

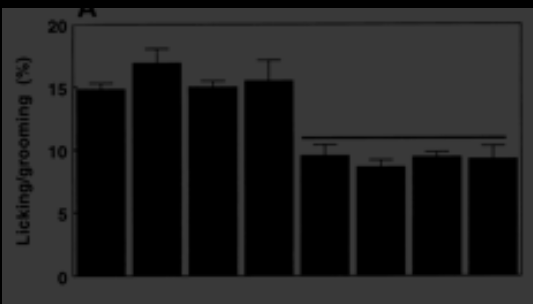
Annual Pre-Thanksgiving Flag Football



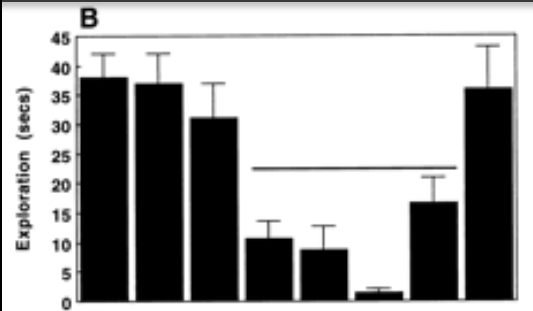
9:30 – 11:30 Wed Nov 21

Reed Front Lawn

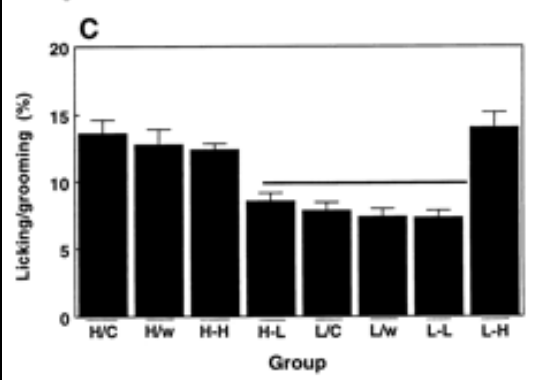
(friendly “pick-up” game; no set teams allowed)
(cider and donuts for all)



Maternal Behavior

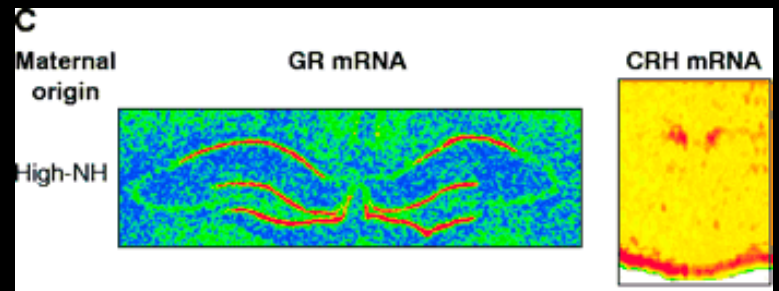
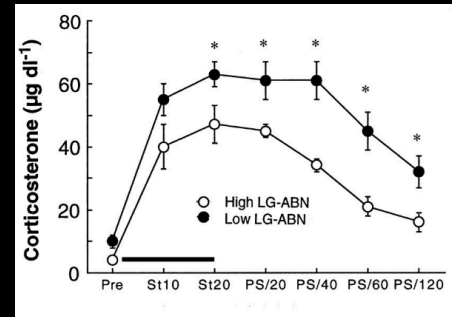


Grown Offspring exploration behavior

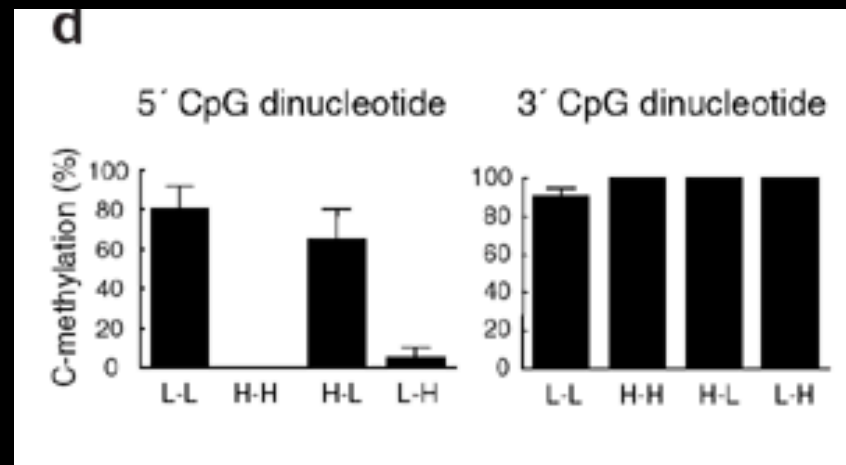
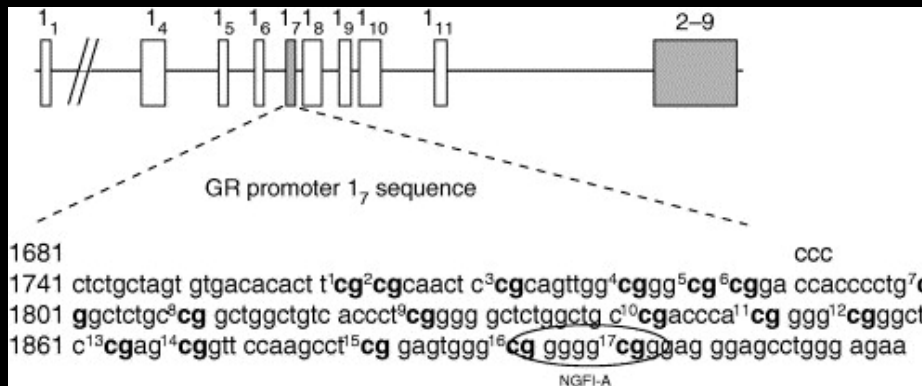


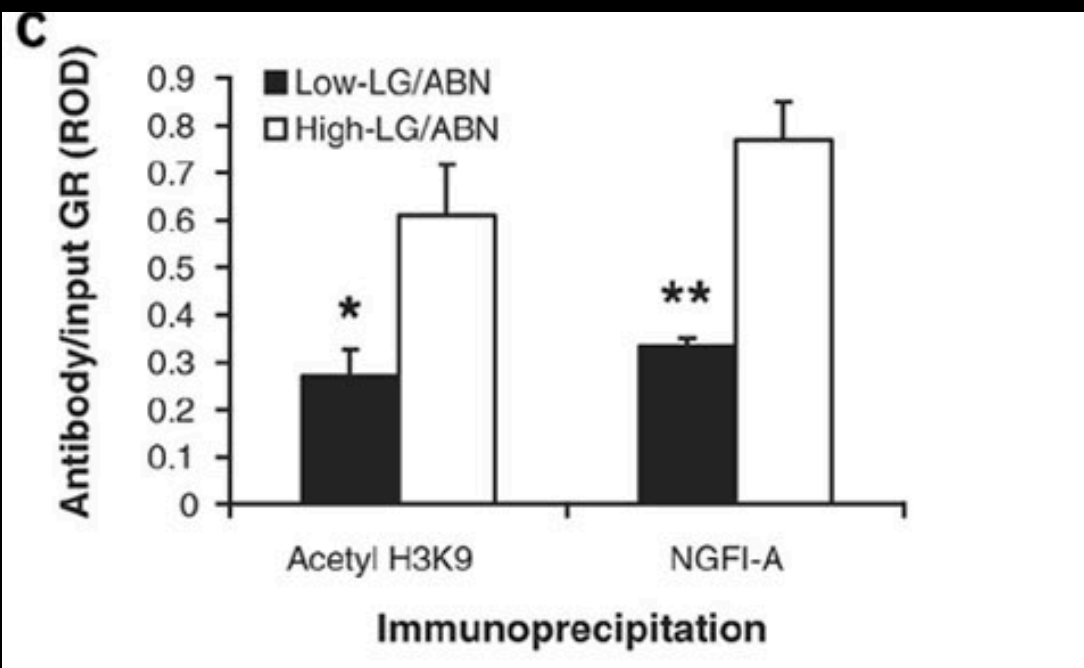
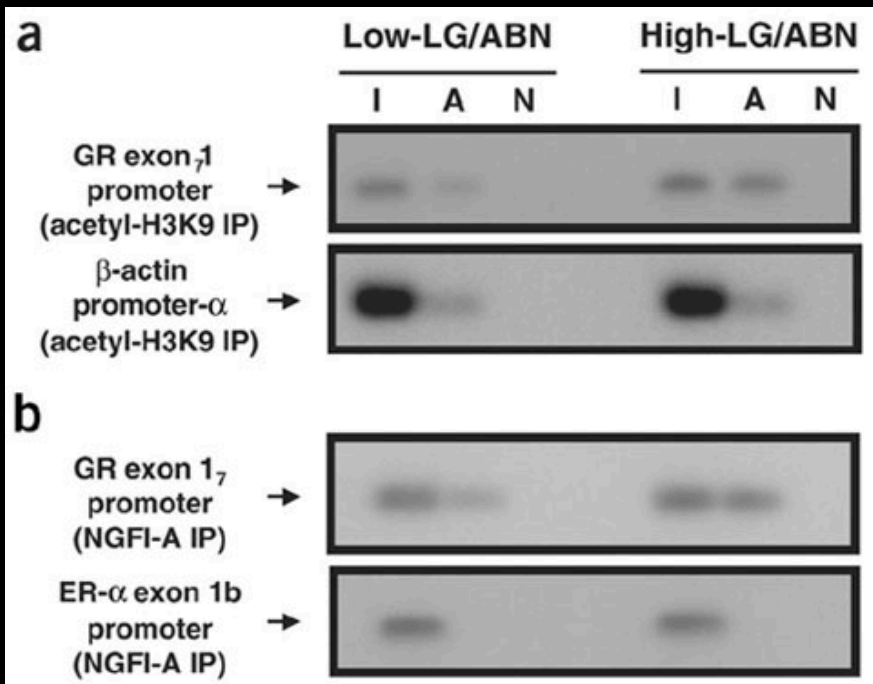
Grown Female Offspring Maternal Behavior

