



III Jornada de Paternidad y Perinatalidad

Padres de Bebés

Atención a la transición a la paternidad en 2021

18 de marzo de 2021

presencial y online
saludmentalperinatal.es



Instituto Europeo de
Salud Mental Perinatal

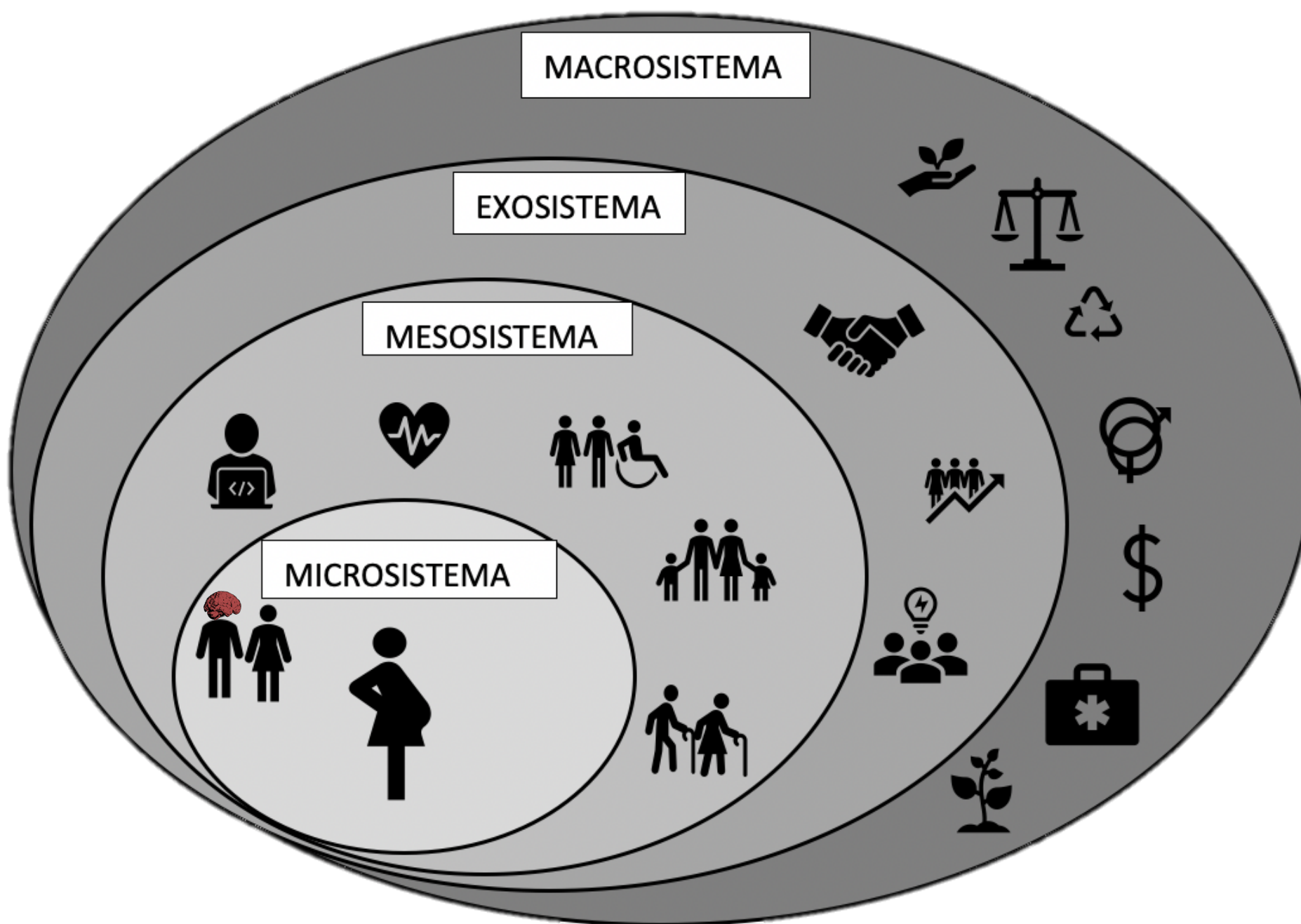
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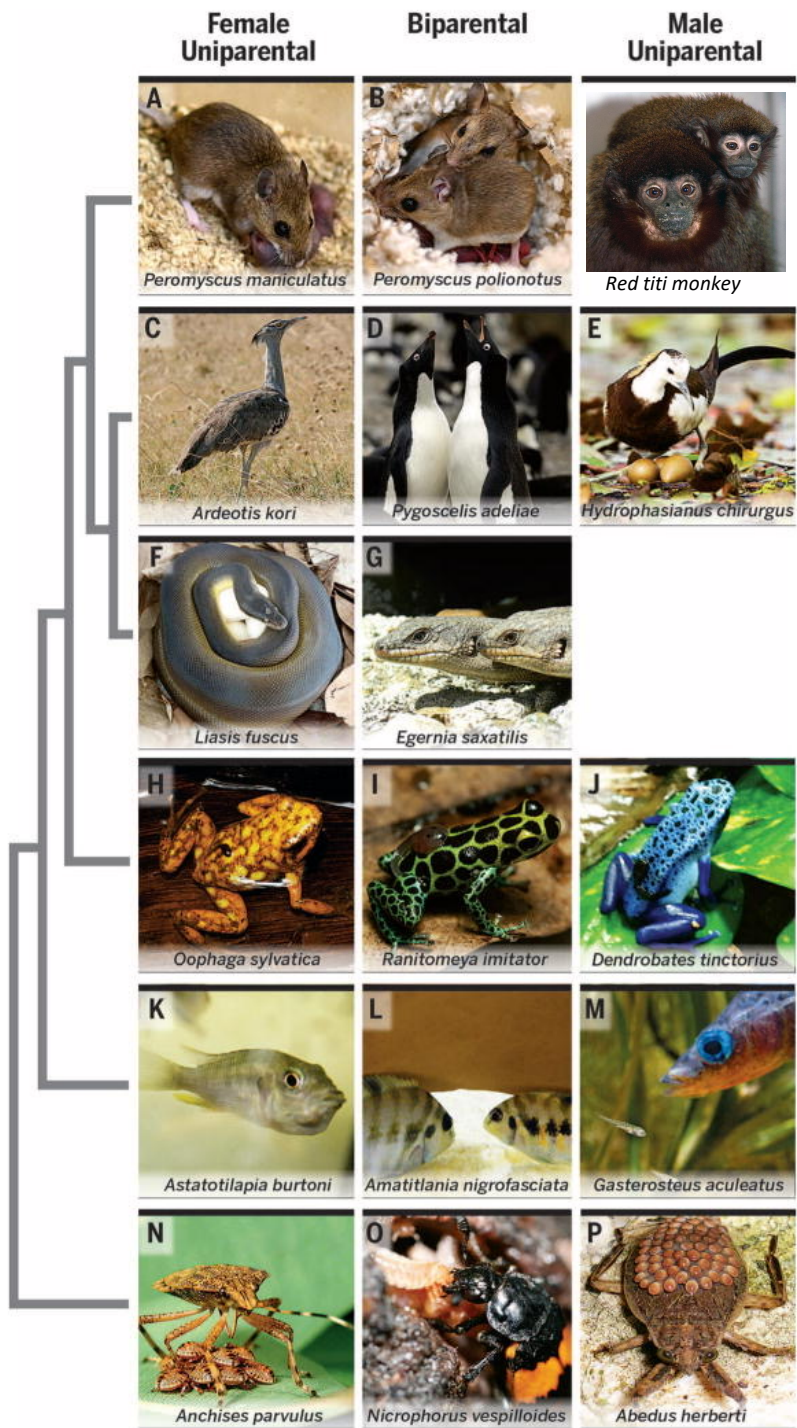


