Neurofisiologia da Leitura
LEF 794 e 894

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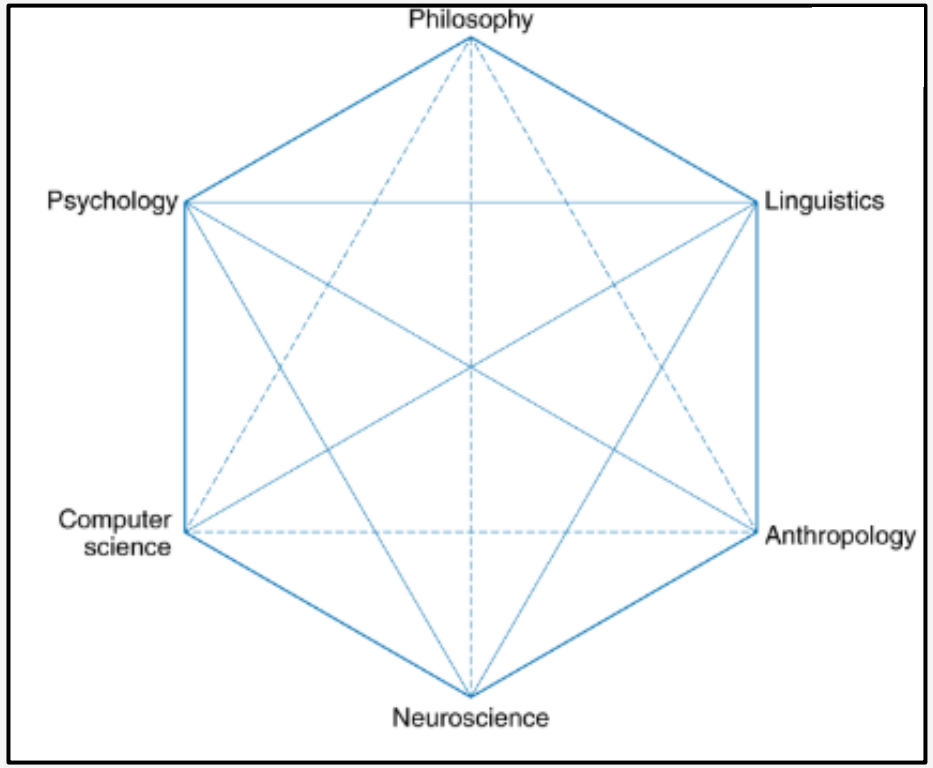
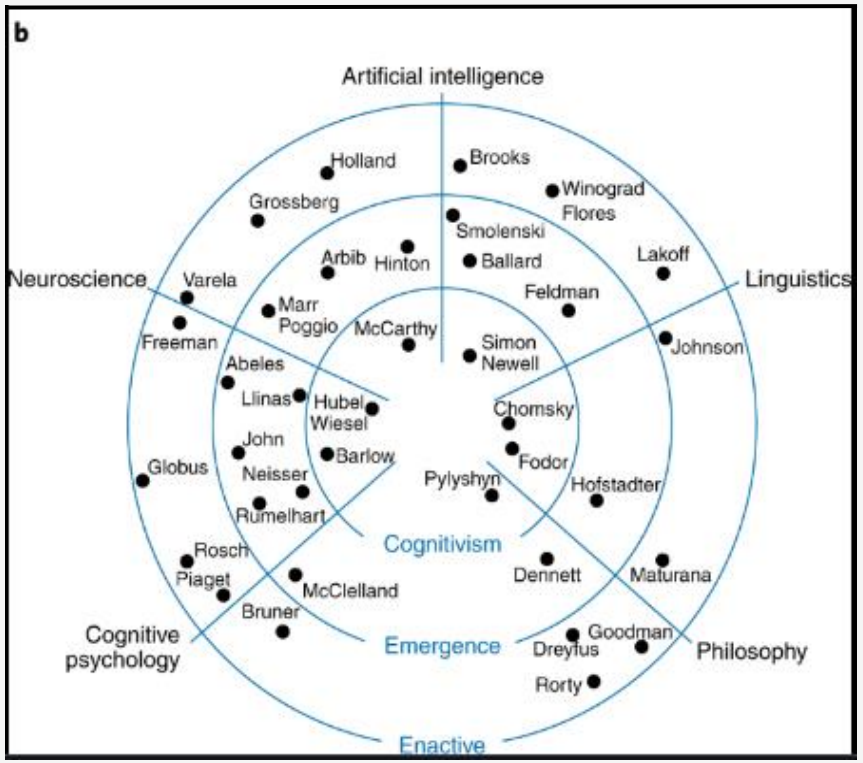
2023_1

