Yes	Marginal	Yes	Marginal
Mickey Mouse	Yes	Yes	No	No	No
Tooth Fairy	Yes	Yes	No	Yes	Yes
George Bush	No	Yes	Yes	Yes	Yes

Santa Claus just falls short of meeting the criteria for a god, but lacking in any one cell is sufficient for disqualification. The Tooth Fairy and President George Bush all fall one cell short, though one might question the quality of the president's strategic information as well.

- Jerry Fodor (Tooby and Cosmides) – Modularita
- Mysl jako švýcarský nůž
- Zrakové centrum?
- Blindsight?
- Vizuální zvířata



## **Three phases for the evolution of the mind**

Let me now simply state the three broad architectural phases for the evolution of the mind that will serve as the framework for interpreting the archaeological and fossil data in later chapters, prior to elaborating on these in the rest of this chapter.

**Phase 1.** Minds dominated by a domain of general intelligence – a suite of general-purpose learning and decision-making rules.

**Phase 2.** Minds in which general intelligence has been supplemented by multiple specialized intelligences, each devoted to a specific domain of behaviour, and each working in isolation from the others.

**Phase 3.** Minds in which the multiple specialized intelligences appear to be working together, with a flow of knowledge and ideas between behavioural domains.

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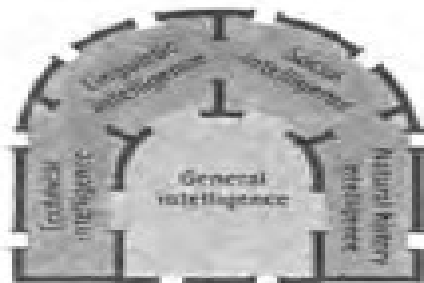
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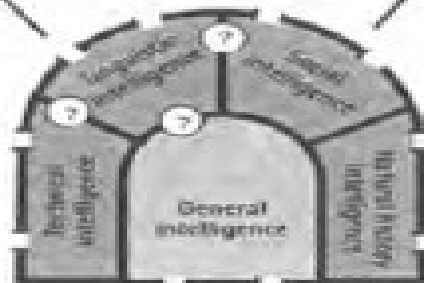
# The mind as a cathedral

N.B. These are schematic, metaphorical illustrations. They carry no implications for the spatial location of cognitive processes within the brain.

Phase 3: Two possible architectural plans for Phase 3 minds. These represent minds of people living by hunting and gathering. For those with other lifestyles, it is likely that other types of specialized intelligences will develop, although social and linguistic intelligence are likely to be universal.



Phase 2  
Minds with a 'nave' of general intelligence and multiple 'chapels' of specialized intelligences. It remains unclear how that of language is related to the other cognitive domains. As we can assume that all minds of this phase were of people living by hunting and gathering, the three 'chapels' are social, technical and natural history intelligence.



Phase 1  
Minds with a 'nave' of general intelligence. The 'doors' represent the passage of information from modules concerned with perception.



Evolutionary time





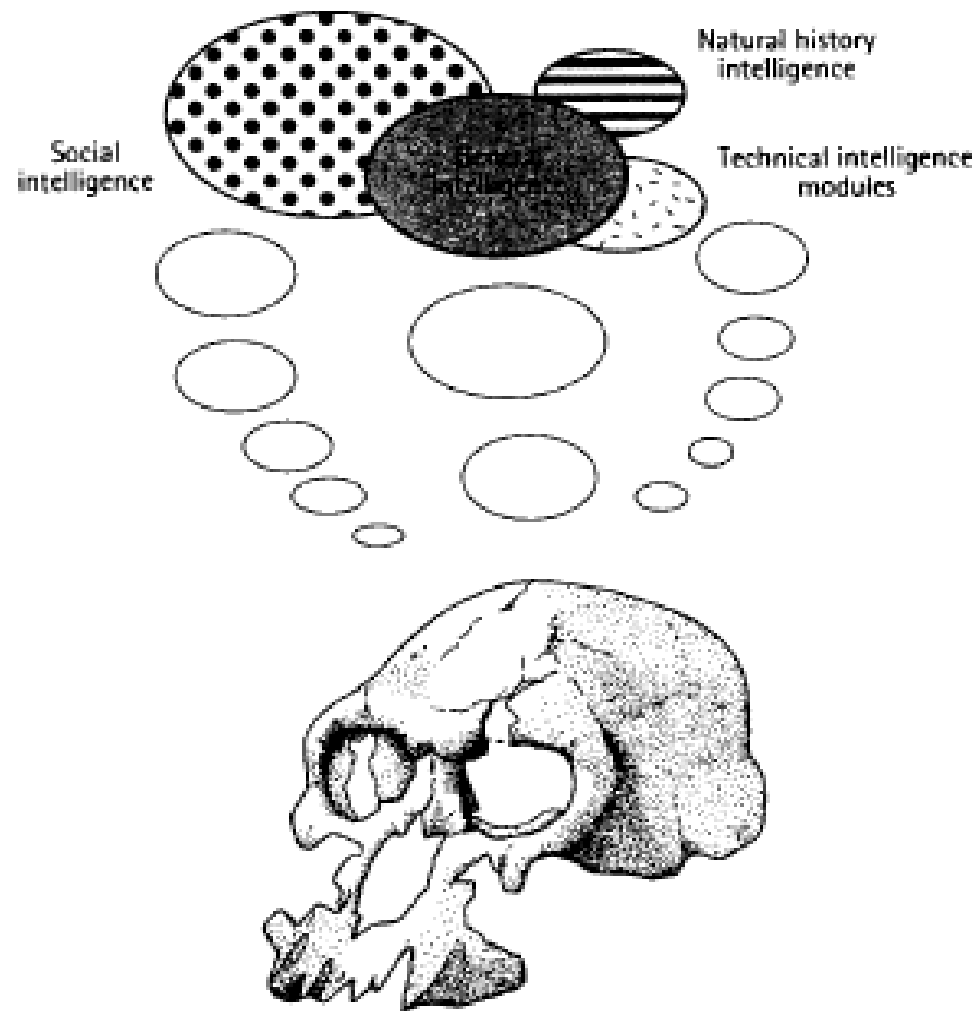
*3 A chimpanzee using a stone hammer and anvil to crack open nuts.*