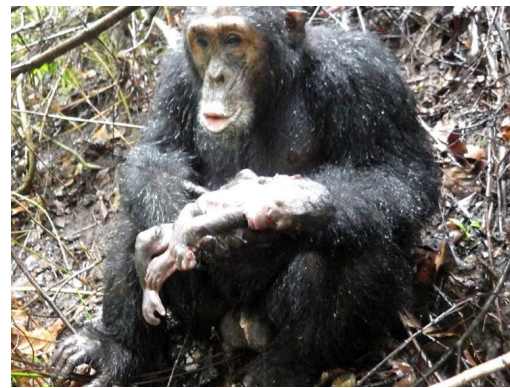
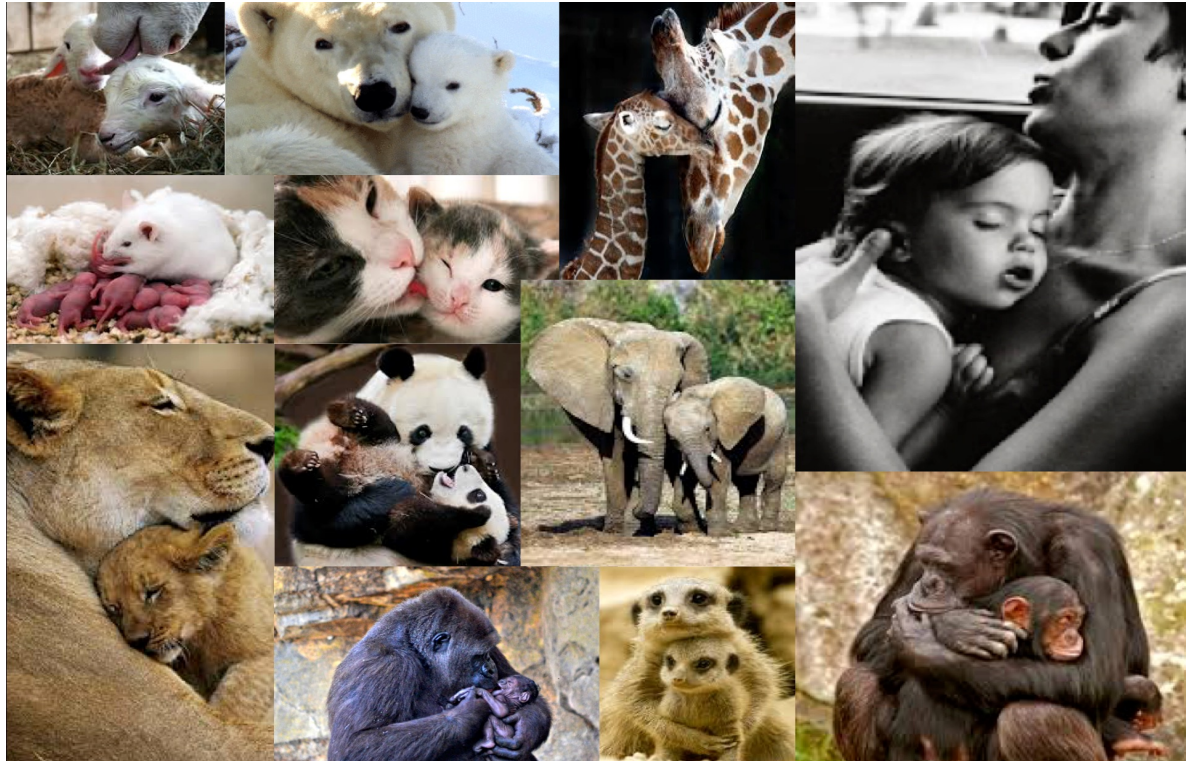
El cerebro del padre

Profesor/a:

Susanna Carmona Cañabate



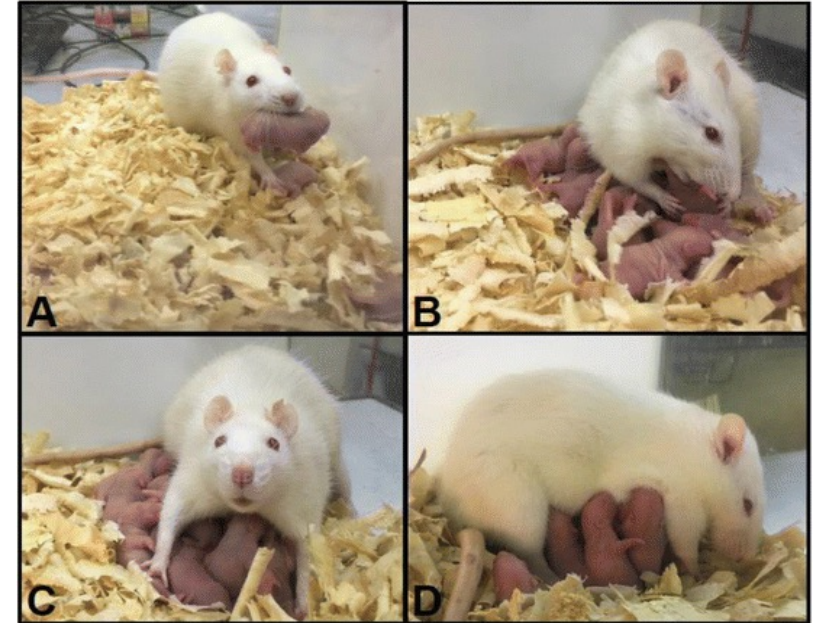






Conducta Maternal

- **Cambio** en el repertorio conductual (emocional, cognitivo, social) dedicado a asegurar (directa o indirectamente) el **bienestar físico y psíquico de las crías.**
- **PRE-PARTO:**
 - Disminuye interés miembros adultos incrementa interés por otras crías
 - Reducción respuesta al estrés
 - Preparación del nido
- **POST-PARTO:**
 - Atracción por estímulos procedentes de las crías
 - Recogida agrupación crías
 - Necesidad de contacto
 - Amamantamiento y calor
 - Limpiado y acicalado de crías
 - Conductas de protección (agresividad a extraños...)