Aula 3

https://us06web.zoom.us/j/85438264015?pwd=TUFYeXp6elNUTTVkVnp0T3VSSk11UT09

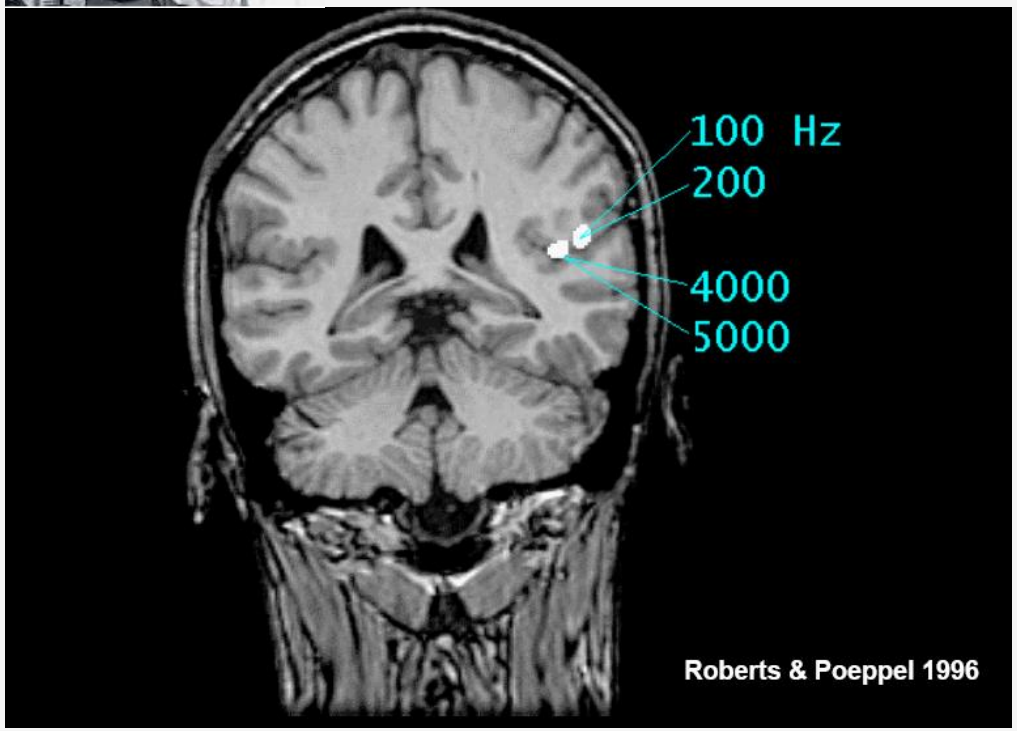
Revolução Cognitivista: New England (MIT e Harvard)