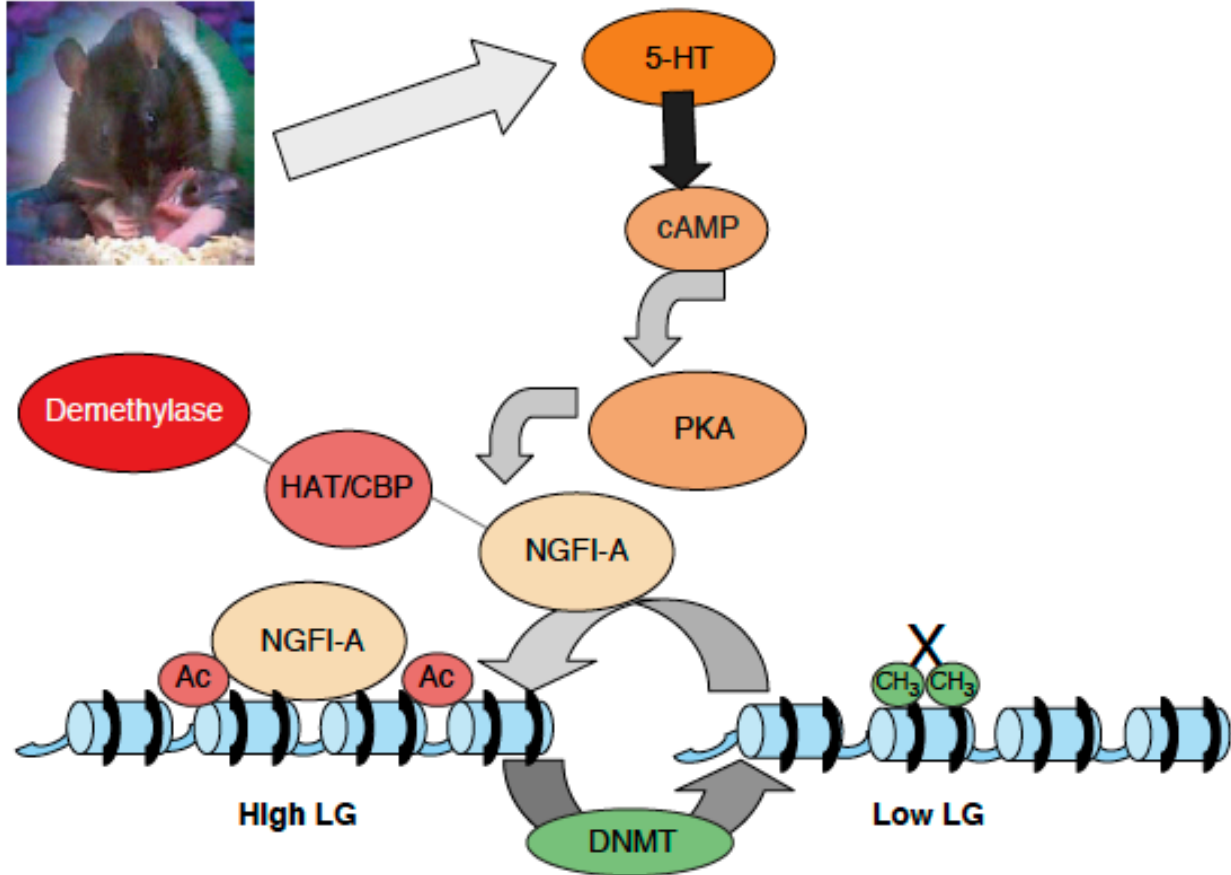
Restraint stress



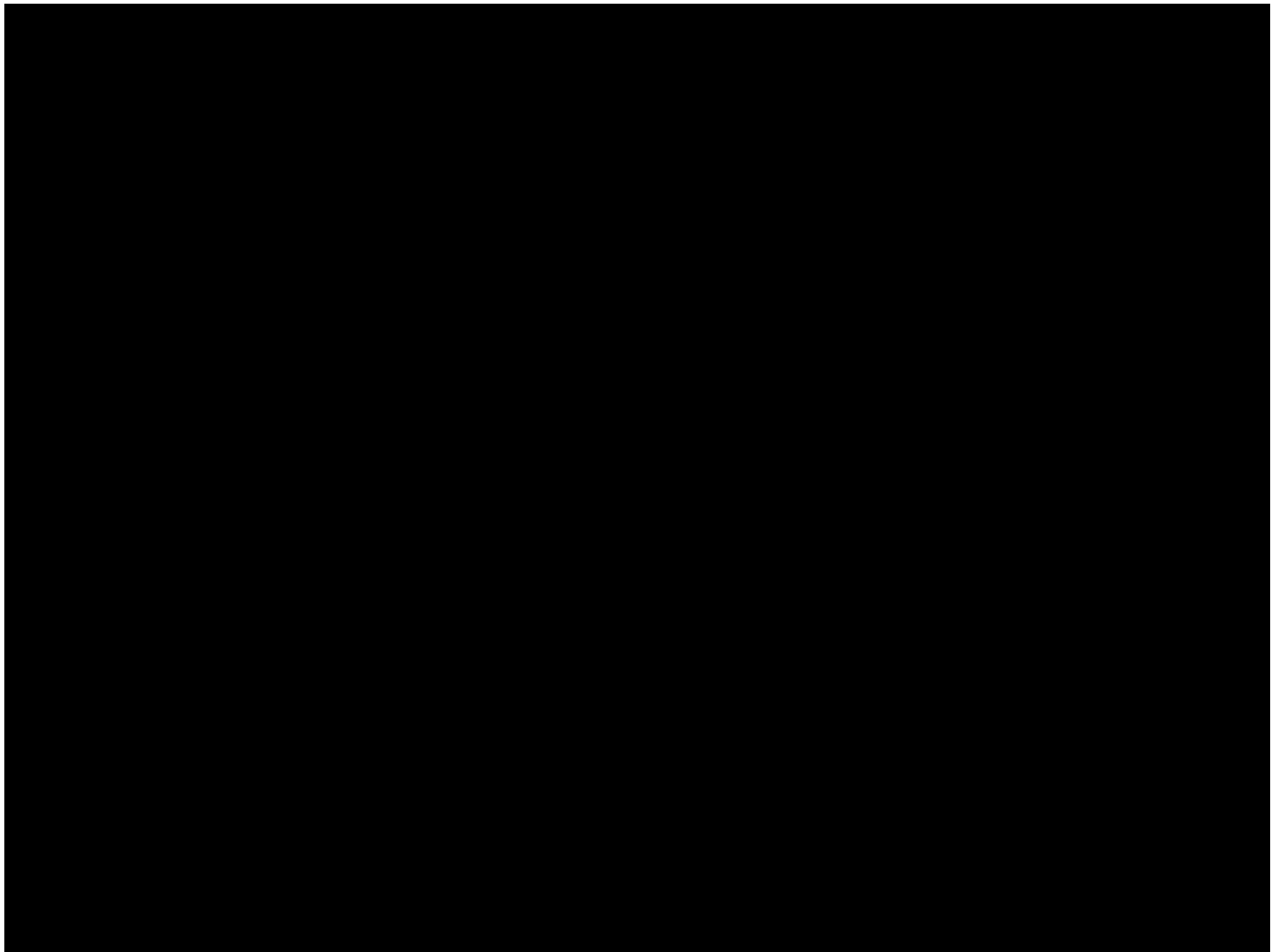
left undisturbed with their mothers, high/control (H/C) and low/control (L/C); cross-fostered back onto their own mothers, high/w (H/w) and low/w (L/w); cross-fostered to mothers of the same group, high-high (H-H) and low-low (L-L); cross-fostered across groups, high-low (H-L) and low-high (L-H).

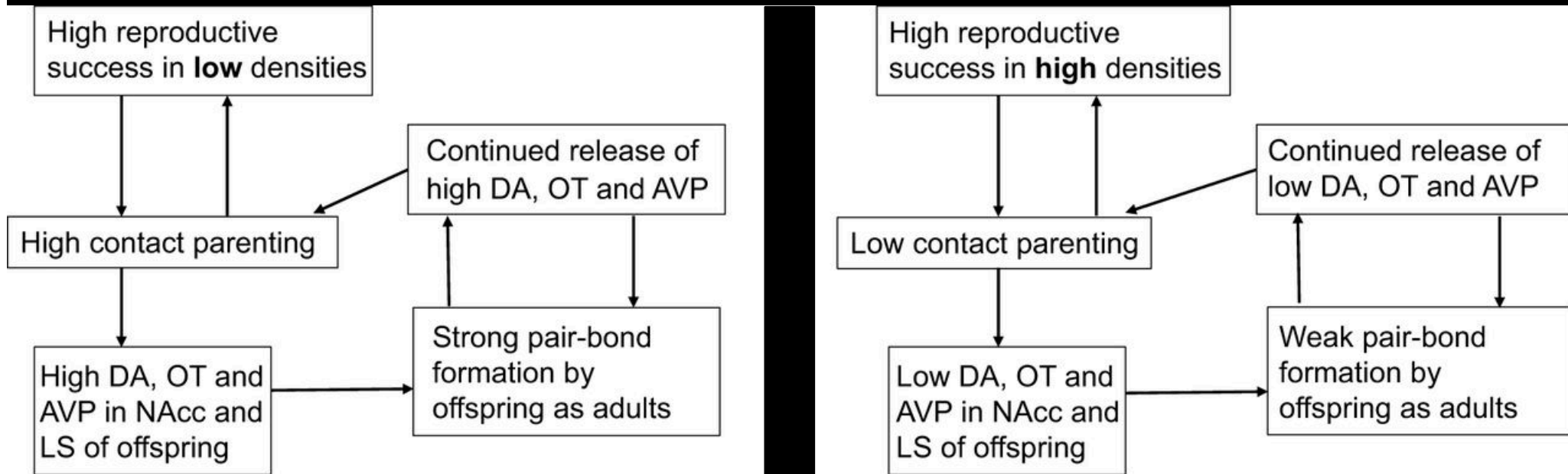




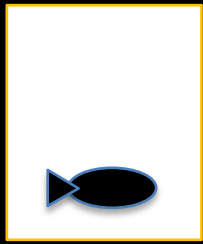


TRENDS in Neurosciences

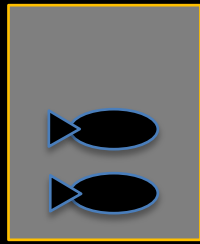




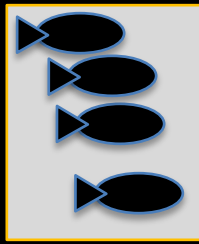
Potential pathways for intergenerational transmission of social bonds.