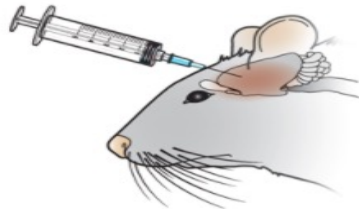


Ratón virgen



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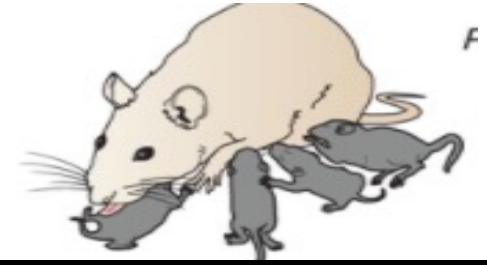
Naive virgin
(24 hrs co-housing)



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Naive virgin
with oxytocin in
left auditory cortex
(12 hrs co-housing)

Madre

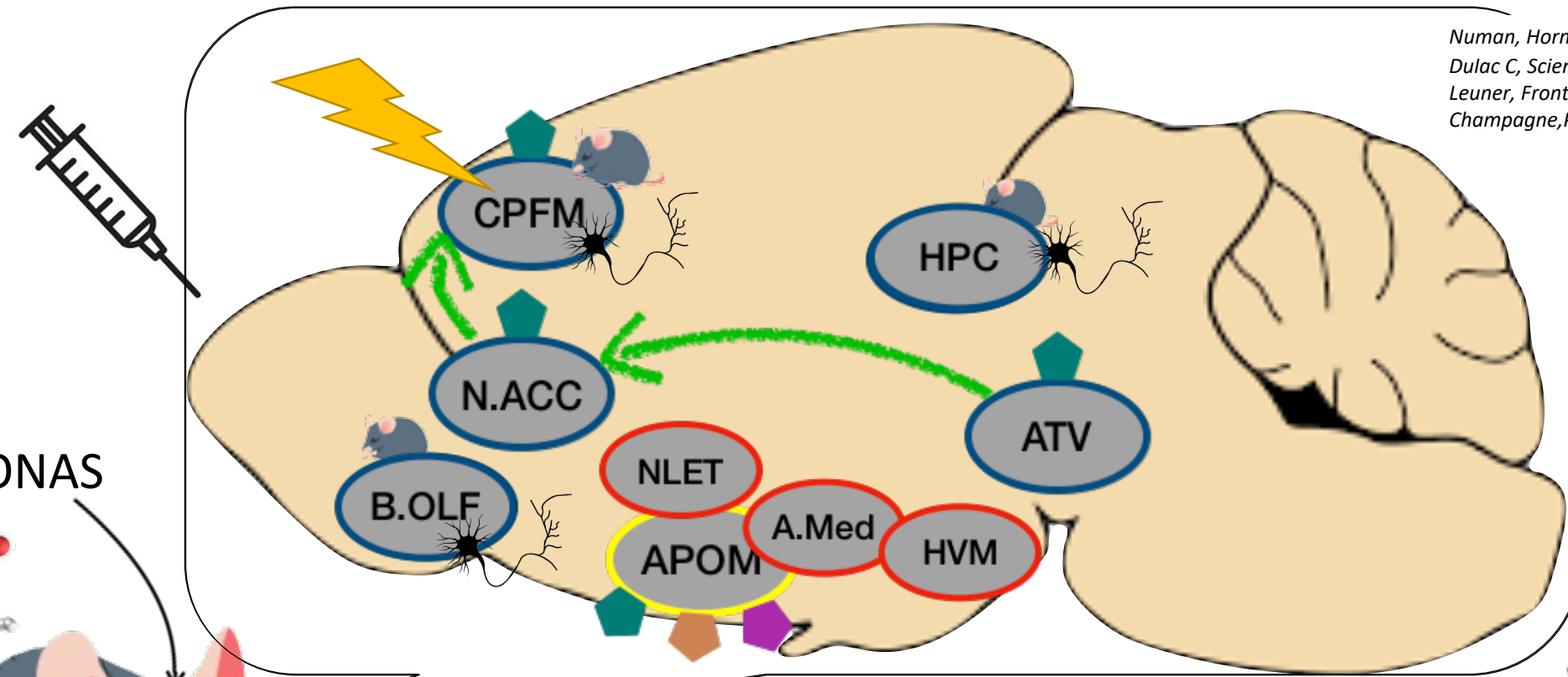


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Dam retrieval

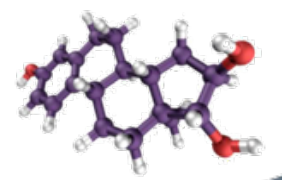
Marlin B., et al. Nature, 2015

Numan, Horm & Beh (2015)
 Dulac C, Science (2014)
 Leuner, Front Neuroendocrinol (2016)
 Champagne, Physiology and Behavior (2003)



-  Receptores de oxitocina
-  Receptores de estrógenos
-  Receptores de progesterona
-  Dopamina
-  Estimulación crías

HORMONAS



INTERACCIÓN CON LAS CRÍAS

Nodo central del circuito maternal

- Inhibición del circuito de evitación y rechazo a las crías
- Estimulación del circuito del placer y atracción hacia las crías

Conducta Paternal



Box 1. Forms of male care

Male care may be defined as any behaviour by adult males which benefits young and which would not be carried out if young were absent.

Feeding: males may carry food to the young, or allow them to take food from them during foraging, e.g. banded mongooses (*Mungos mungo*)⁹, night monkeys (*Aotus trivirgatus*), saddle-back tamarins (*Saguinus fuscicollis*)³. Males may also invest in the young before they are weaned, or even born, by feeding the mother, e.g. African wild dogs (*Lycaon pictus*)⁶.

Carrying: in species where the young travel with the mother, males may take part in carrying the young (Fig. 1), e.g. common marmosets (*Callithrix jacchus*), night monkeys, titi monkeys (*Callicebus moloch*)³.

Huddling: newborn mammals may be incapable of maintaining their body temperature and so require 'brooding', e.g. Djungarian hamsters (*Phodopus campbelli*), California mice (*Peromyscus californicus*)⁴, greater white-toothed shrews (*Crocidura russula*)¹¹.

