



150th 


동물과 인간의 불안 : 공통점과 차이점

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Morris' work



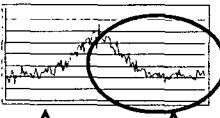
- 털
- 평평한 얼굴
- 조절 능력
- 수직적 자세
- 인간과 비슷한 특징



- 가늘고 더러운
- 깃털, 비늘
- 꾸물거리는
- 본래적 혐오반응
- 피하려는 강한 반응




Fear (avoidance) response



- 위험에 대한 민감성

1. 도주
 - 도망을 목표로
 - 의식차단, 기절
 - 소극적 반응
2. 집단의 높은 지위자로부터 위협
 - 집단의 지지 유지 희망
 - 복종적 의례
 - 집단 응집력 유지

• 낮은 민감도 • 높은 민감도
• 생존 가능성 ↓ • 생존 가능성 ↑



Darwin's work



- 두려움/분노
- 몸통 크기 확대
- 개의 공격 확률 낮춤
- 생존 가능성 증대

Darwin C (1872)



Social behaviors of chimpanzee

1. 진화

안지기, 달라붙기, 손 내밀기, 접근하기, 입 내밀기, 치장, 깨닫기, 털떡거리기, 울러타기

2. 놀이

입 크게 벌리기, 썩 쥐기, 들이대기, 람기, 울고 맞 풀기, 사지 당기기, 손으로 맞풀기

3. 공격

짓밟기, 당기기, 돌진, 물기, 으르렁, 좌우 걸기, 때리기, 발 구르기, 날카롭게 찌기

4. 복종

도망, 울초리기, 피하기, 비명, 이 드러내고 찌기, 슬쩍 피하기, 움짚 뒷걸음질, 주저 주저

5. 음반

조그리고 성하 좌우 흔들기, 오호 울음소리, 서서 흔들기



Rhesus macaques



Genetic Influences

- 20% rhesus monkeys
 - Unusually fearful & anxious-like behavioral & physiological reactions to novel & mildly stressful / social situation throughout development



Behavioral Inhibition

Reactions of an inhibited child to novelty include:

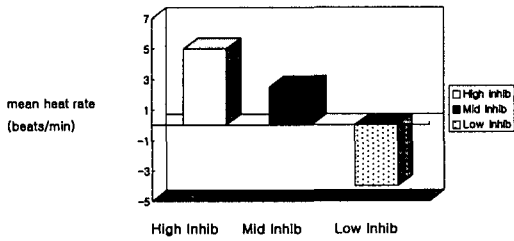
- Becomes quiet and watchful
- Ceases current activity
- Retreats from unfamiliarity
- Refuses to engage in interaction



- High reactivity/neuroticism can be bred in strains of mice (Gray, 1982)
- Multivariate genetic analyses – approx. 50% of variance attributed to genetic influences (Kendler et al.)
- Genetic influences on neuroticism = genetic influences on symptom reporting of anxiety and depression



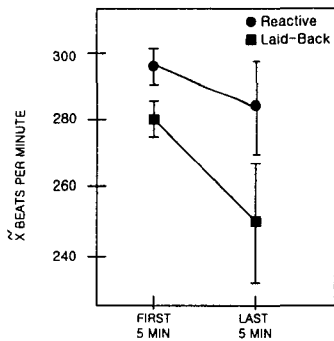
Change in Mean Heart Rate During Anxiety-Induction Task at Age 7



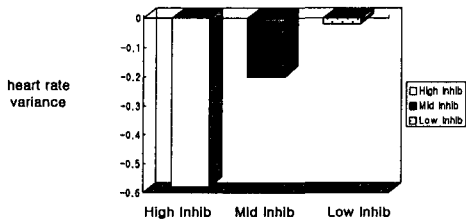
Schmidt, Fox, Schukin & Gold, 1999



HEARTRATE DURING PLAYROOM SESSION



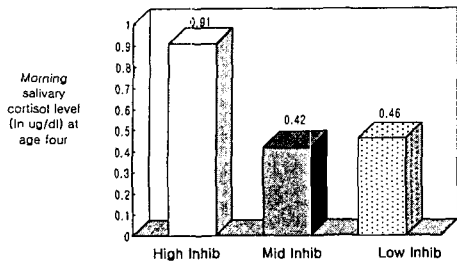
Change in Heart Rate Variability During Anxiety-Induction Task at Age Seven



Schmidt, Fox, Schukin & Gold, 1999



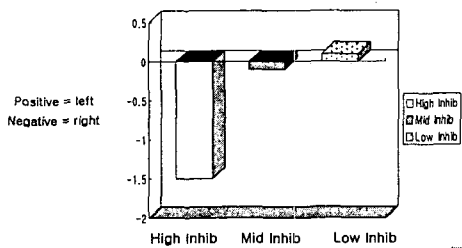
Morning Salivary Cortisol in Behaviorally Inhibited Preschoolers