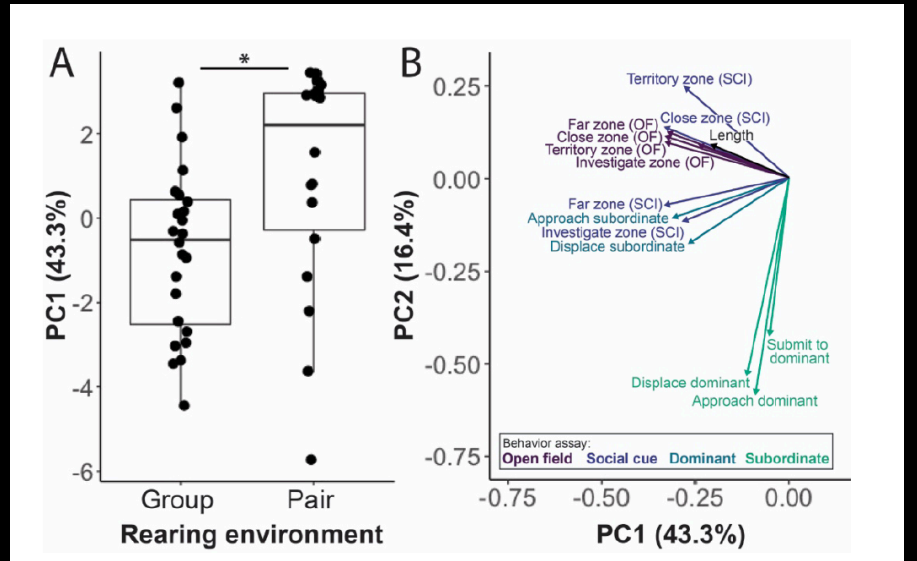
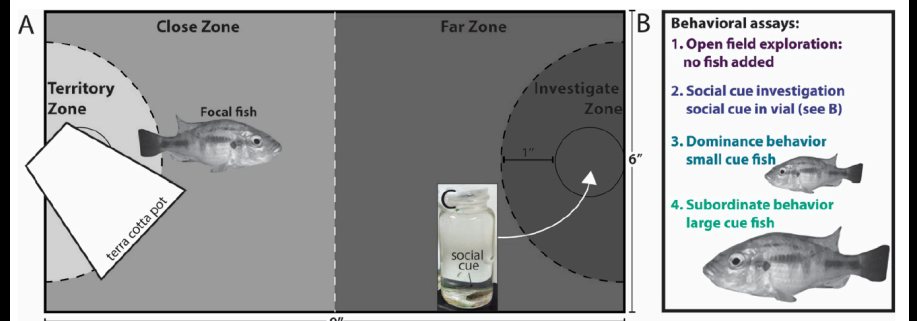
isolate

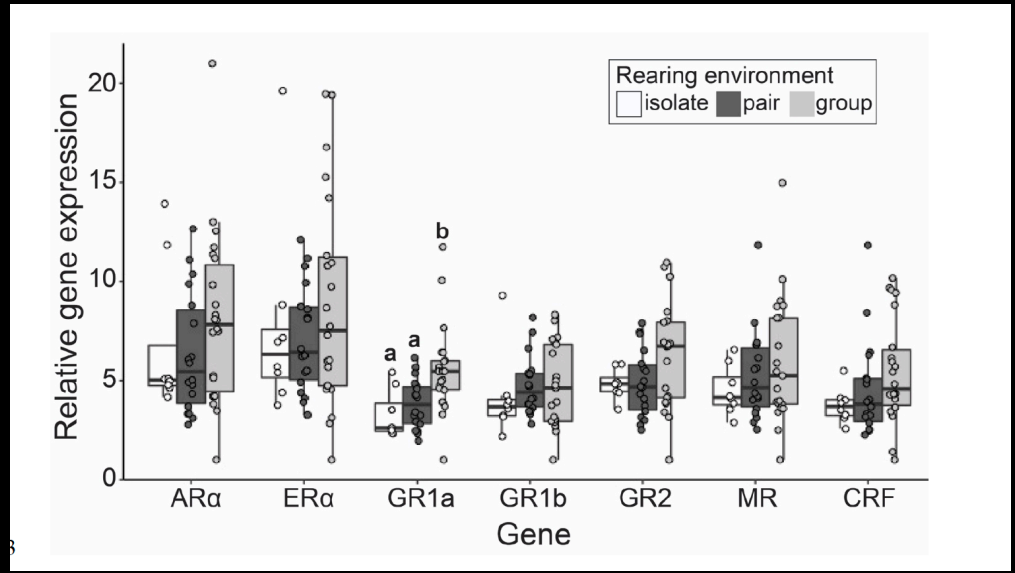
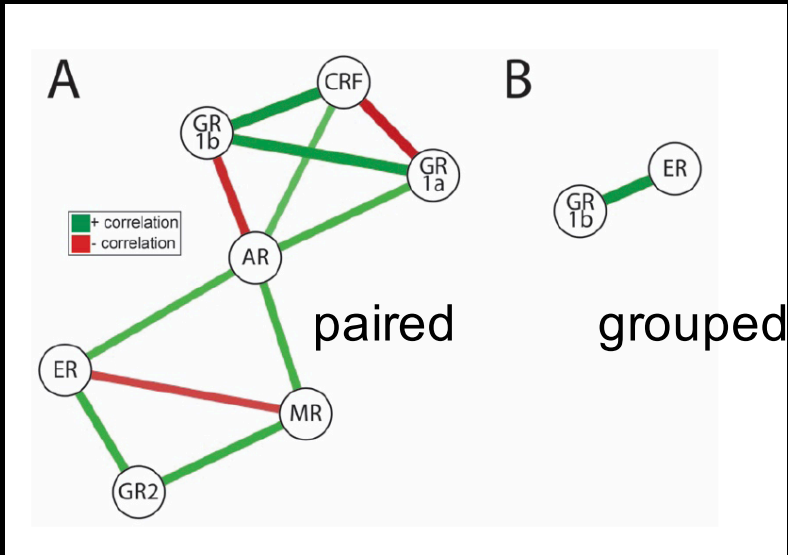
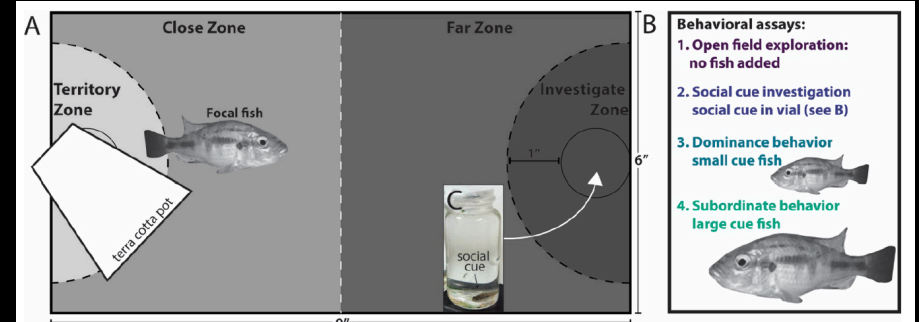
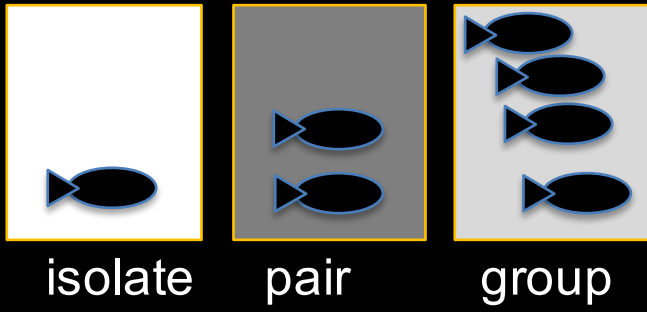