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10 *The mind of early Homo. The drawing depicts the H. habilis skull known as KNM-ER 1470. This was discovered in 1972 at Koobi Fora, Kenya, and dates to 1.9 million years ago.*

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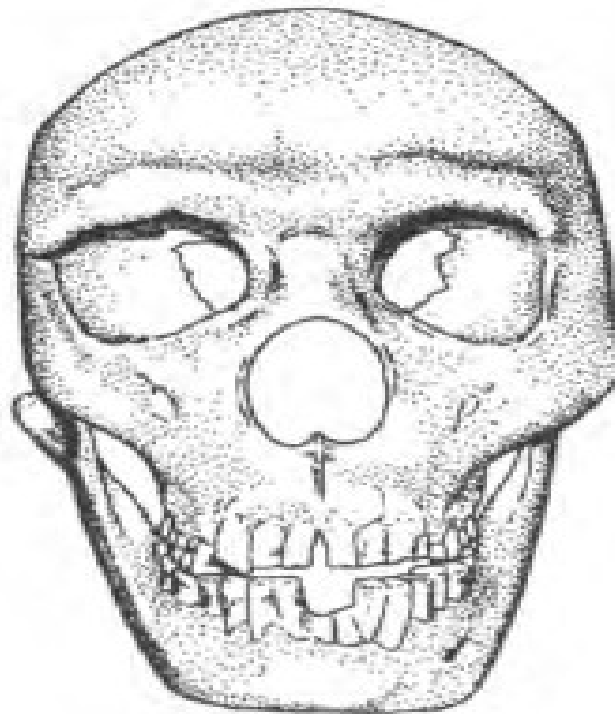
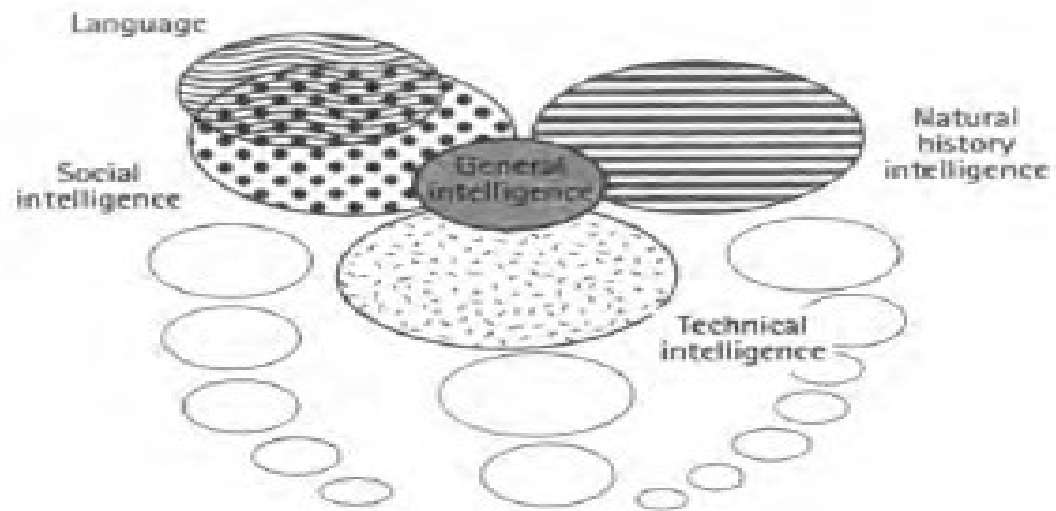
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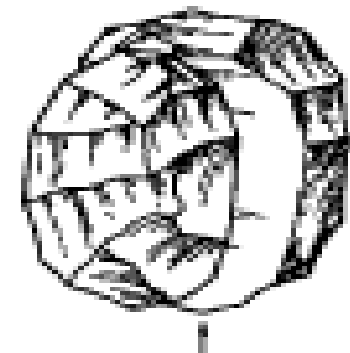
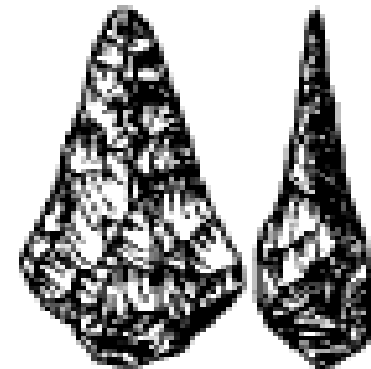
- Homo habilis
- Schopnost stopovat
- Oldowanský sekáček