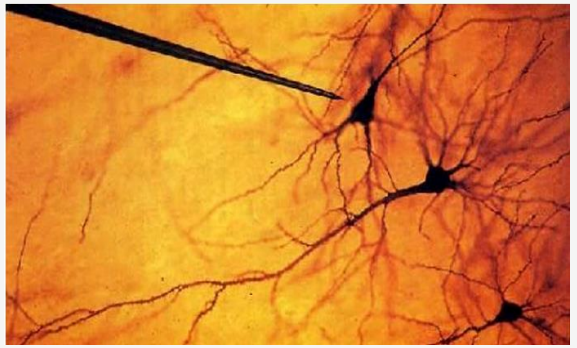


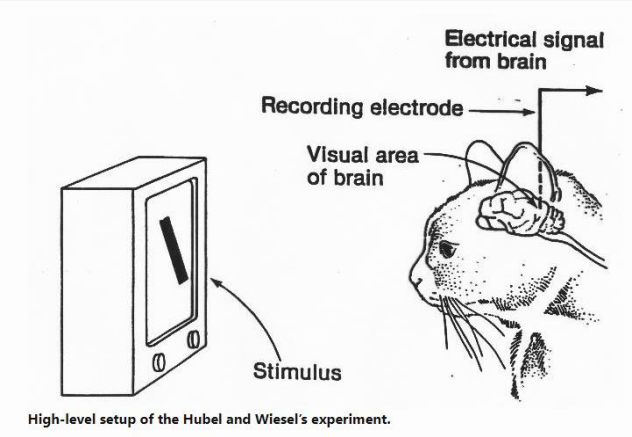
CONCOMITÂNCIAS

George Von Békésy, Nobel em 1961

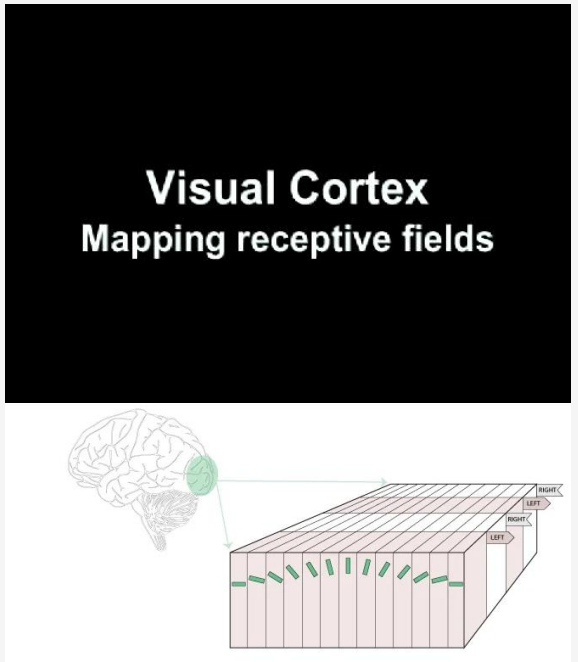


Hubel e Wiesel, Prêmio Nobel em 1981



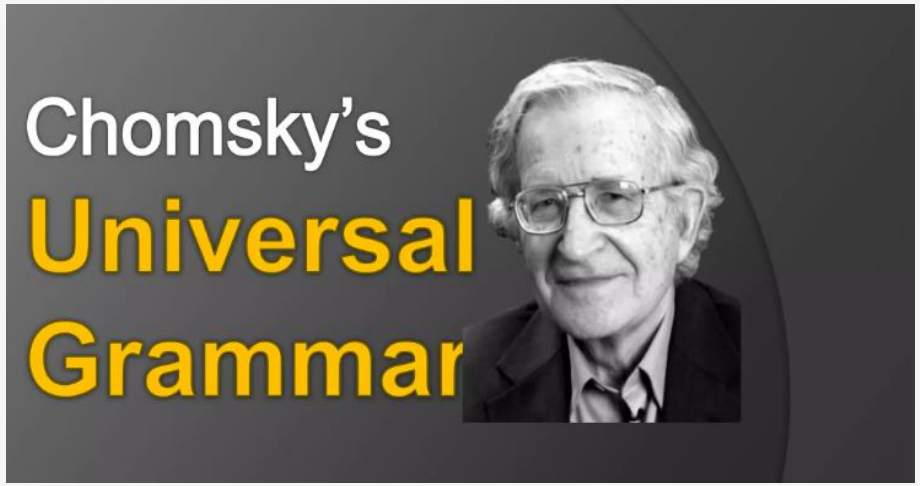


High-level setup of the Hubel and Wiesel's experiment.



A PARTIR DOS ANOS 50

Resumo de 70 anos de Gramática Gerativa



- A linguagem é específica da espécie (nenhuma espécie além da humanidade tem algo remotamente comparável à linguagem).
- A linguagem é um dom biológico.
- A linguagem não é o produto da evolução no sentido de que não é uma adaptação
- A linguagem não é antes de tudo uma ferramenta de comunicação e sim o instrumento do pensamento humano.
- A linguagem surgiu como um todo, em vez de gradualmente (a chamada posição saltacionista)

GRAMÁTICA UNIVERSAL OU GRAMÁTICA MENTAL

GU

- Propõe que a capacidade de aprender gramática está conectada ao cérebro
- A capacidade linguística se manifesta sem ser ensinada
- Existem propriedades que toda linguagem humana compartilha

OUTRAS GRAMÁTICAS

- Prescritivas
- Pedagógicas
- Descritivas

O que é a GU?