pair

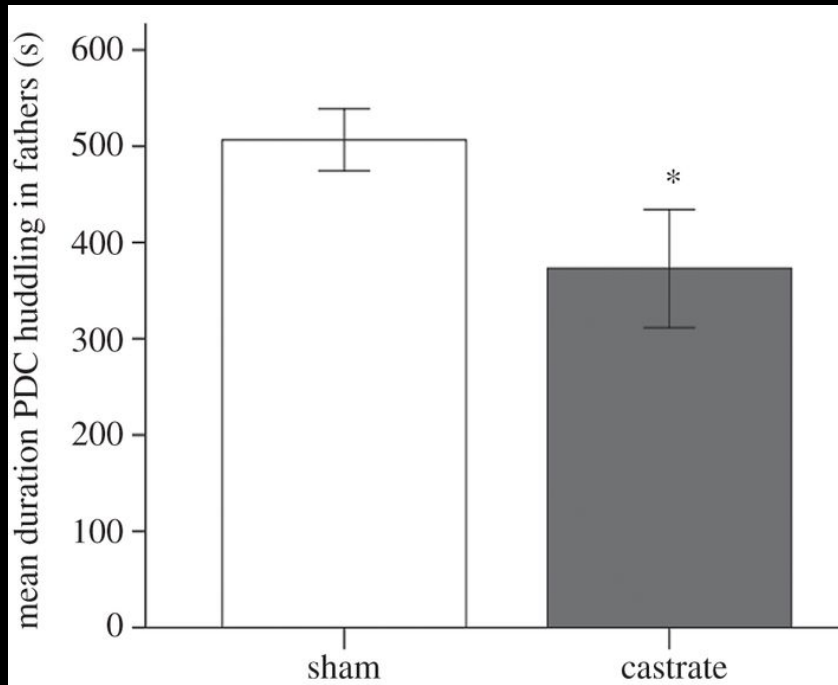


group



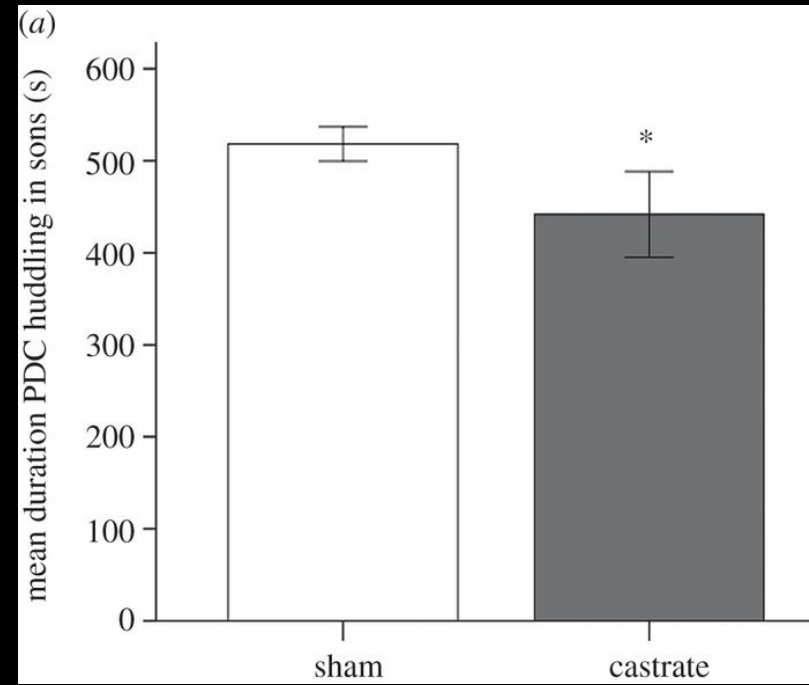


Paternal Behavior

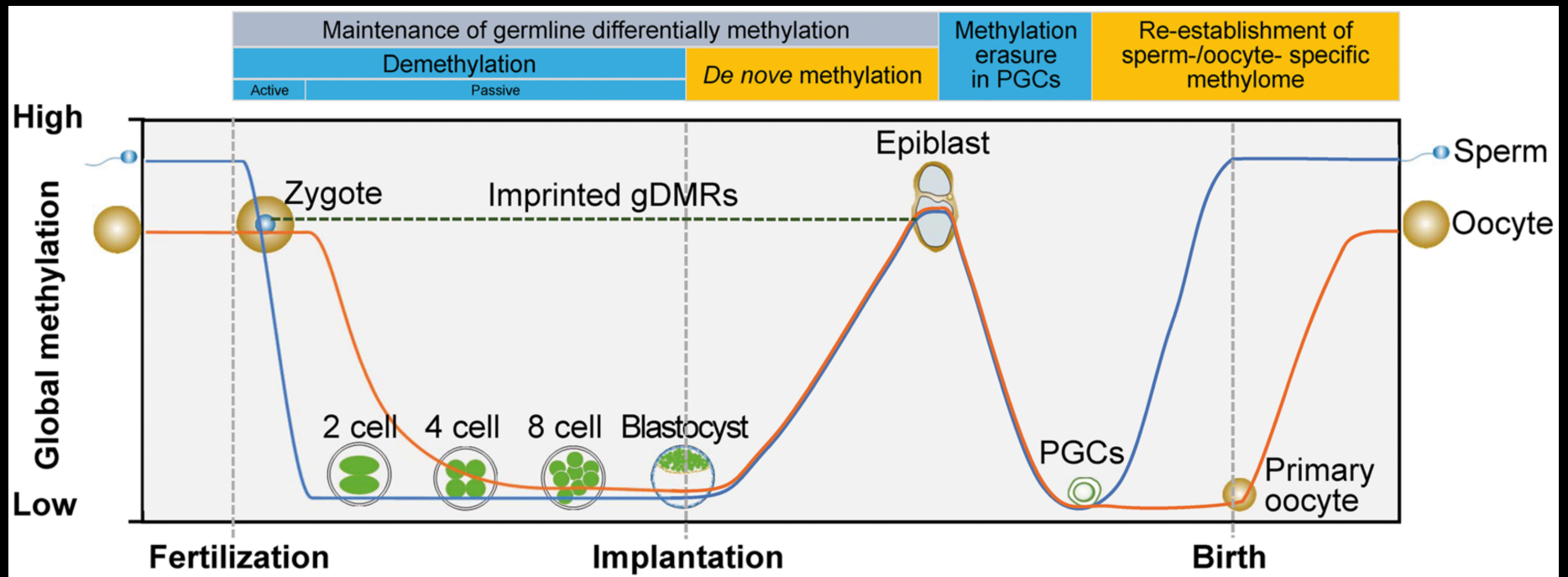


castration decreases paternal huddling

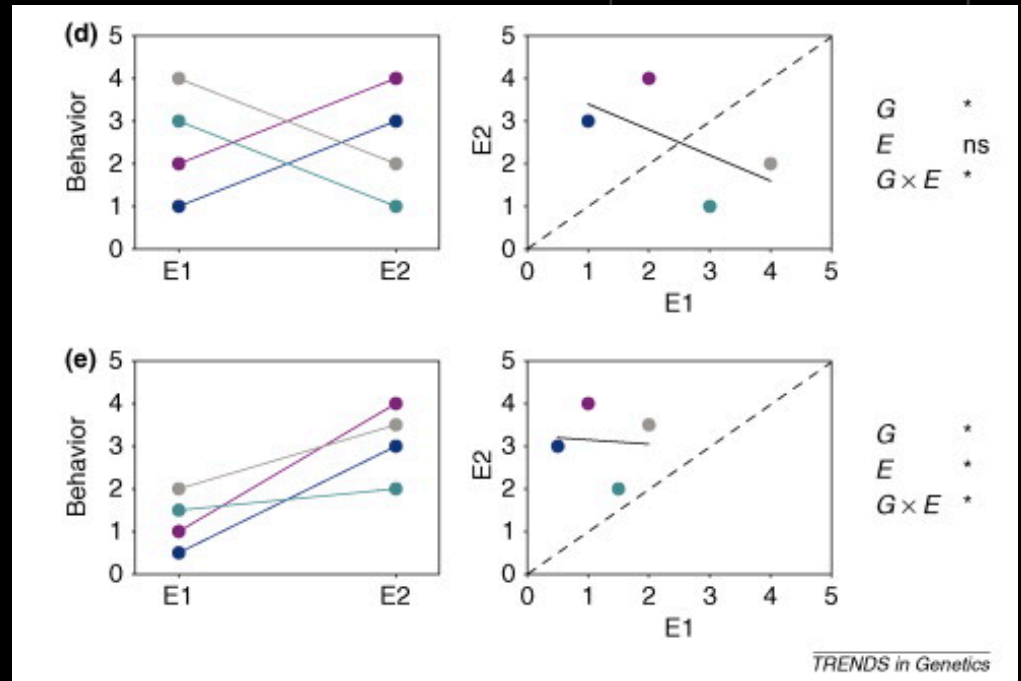
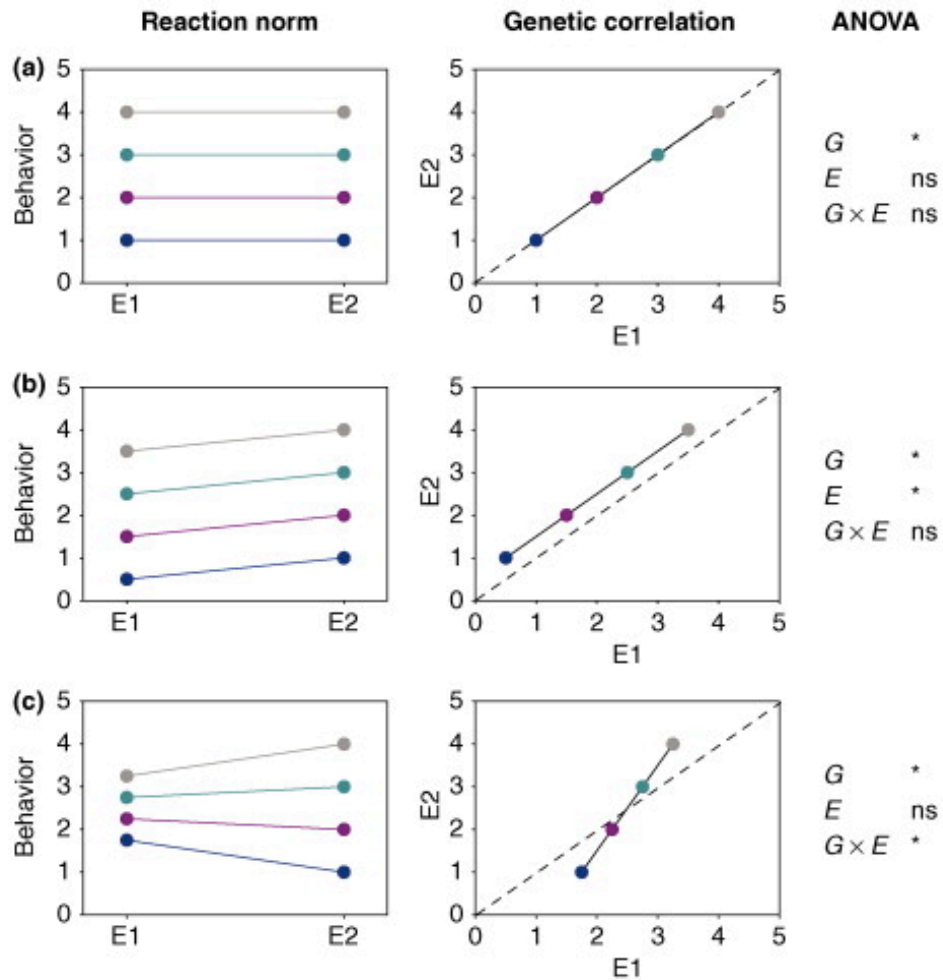
Adult Offspring paternal behavior



offspring from nests with castrated males show less huddling when they sire pups



From: DNA methylation dynamics: identification and functional annotation
 Brief Funct Genomics. 2016;15(6):470-484.