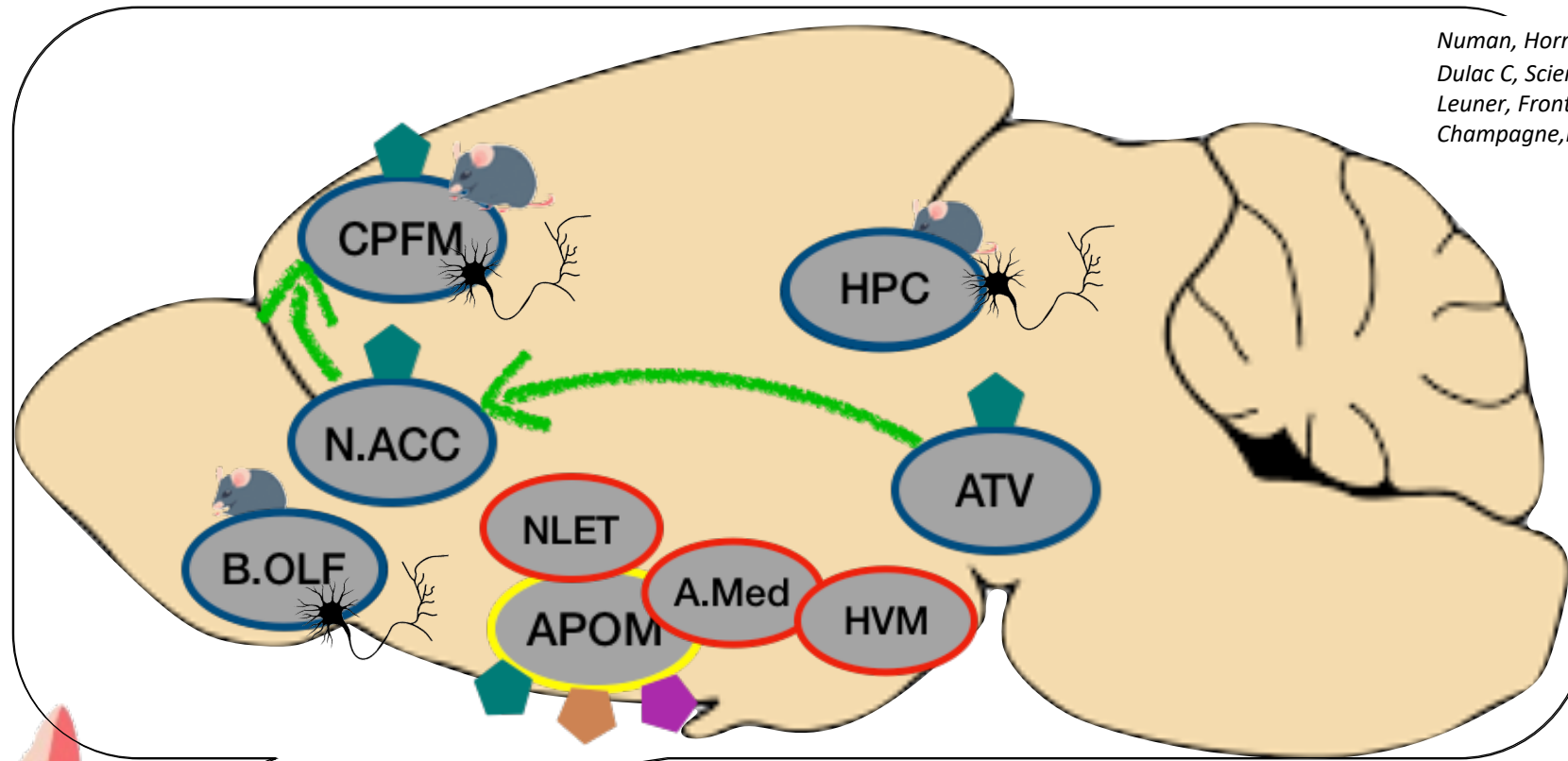
Babysitting: in the absence of females, males may remain with young as babysitters, protecting them from predators and retrieving them if necessary, e.g. dwarf mongooses (*Helogale parvula*)⁹, killer whales (*Orcinus orca*)¹².

Defence: males may defend young actively against predators, e.g. indris (*Indri indri*)⁷.

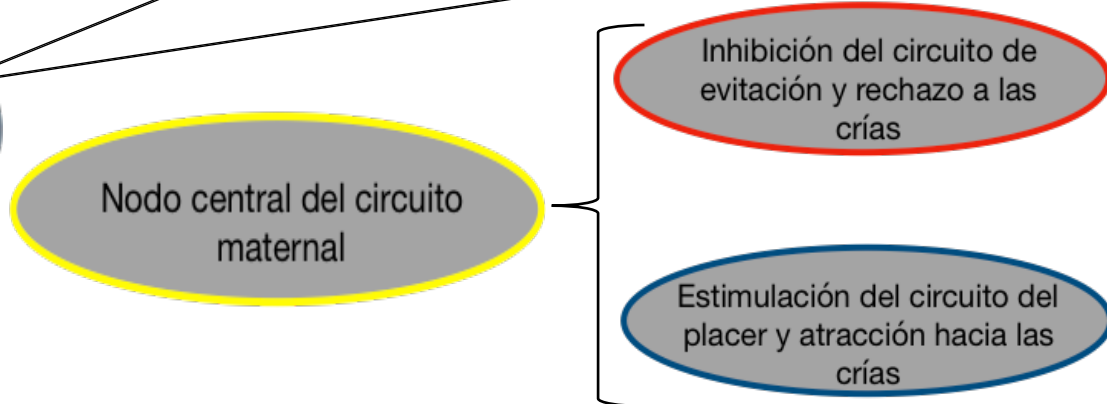
Grooming: where young are susceptible to ectoparasites, males may groom them, e.g. California mice⁴, cotton-top tamarins (*Saguinus oedipus*), Barbary macaques (*Macaca sylvanus*)³.

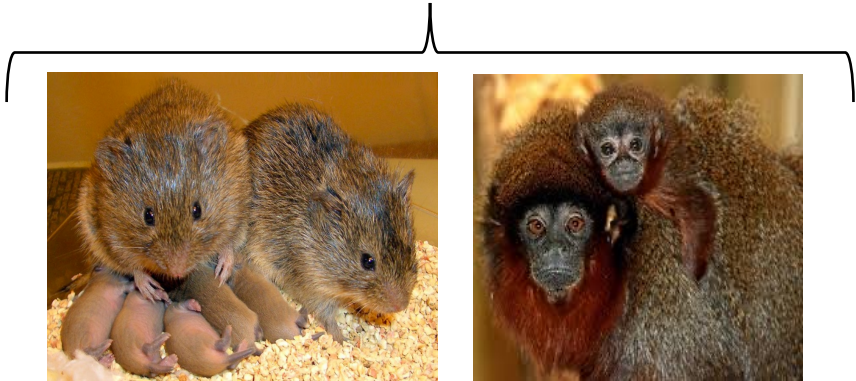
Teaching: in group-living primates, males may contribute to infants' 'socialization', enabling them to establish important long-term affiliative bonds, e.g. Barbary macaques²⁷.

Numan, Horm & Beh (2015)
Dulac C, Science (2014)
Leuner, Front Neuroendocrinol (2016)
Champagne, Physiology and Behavior (2003)