Se o ser humano for criado em condições normais, sempre desenvolverá comando nativo de uma língua com propriedade para distinguir substantivos de verbos ou distinguir palavras funcionais de palavras lexicais.

Como resultado, uma língua X é considerada uma propriedade da gramática universal no sentido mais geral e também uma propriedade inata do cérebro humano. A sensibilidade para distinguir entre substantivos e verbos aos 20 meses sempre que apresentados como dados linguísticos, deve envolver três fatores:

I – dotação genética,
II – experiência convertida em dado linguístico
III – princípios externos que independem da linguagem e mesmo do organismo fora da Faculdade de Linguagem

Studying the Real-Time Interpretation of Novel Noun and Verb Meanings in Young Children

Alex de Carvalho[1,2,3], Mireille Babineau[1,2], John C. Trueswell[3], Sandra R. Waxman[4] and Anne Christophe[1,2]*

frontiers 2019

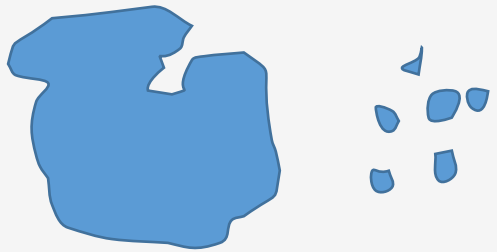
TAREFA DO LINGUISTA

- Cabe ao linguista observar, introspectar e experimentar para determinar com precisão quais são as habilidades inatas e quais são as propriedades comuns, presentes em todas as línguas

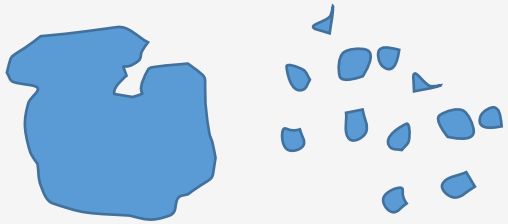
- Plano de trabalho: Abordagem de Princípios e Parâmetros

- **Diferentes Versões**

Transformacional >

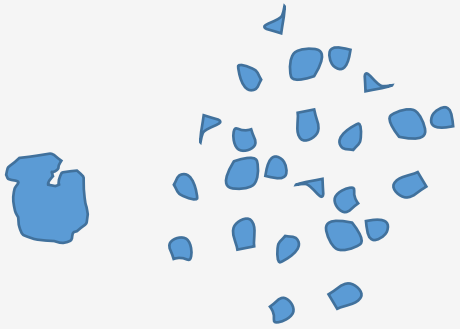


Teoria Padrão >



Regência e Ligação >

Minimalismo



ADEQUAÇÕES CIENTÍFICAS DOS ESTUDOS LINGUÍSTICOS

ERA PRÉ-SASSUREANA

Comparativismo

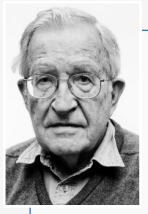
Idealização

Discurso Controlado

Prescrição

Observacional

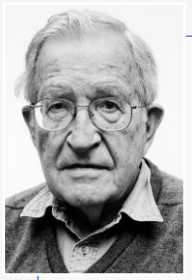
Descritiva



Explicativa

Neurofisiológica

DISCRIMINAÇÃO BÁSICA PARA OS ESTUDOS LINGUÍSTICOS



Explicativa

Neurofisiológica

Faculdade de Linguagem Ampla (FLB)
X
Faculdade de Linguagem Estrito Senso

A FLB inclui um sistema sensório-motor, um sistema conceitual-intencional e o sistema computacional, mecanismos de recursão, proporcionando a capacidade de gerar uma gama infinita de expressões de um conjunto finito de elementos.

A FLN inclui apenas recursão e é o único componente exclusivamente humano da faculdade da linguagem.
A FLN evoluiu por outras razões além da linguagem, portanto estudos comparativos podem procurar evidências de tais cálculos fora do domínio da comunicação
(por exemplo, nos cálculos numéricos, navegação e nas relações sociais).