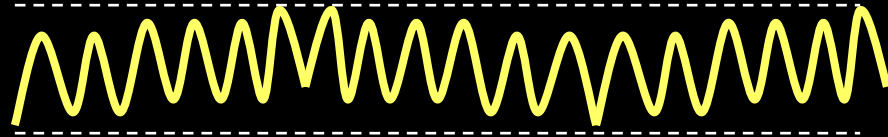


$$V_p = V_g + V_e + V_g * V_e$$

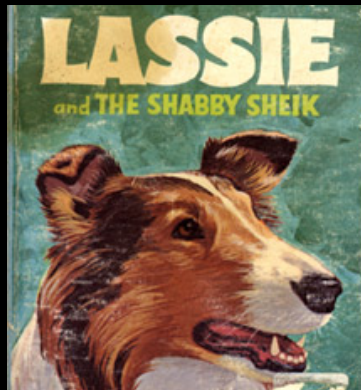
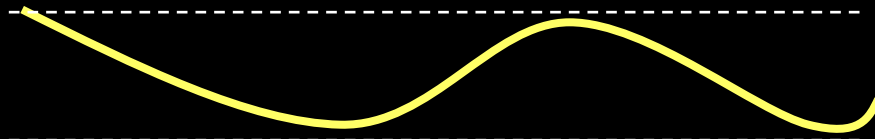
Shared Mechanisms ?



- Rapid Fluctuation

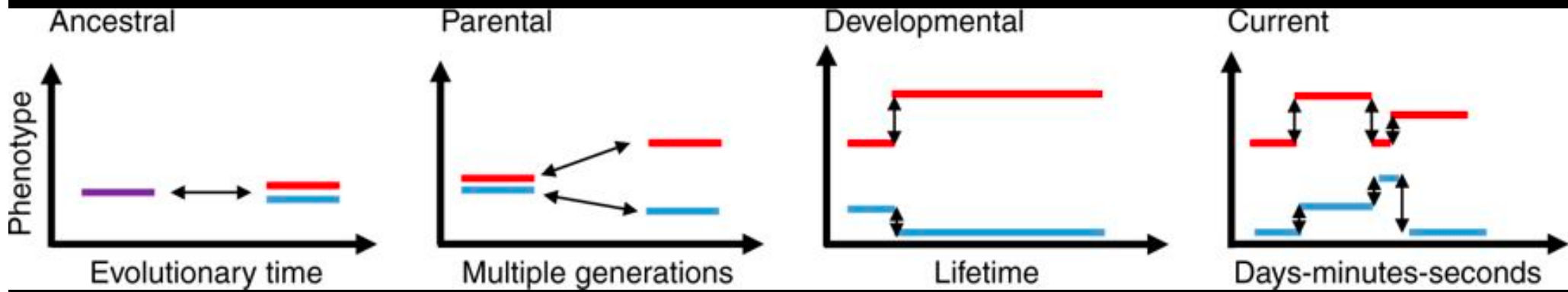


- Plasticity

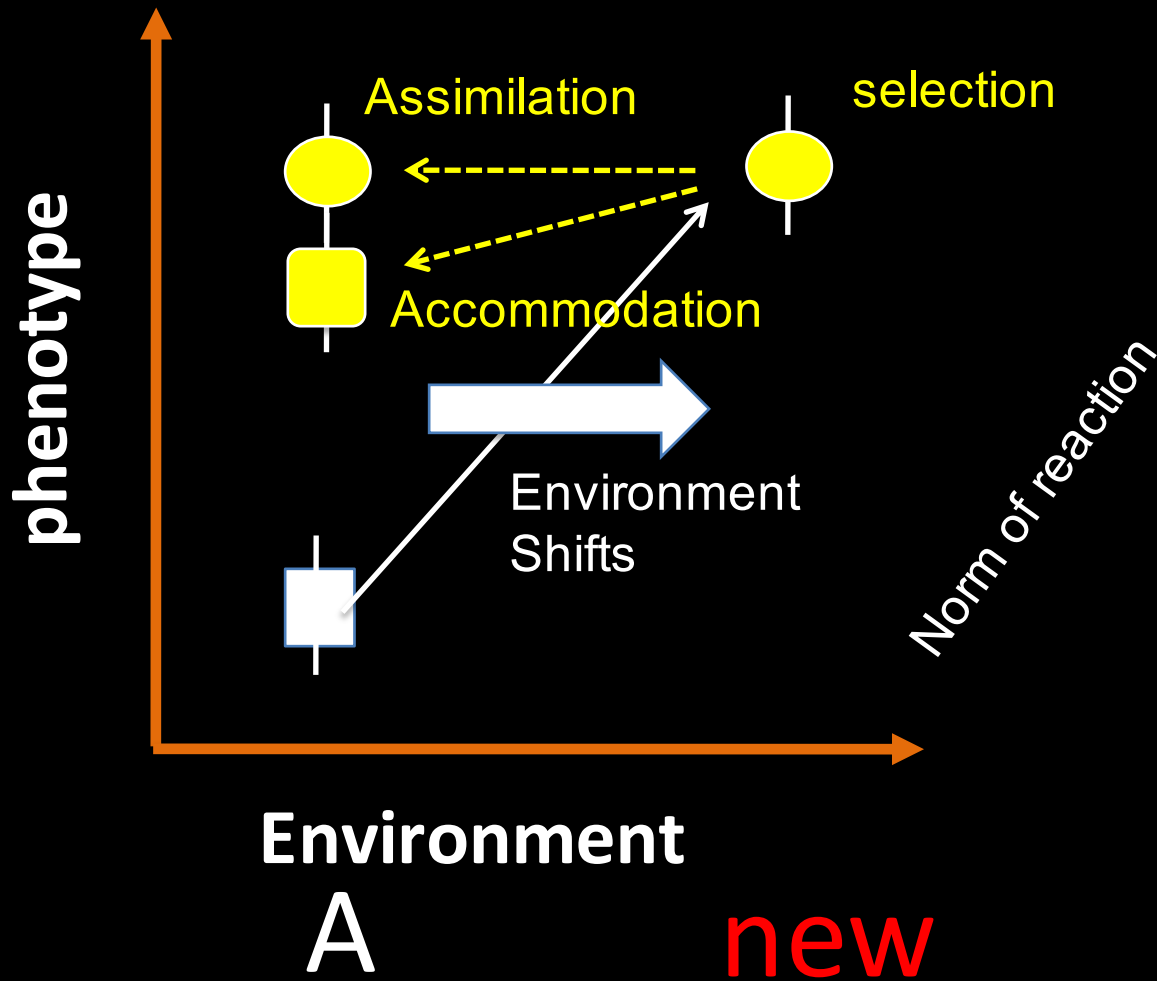


- Evolutionary Change





Genetic Assimilation



Spalding



Baldwin



Waddington



Schmalhausen



Pigglucci



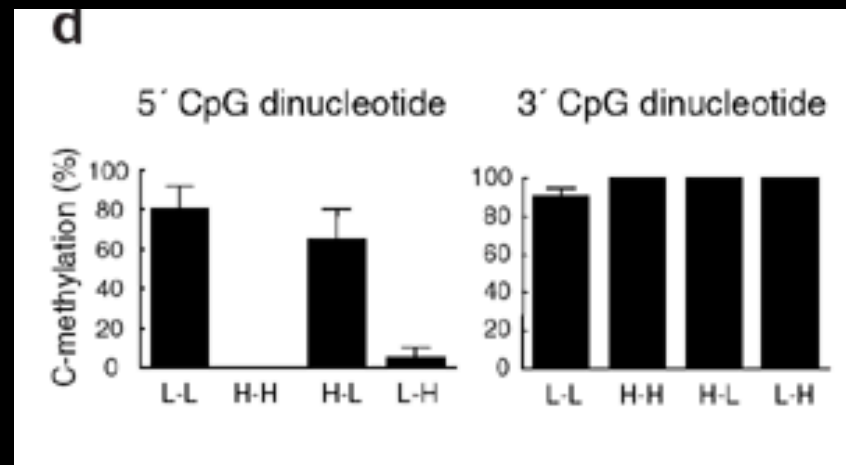
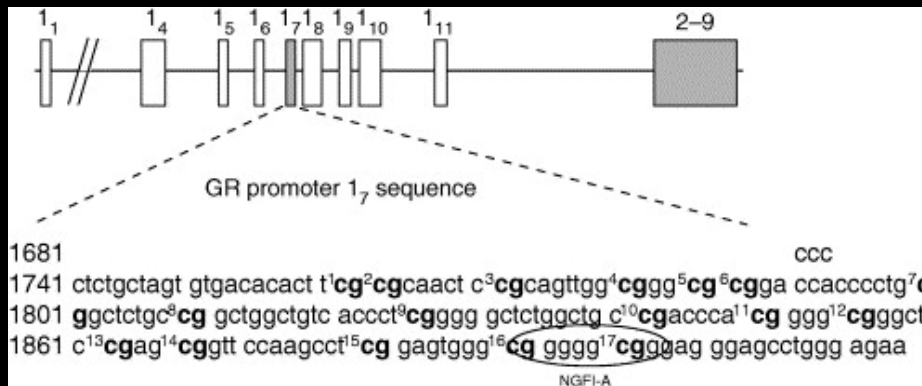
West-Eberhard