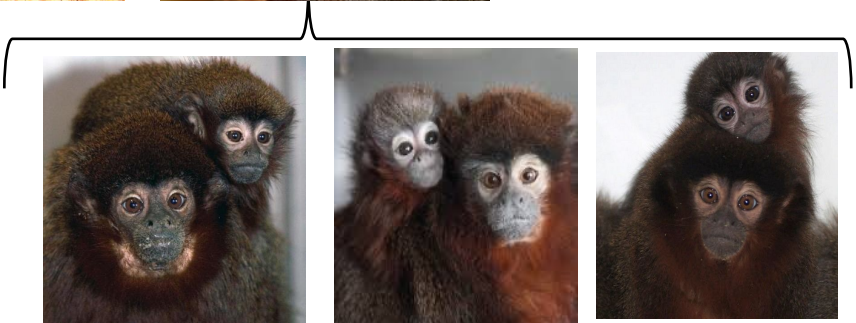


INTERACCIÓN
CON LAS CRÍAS

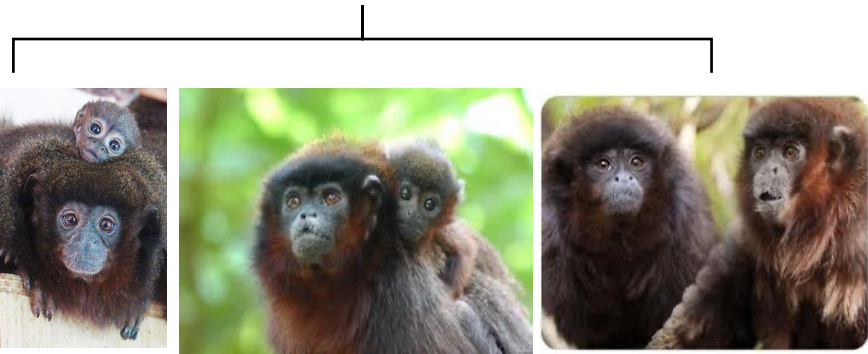




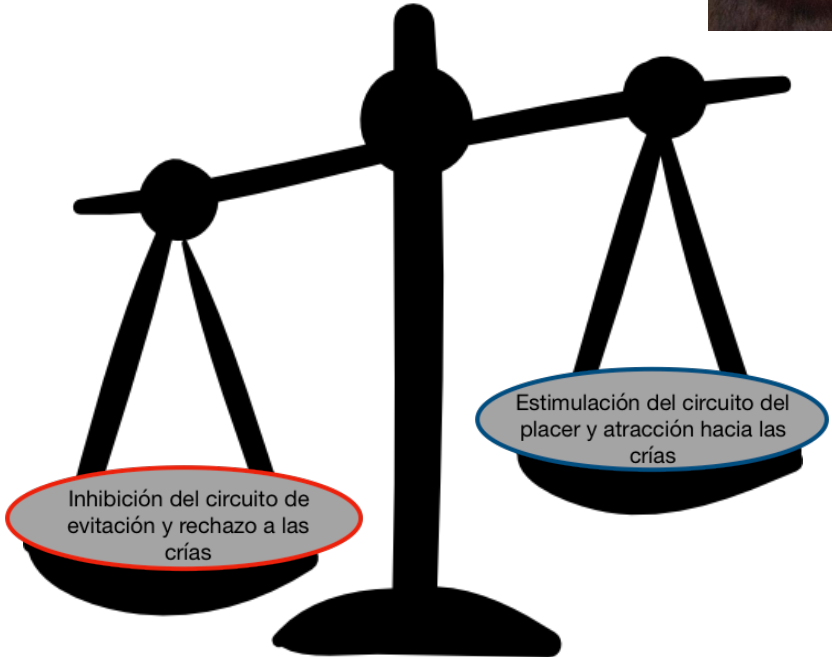
Variabilidad entre especies



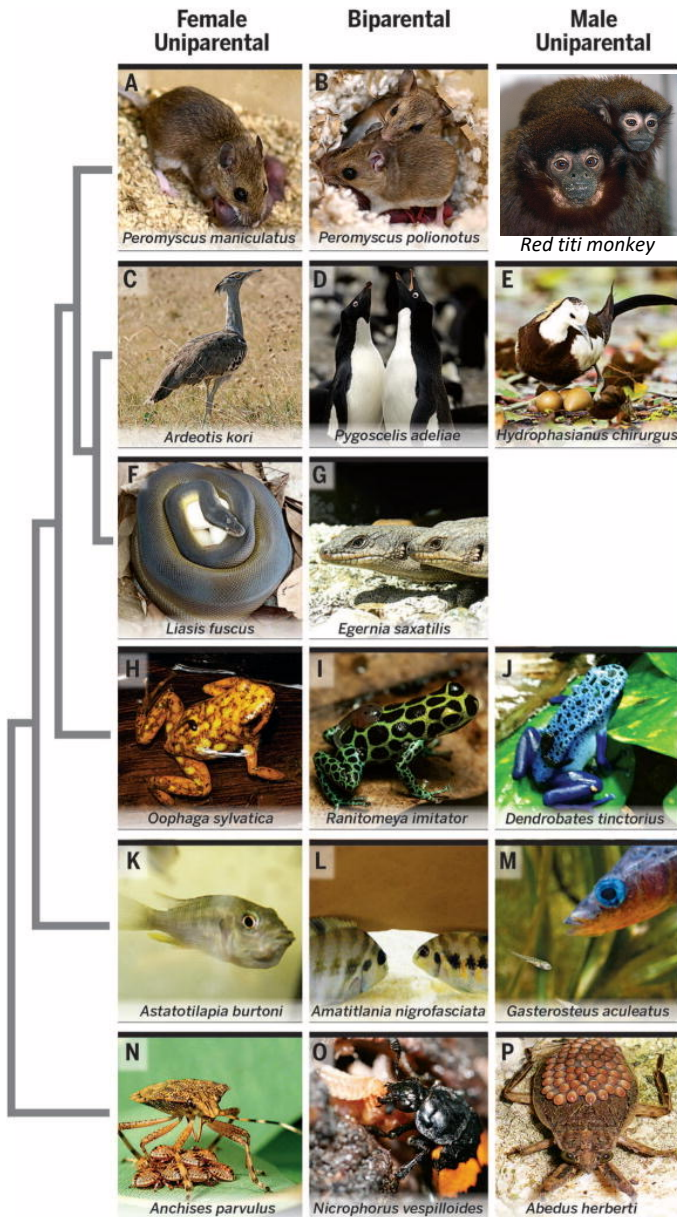
Variabilidad entre individuos



Variabilidad ambiental



Variabilidad entre especies



MAMÍFEROS

- 100% MUESTRAN CONDUCTA MATERNAL
- 3-5% MUESTRAN CONDUCTA PATERNAL

NO CONDUCTA PATERNAL

- Ignoran
- Evitan
- Atacan
- Matan (25% aprox)