- Homo erectus
- První známky jazyka – sestoupil larynx, zuby
- Vzpřímená chůze
- Zvýhodnění vokalizace sociálních informací

Handaxes and  
Levallois flakes



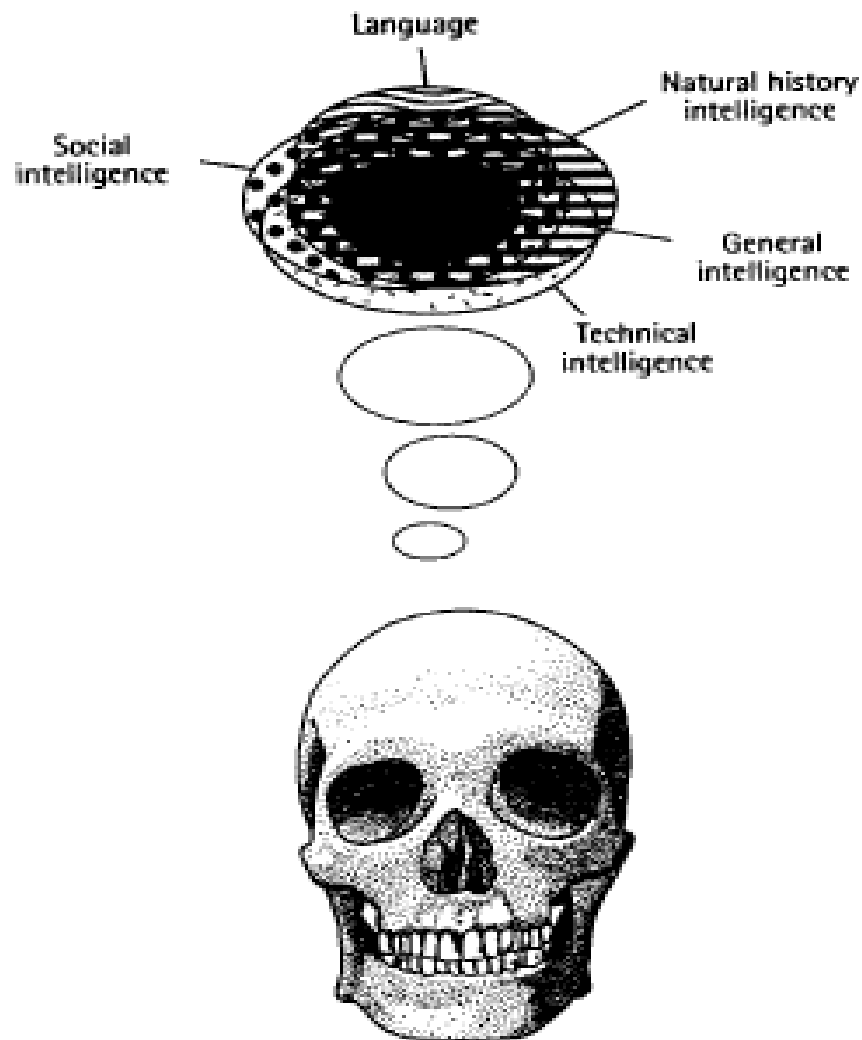
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*'The modern hunter-gatherer mind.'*

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## **Cognitive fluidity and the origins of art**

Having considered some of the properties of visual symbols, let us consider what mental attributes are involved in creating and reading them. There are at least three:

1. The making of a visual image involves the planning and execution of a preconceived mental template.
2. Intentional communication with reference to some displaced event or object.
3. The attribution of meaning to a visual image not associated

- Kreativita jako propojování různých domén
- Umění a materiální kultura
- Lion – man
- Symbolizace
- Information-storing tool



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