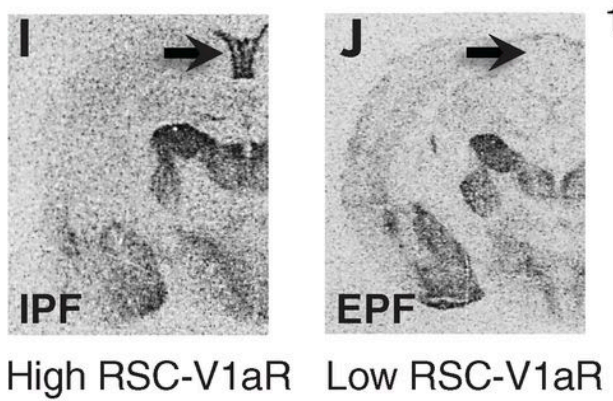
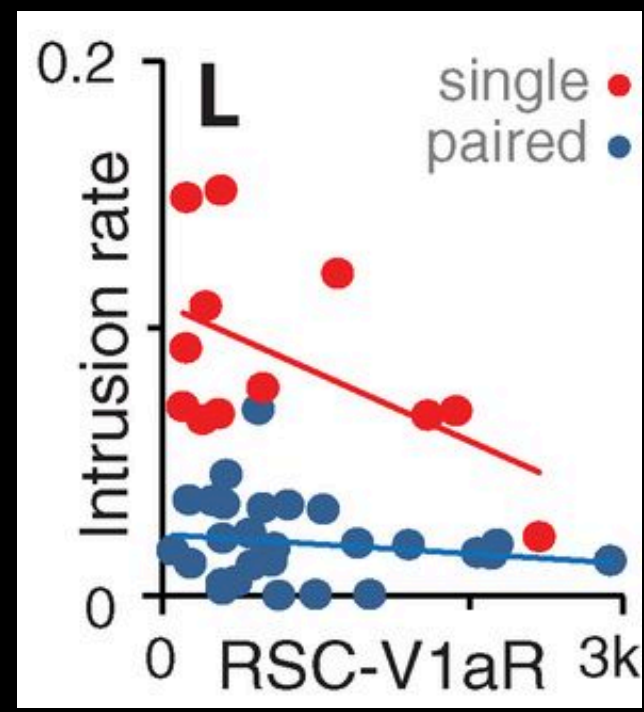
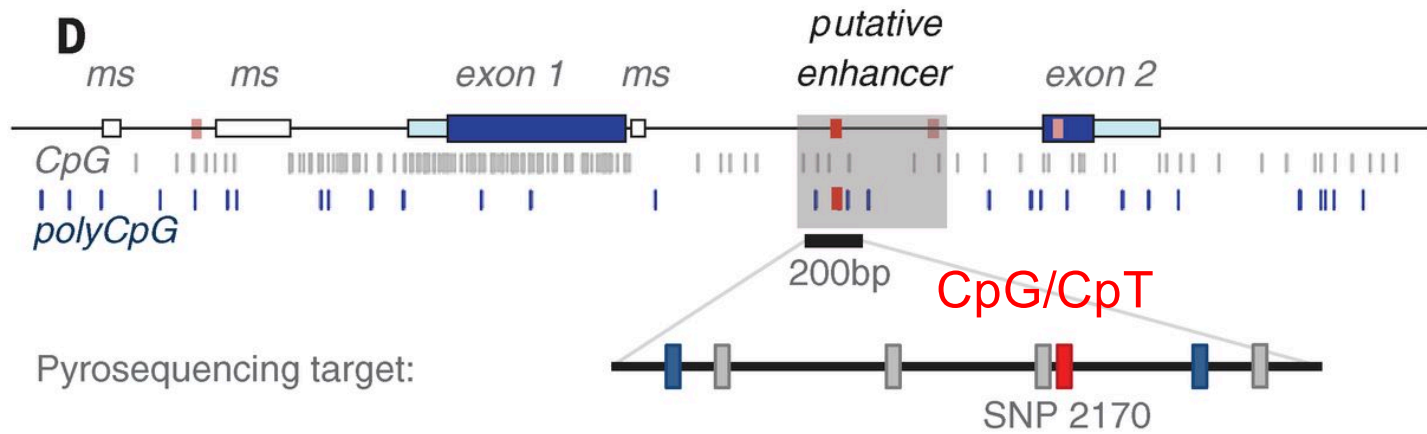
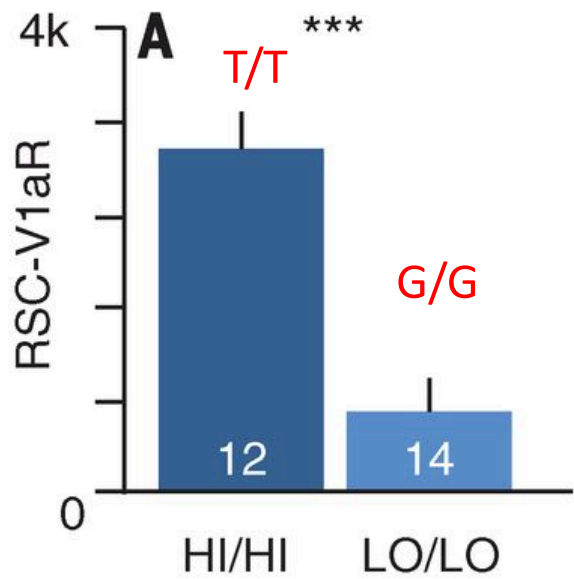


DEVELOPMENTAL PLASTICITY AND EVOLUTION

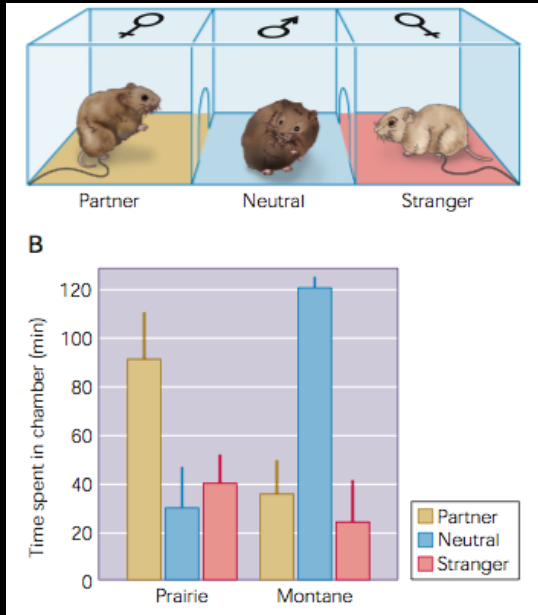


MARY JANE WEST-EBERHARD





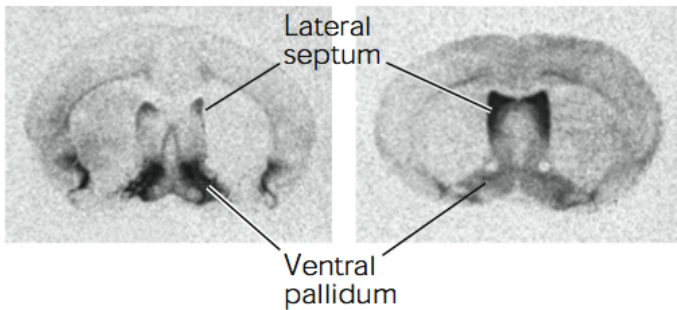
Between Species



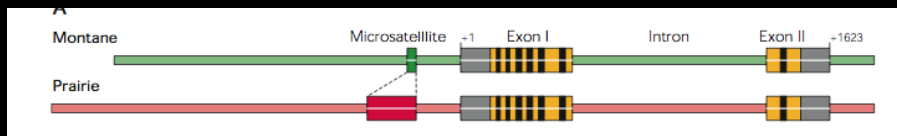
Monogamous

Promiscuous

Vasopressin receptor (V1aR)



Shorter montane vole

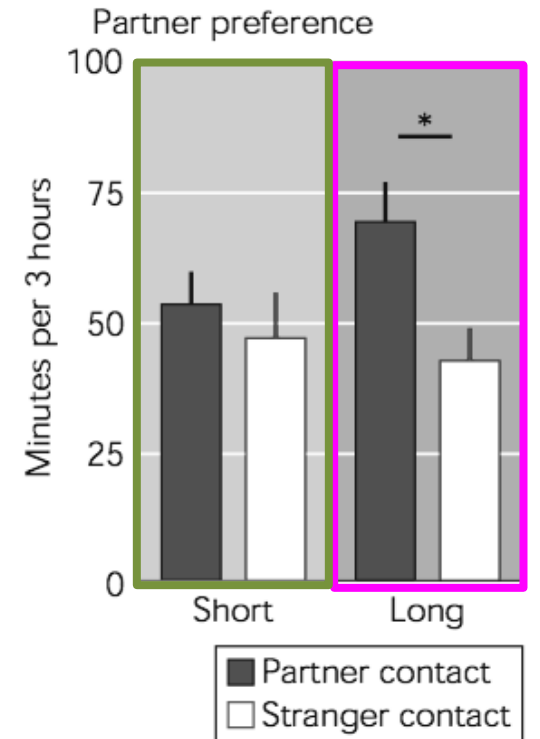
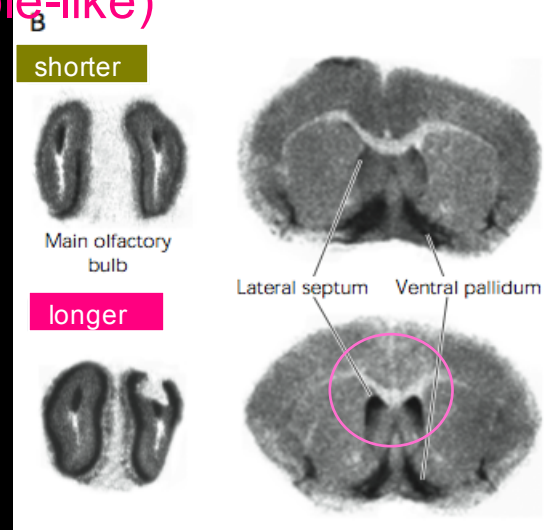
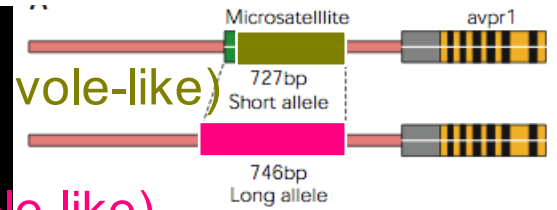