SÍ CONDUCTA PATERNAL

- OBLIGATORIA

California



Prairie voles



Mandarin voles

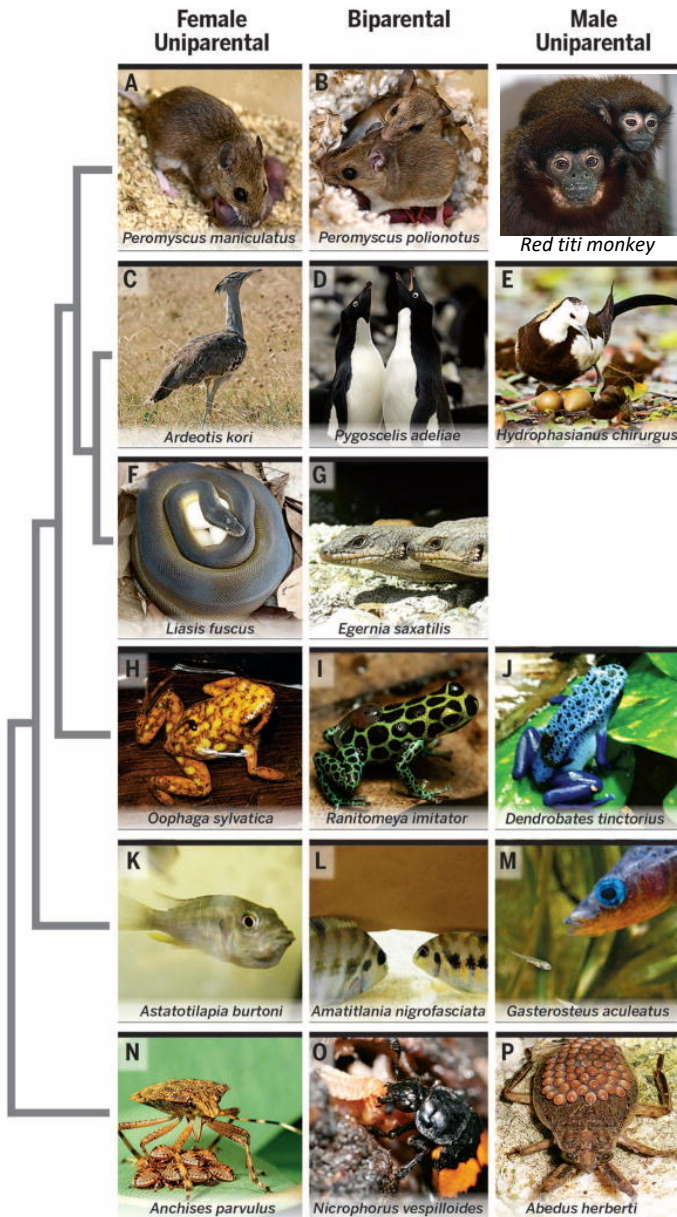


Red titi monkey

- FACULTATIVA

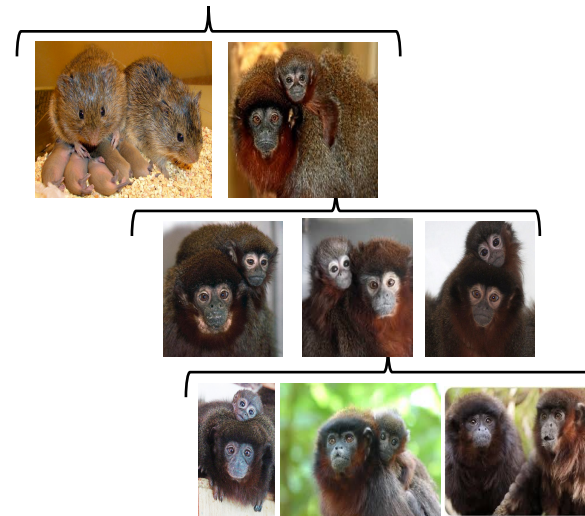


Variabilidad entre especies



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Variabilidad individual

Variabilidad ambiental

SÍ CONDUCTA PATERNAL

- OBLIGATORIA

California



Prairie voles



Mandarin voles

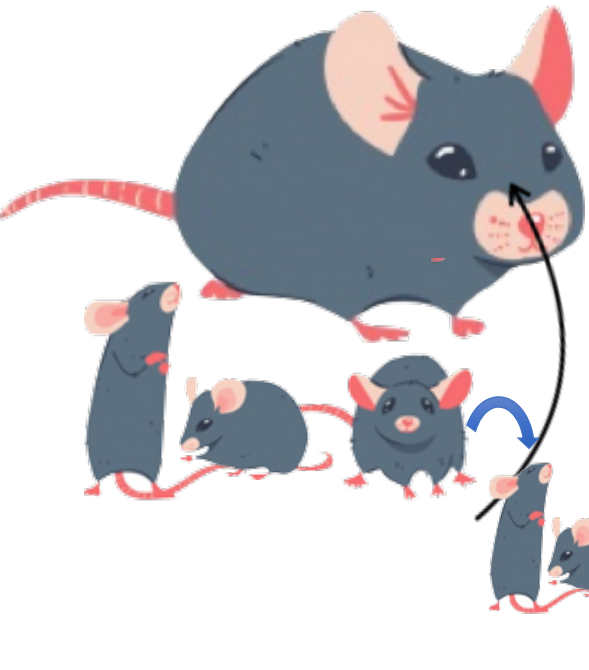
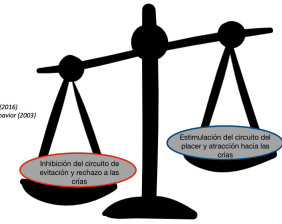
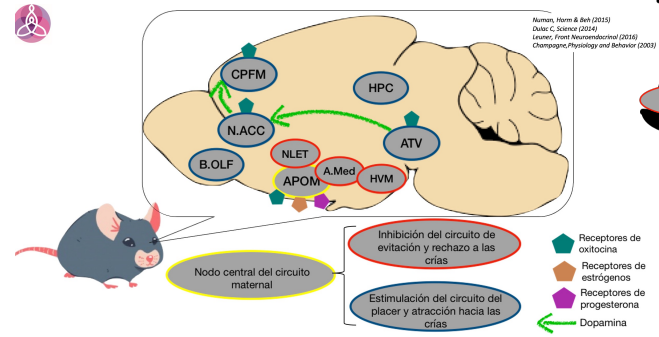
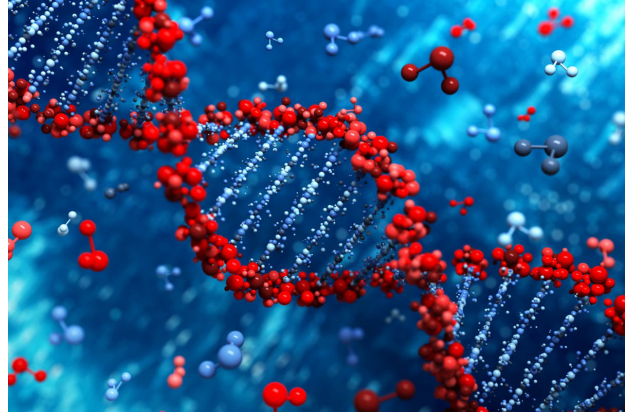


Red titi monkey

- FACULTATIVA



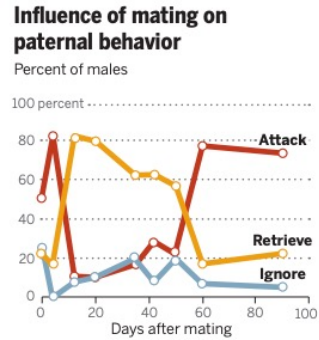
Variabilidad entre individuos



CUIDADO MATERNAL
CUIDADO PATERNAL
EXPERIENCIA PREVIA CON CRÍAS

Variabilidad ambiental

- **COPULAR**

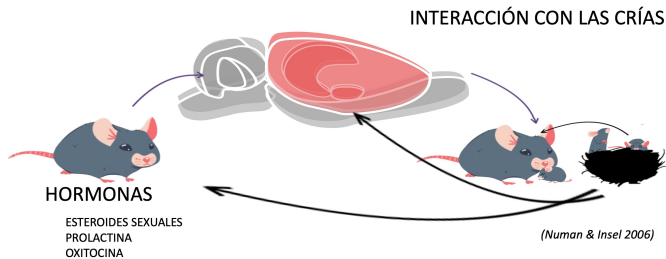


- **COHABITAR CON HEMBRA EMBARAZADA, PARTURIENTA O LACTANTE**



- **INTERACCIÓN CON LAS CRÍAS**

- PERIODO DE SENSIBILIZACIÓN
- CONDUCTA PATERNAL A PARTIR DE 6 MESES
- ↑PROLACTINA ↓TESTOSTERONA (¿CAUSA O EFECTO?)