HIPÓTESES EVOLUTIVAS: HAUSER, CHOMSKY E FITCH 2002 /2010

1

Fatores FLB seriam estritamente homólogos à comunicação animal. Isso significa que aspectos da faculdade da linguagem também existiriam em animais não humanos.

2

FLB seria uma adaptação exclusivamente humana derivada para a linguagem. Esta hipótese acredita que os traços individuais foram sujeitos à seleção natural e passaram a ser muito especializados para os humanos

3

Apenas a FLN seria exclusiva dos humanos Todas as propriedades da FLB estariam presentes tanto em humanos quanto em animais não humanos. Porém o mecanismo computacional de recursão linguística teria evoluído por meio de exaptação, recentemente, apenas em humanos.

SCIENCE'S COMPASS • REVIEW

REVIEW: NEUROSCIENCE

The Faculty of Language: What Is It, Who Has It, and How Did It Evolve?

Marc D. Hauser,[1]* Noam Chomsky,[2] W. Tecumseh Fitch[3]

We argue that an understanding of the faculty of language requires substantial interdisciplinary cooperation. We suggest how current developments in linguistics can be profitably wedded to work in evolutionary biology, anthropology, psychology, and neuroscience. We submit that a distinction should be made between the faculty of language in the broad sense (FLB) and in the narrow sense (FLN). FLB includes a sensory-motor system, a conceptual-intentional system, and the computational mechanisms for recursion, providing the capacity to generate an infinite range of expressions from a finite set of elements. We hypothesize that FLN only includes recursion and is the only uniquely human component of the faculty of language. We further argue that FLN may have evolved for reasons other than language, hence comparative studies might look for evidence of such computations outside of the domain of communication (for example, number, navigation, and social relations).

If a martian graced our planet, it would be struck by one remarkable similarity among Earth's living creatures and a key difference. Concerning similarity, it would note that all living things are designed on the basis of highly conserved developmental systems that read an (almost) universal language encoded in DNA base pairs. As such, life is arranged hierarchically with a foundation of discrete, unblendable units (codons, and, for the most part, genes) capable of combining to create increasingly complex and virtually limitless varieties of both species and individual organisms. In contrast, it would notice the absence of a universal code of communication (Fig. 1).

If our martian naturalist were meticulous, it might note that the faculty mediating human communication appears remarkably different from that of other living creatures; it might further note that the human faculty of language appears to be organized like the genetic code—hierarchical, generative, recursive, and virtually limitless with respect to its scope of expression. With these pieces in hand, this martian might begin to wonder how the genetic code changed in such a way as to generate a vast number of mutually incomprehensible communication systems across species while maintaining clarity of comprehension within a given species. The martian would have stumbled onto some of the essential problems surrounding the question of language evolution, and of how humans acquired the faculty of language.

In exploring the problem of language evolution, it is important to distinguish between questions concerning language as a communicative system and questions concerning the computations underlying this system, such as those underlying recursion. As we argue below, many seriously debates in this field have been launched by a failure to distinguish between these problems. According to one view (1), questions concerning abstract computational mechanisms are distinct from those concerning communication, the latter targeted at problems at the interface between abstract computation and both sensory-motor and conceptual-intentional interfaces. This view should not, of course, be taken as a claim against a relationship between computation and communication. It is possible, as we discuss below, that key computational capacities evolved for reasons other than communication but, after they proved to have utility in communication, were altered because of constraints imposed at both the periphery (e.g., what we can hear and say or see and sign, the rapidity with which the auditory cortex can process rapid temporal and spec-

Fig. 1. The animal kingdom has been designed on the basis of highly conserved developmental systems that read an almost universal language coded in DNA base pairs. This system is shown on the left in terms of a phylogenetic tree, in contrast, animals lack a common universal code of communication, indicated on the right by unconnected animal groups. [Illustration: John Yanson]