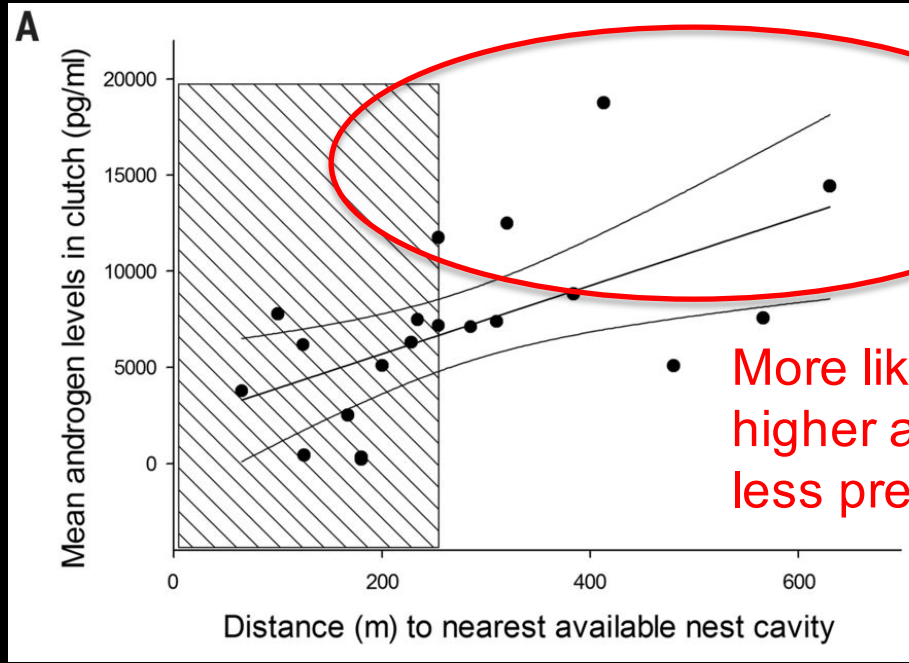
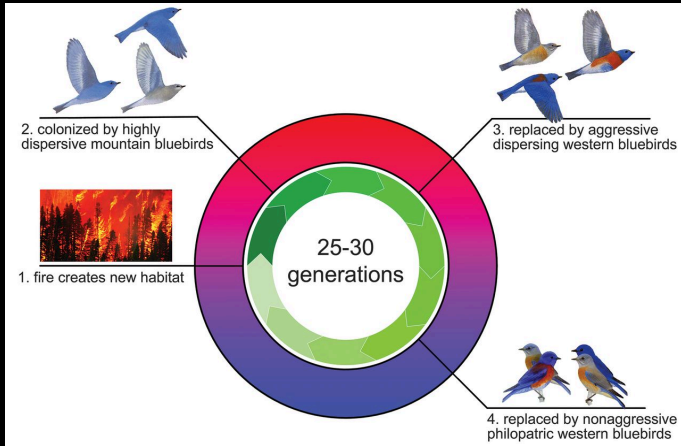
Longer prairie vole-like

Shorter (montane vole-like)

Longer (prairie vole-like)

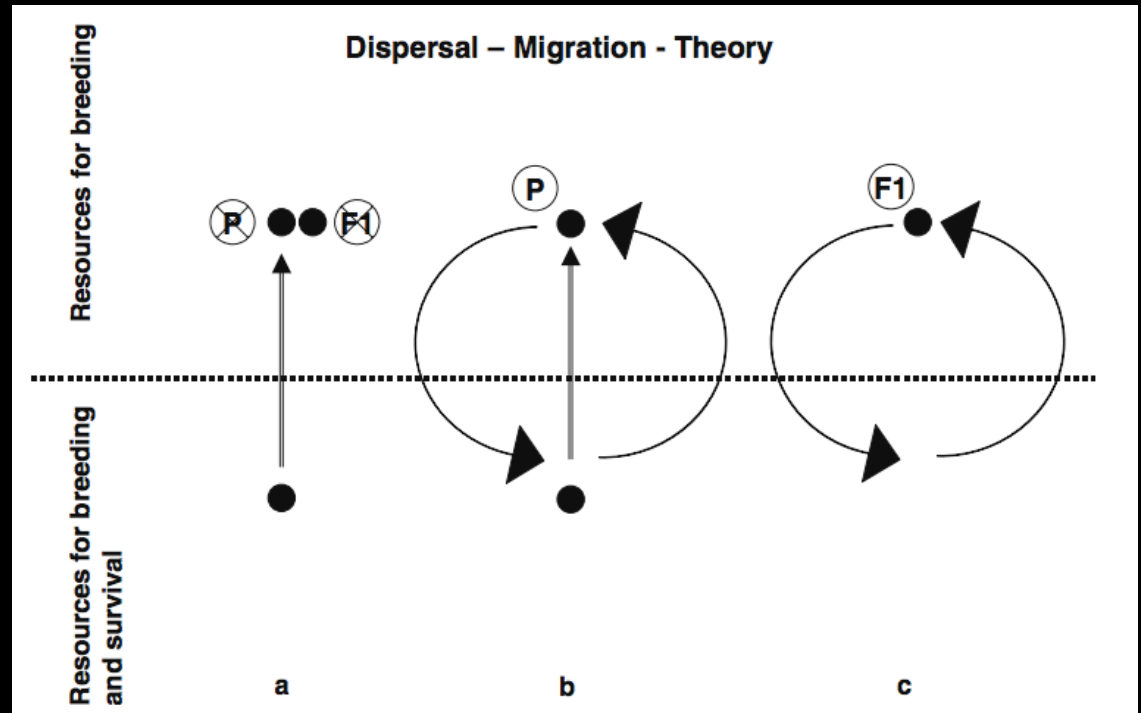
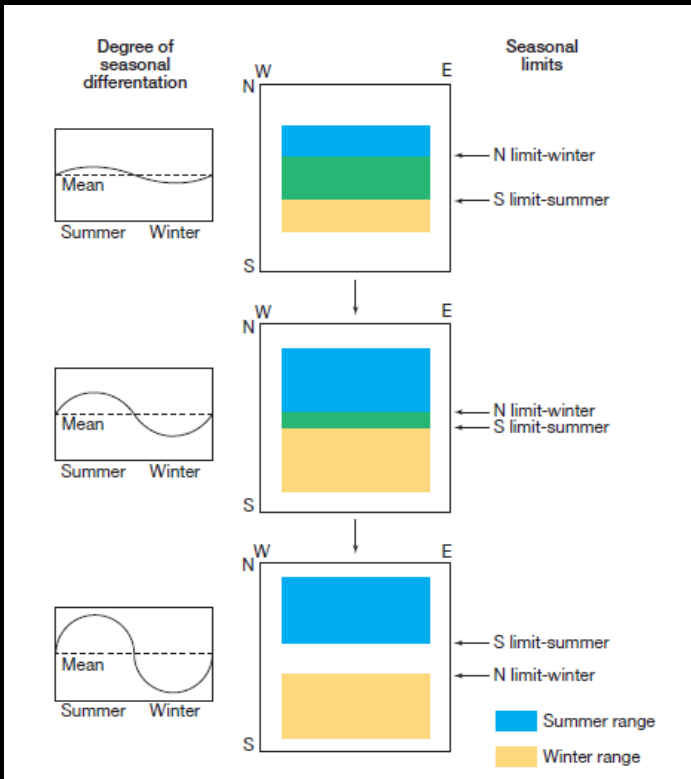
Within Species



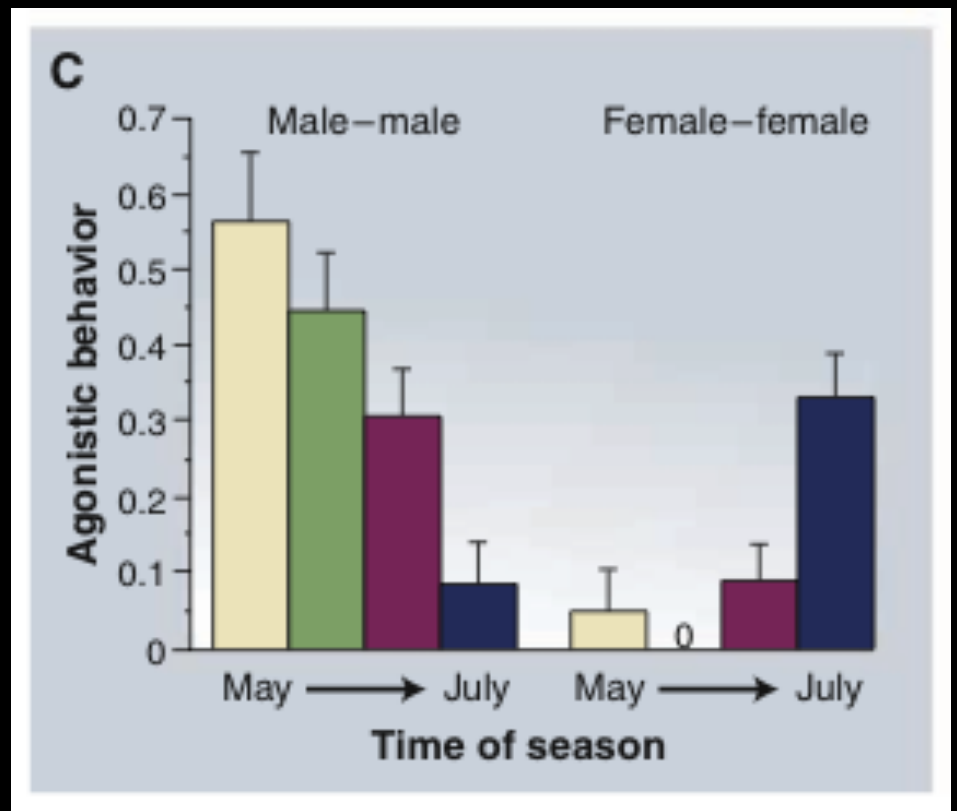


More likely to disperse
 higher aggression
 less preferred as mates

How did Migration Evolve?