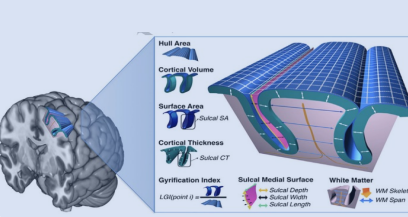
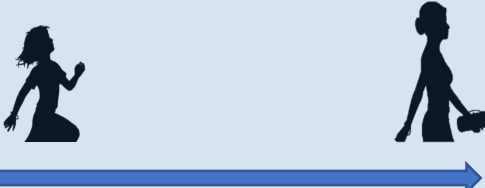
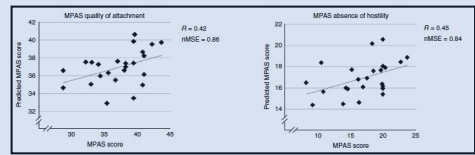
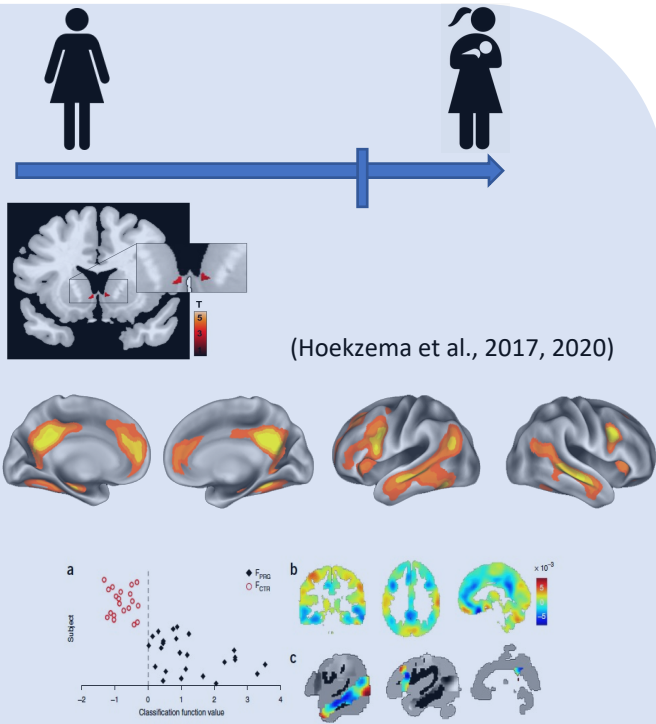
Dulac, C, 2017; "The neurobiology of paternal brain", YOUTUBE



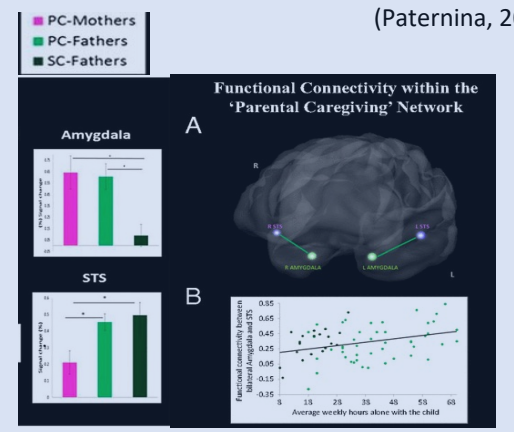
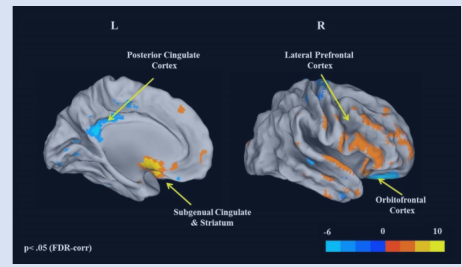
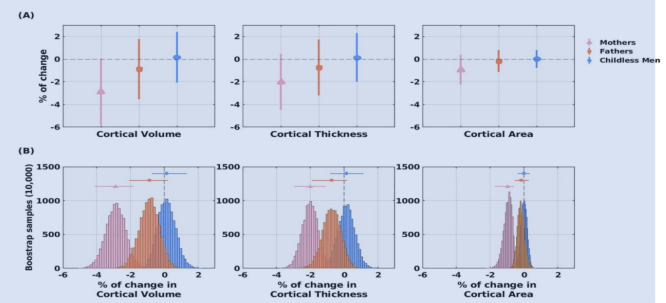
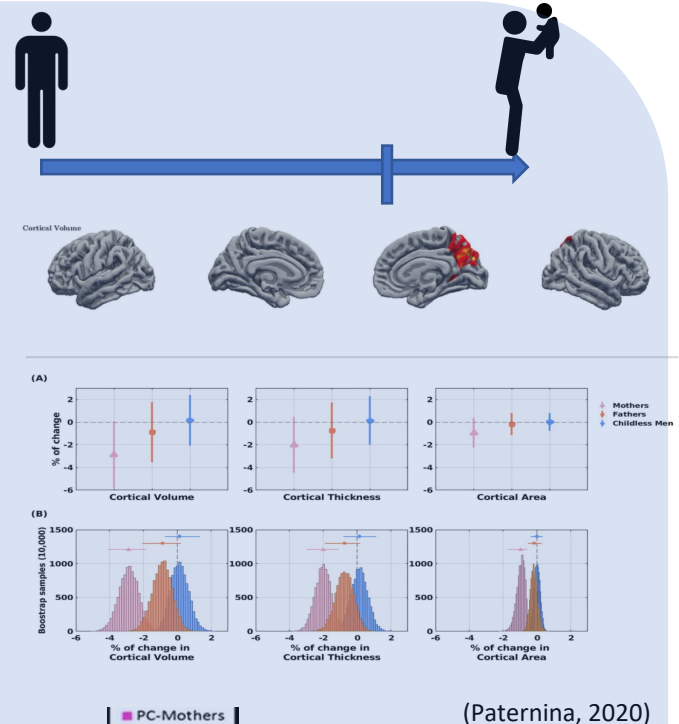
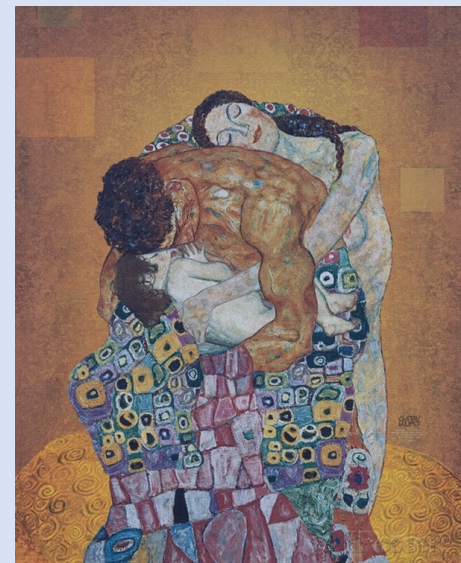
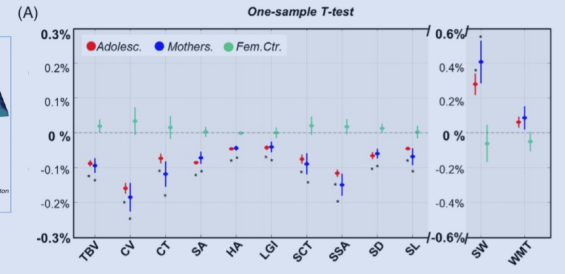
Siamangs