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A HIPÓTESE DA EXAPTAÇÃO E SUAS CONSEQUÊNCIAS

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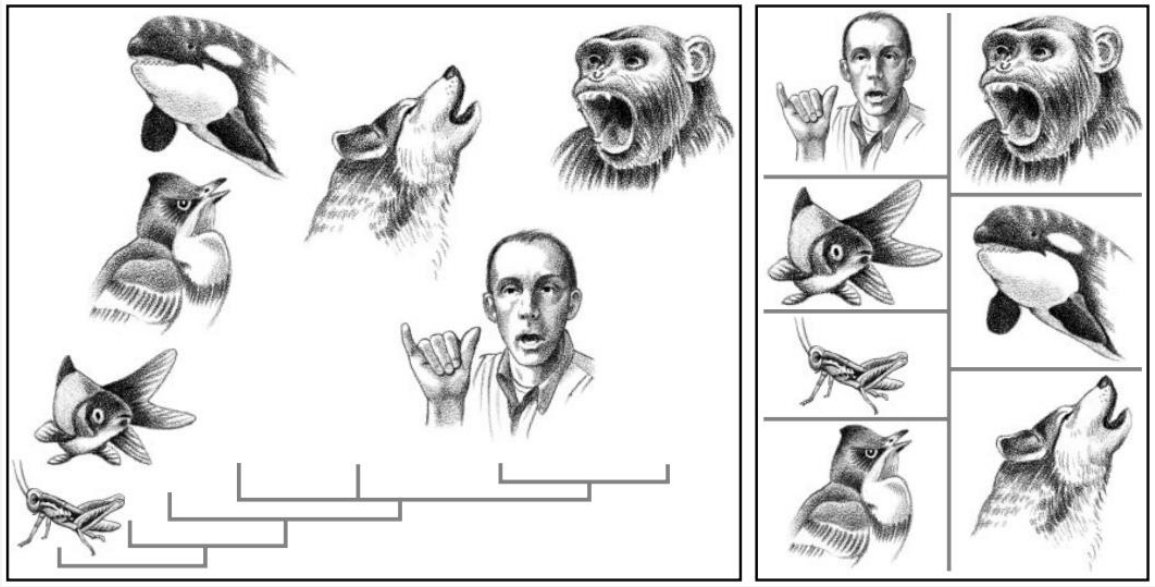
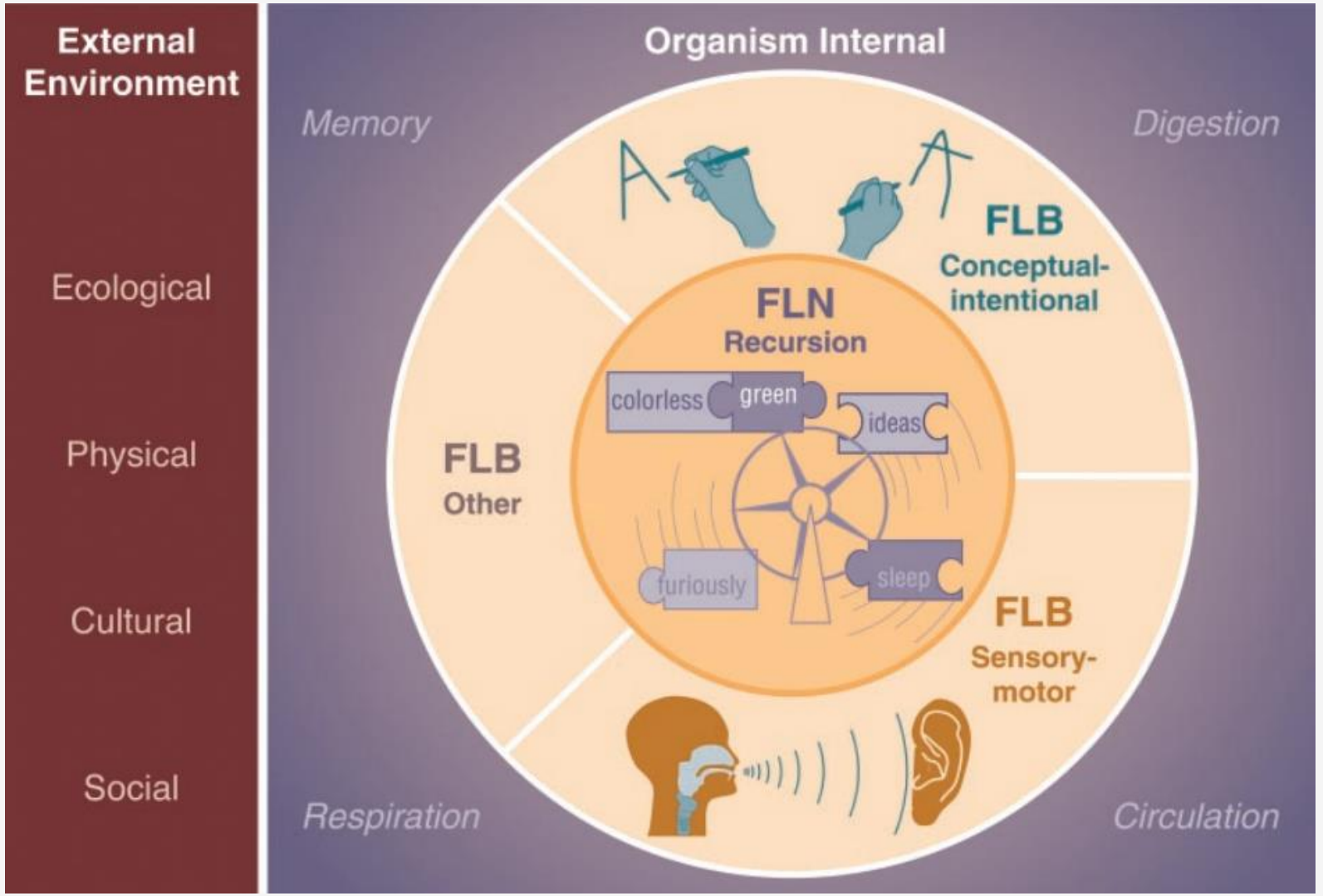