In a simple model, George Cox (1968) showed how an increase in seasonal variation within a species habitat can lead from partial to full migration

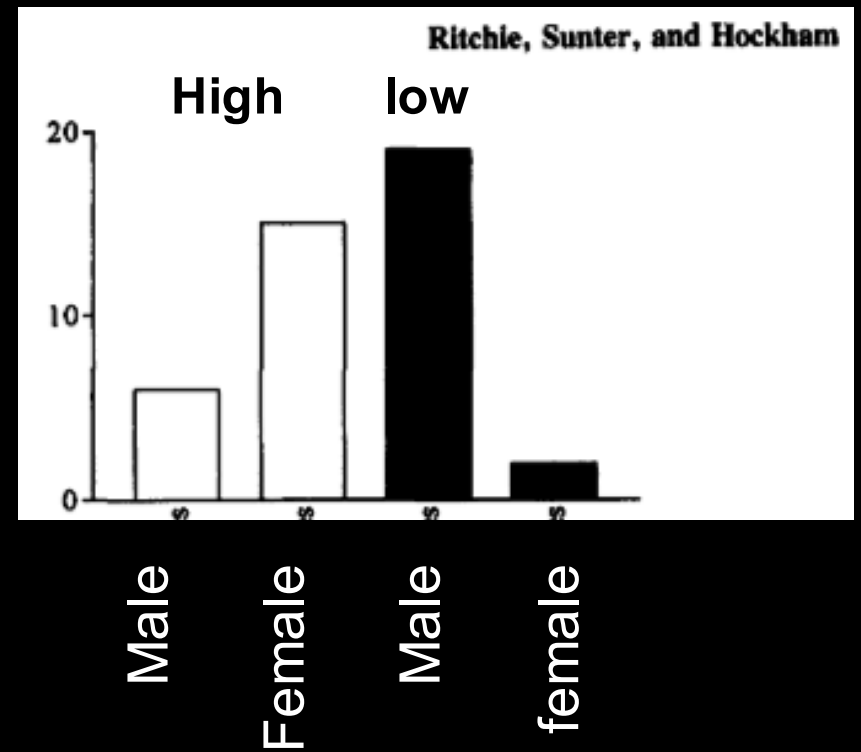




Ephippiger ephippiger

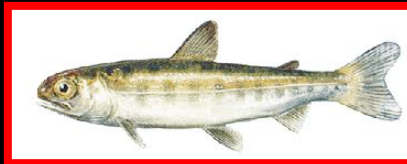
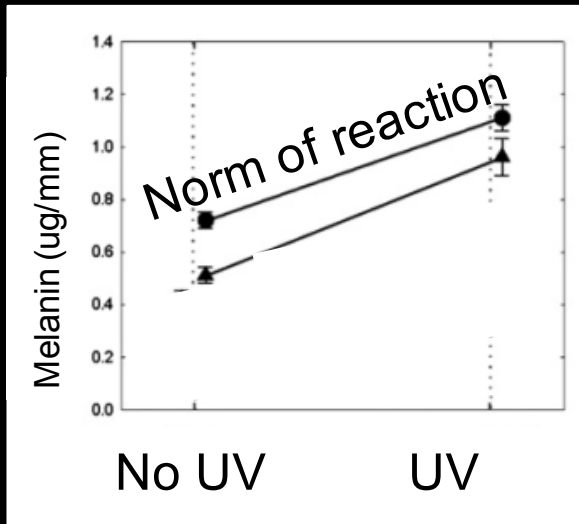


Season



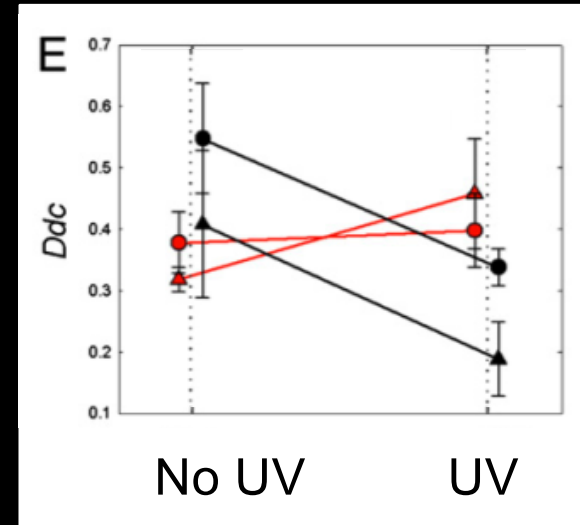
Total # of rejections

Assimilation of Daphnia Pigmentation Response



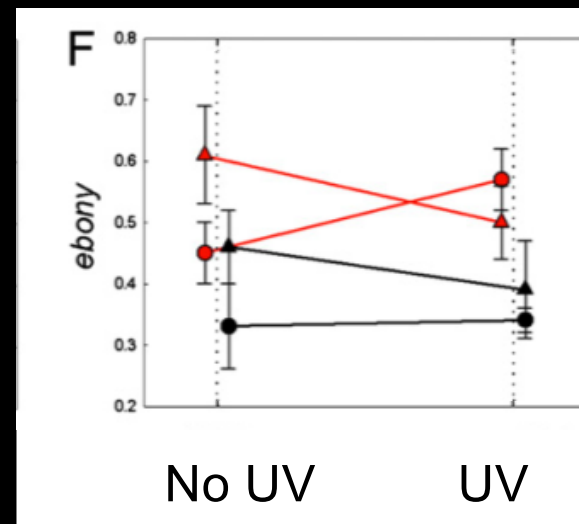
Fishless Lake 1 ▲
Lake 2 ●

Dopa-decarboxylase



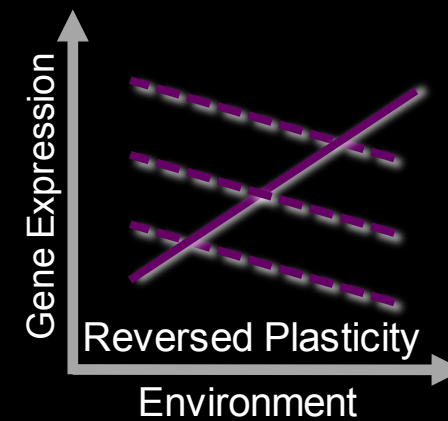
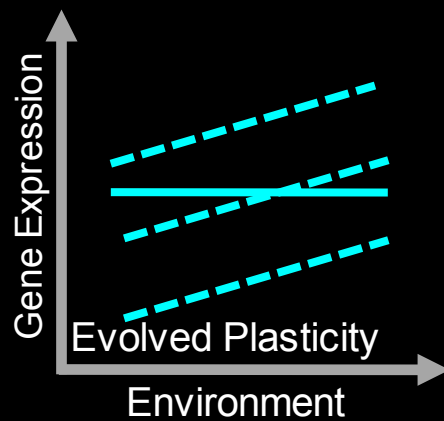
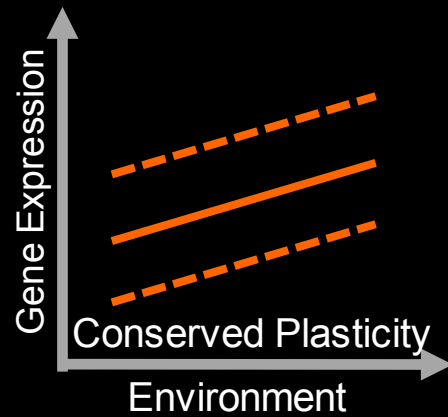
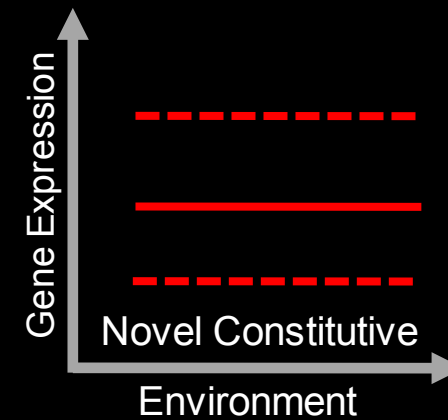
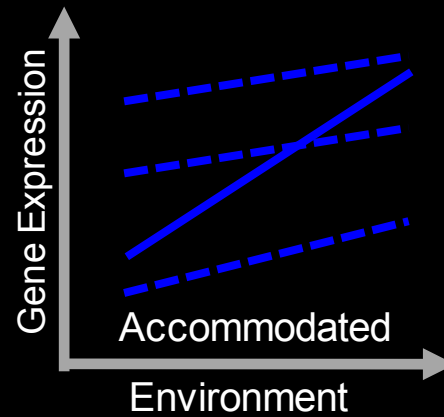
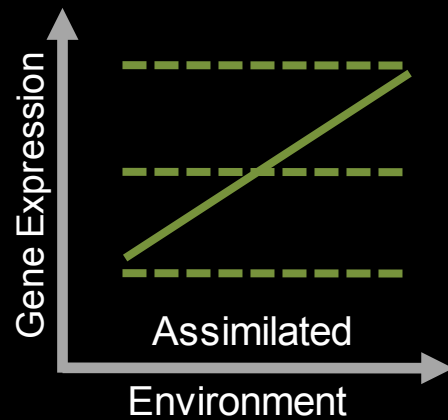
Genetic Assimilation of gene expression plasticity

ebony (melanin pathway)



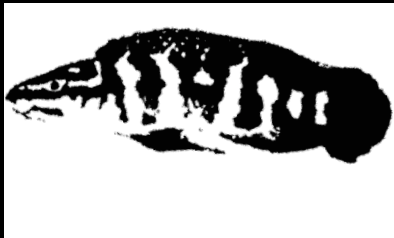
Novel Constitutive gene expression

Evolved Patterns of Gene Expression Plasticity



Sex-biased Behaviors

Conventional



J. transcriptus



Reversed



J. marlieri