- **ESTRÉS: PRESENCIA DE AGRESORES, FALTA DE ALIMENTOS/RECURSOS QUE DIFICULTEN SUPERVIVENCIA.**





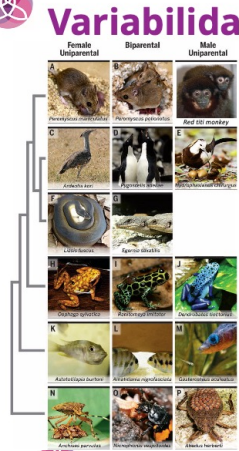
(Carmona et al., 2019)



(Abraham et al. 2014)

↓ TESTOSTERONA (Gettler et al. 2011, Saxbe, 2017, Khoddam, 2020)
 ↑ PROLACTINA & OXITOCINA (Gordon et al. 2010a, 2010b)

Variabilidad entre especies Socio-cultural



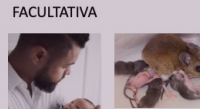
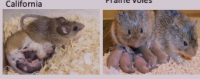
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- 3-5% MUESTRAN CONDUCTA PATERNAL

NO CONDUCTA PATERNAL

- Ignoran
 - Evitan
 - Atacan
 - Matan
 - Comen
- MONOGAMIA (50% CTA PATERNAL)**
♀♂
- POLIANDRIA**
♀♂♂
- POLIGINIA**
♂♀♀

SÍ CONDUCTA PATERNAL

- OBLIGATORIA

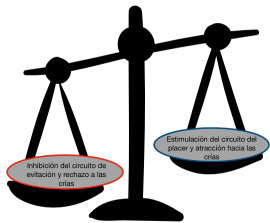
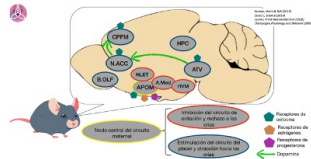


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Variabilidad entre individuos

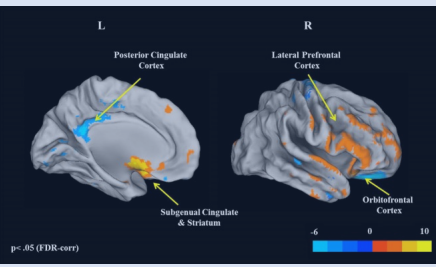
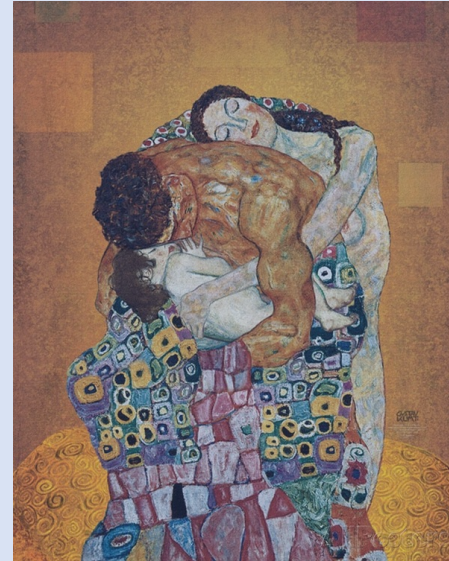
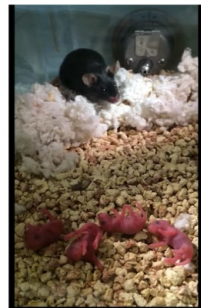
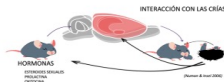


CUIDADO MATERNAL
CUIDADO PATERNAL
EXPERIENCIA PREVIA CON CRÍAS



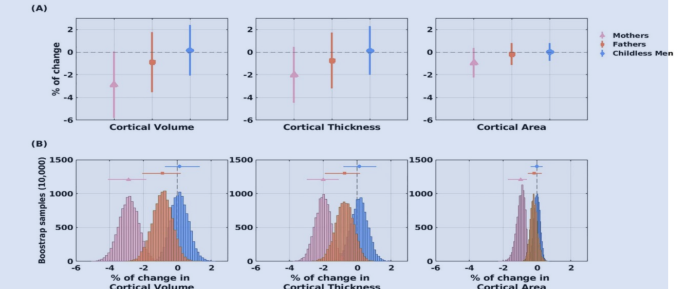
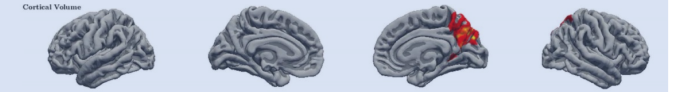
Variabilidad ambiental

- COPULAR
- COHABITAR CON HEMBRA EMBARAZADA, PARTURIENTA O LACTANTE
- INTERACCIÓN CON LAS CRÍAS
 - PERIODO DE SENSIBILIZACIÓN
 - CONDUCTA PATERNAL A PARTIR DE 6 MESES (¿TIEMPO SENSIBILIZACIÓN O MADRE PERMITE INTERACCIÓN?)
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- ESTRÉS, PRESENCIA DE AGRESORES, FALTA DE ALIMENTOS/RECURSOS QUE DIFICULTEN SUPERVIVENCIA.

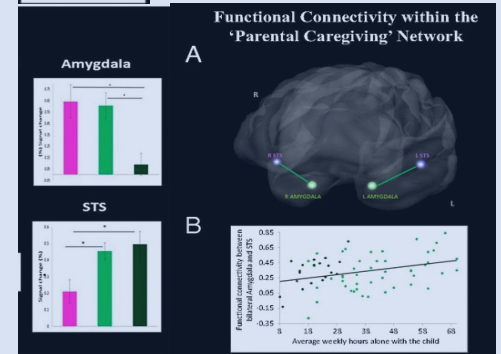


(Kim, 2014)

↓TESTOSTERONA (Gettler et al. 2011, Saxbe, 2017, Khoddam, 2020)
↑PROLACTINA & OXITOCINA (Gordon et al. 2010a, 2010b)



PC-Mothers
PC-Fathers
SC-Fathers
(Paternina, 2020)



(Abraham et al. 2014)

Gracias



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- Gracias por tu interés y esfuerzo