"O reino animal foi projetado com base em sistemas de desenvolvimento altamente conservadores que lêem quase que uma linguagem universal, codificada nos pares de bases de DNA.
Este sistema é mostrado à esquerda em termos de uma árvore filogenética. Porém, os animais, exceto o homem, carecem de um código de comunicação universal comum, indicado à direita por grupos desconexos de animais.

A HIPÓTESE DA EXAPTAÇÃO E SUAS CONSEQUÊNCIAS



Obrigada!

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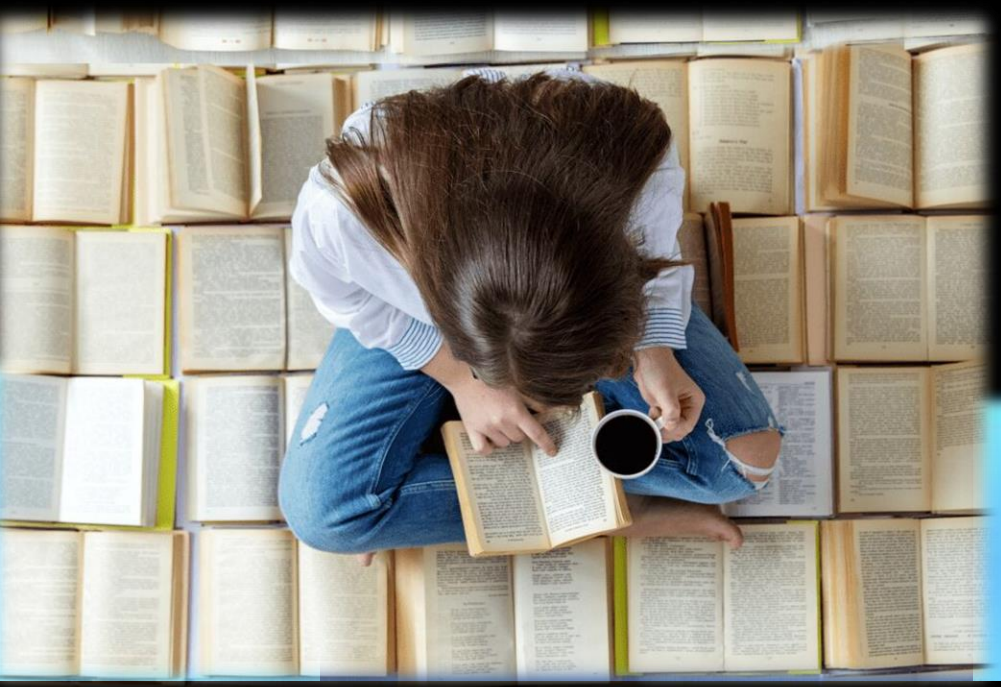

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