Schmidt, Fox, Rubín, Sternberg, Gold, Smith & Schulkin, 1997



Frontal EEG Asymmetry (6-8Hz) In Behaviorally Inhibited Preschoolers



Schmidt, Fox, Rubín, Sternberg, Gold, Smith & Schulkin, 1998

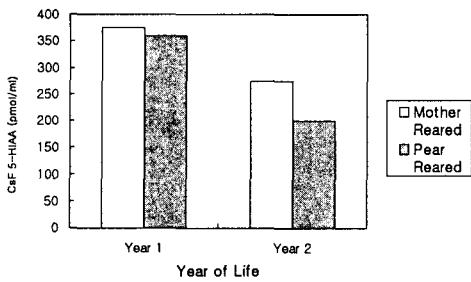


Environmental Influences

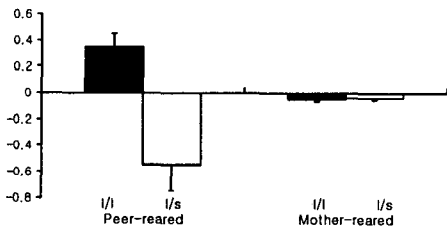
- Significant life adversities and stress sensitization (Breslau, 1999)
- Influence upon HPA axis and stress related hormones (McIntosh et al., 1999; Rosenblum & Papp, 1984)
- Reciprocal model: stressful events and stress reactivity



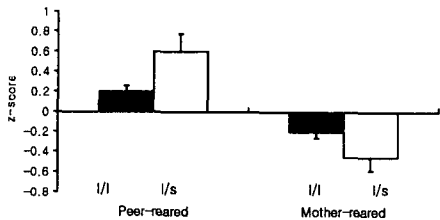
Rearing Effects on CSF 5-HIAA Levels



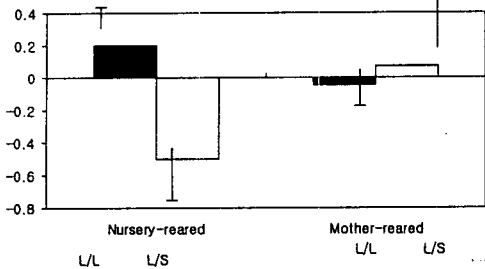
Effect of Rh5-HTTLPR Gene and Early Rearing Environment on CSF 5-HIAA

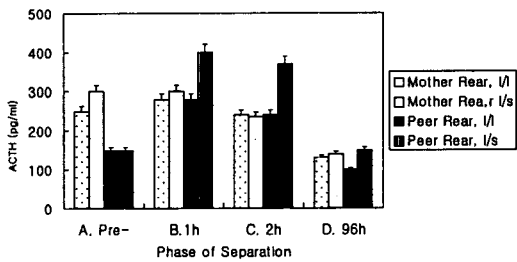


Effect of Rh5-HTTLPR Gene and Early Rearing Environment on Alcohol Consumption



Orientation CI ster by rearing and genotype

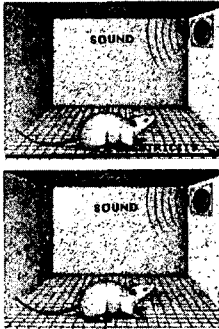




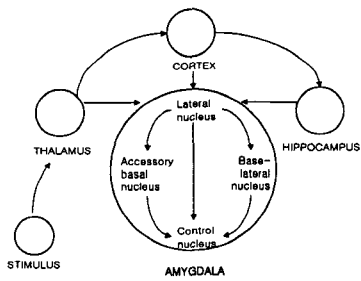
Barr et al (2004)

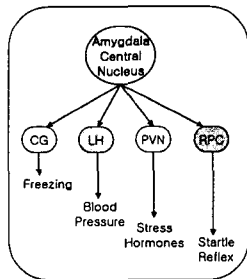
> *Temperamental behavioral inhibition is associated with a neural system underlying conditioned and unconditioned fear*

Fear conditioning model



Structure of the Amygdala

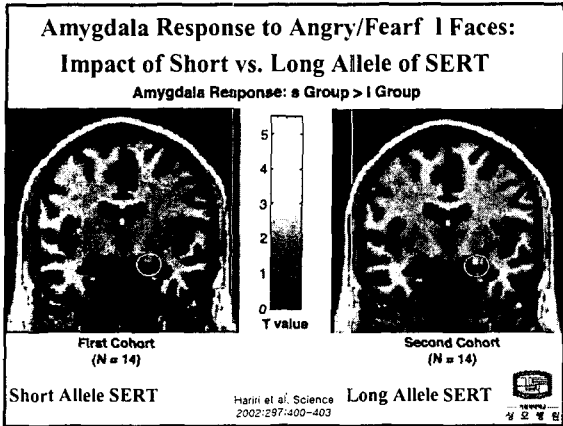


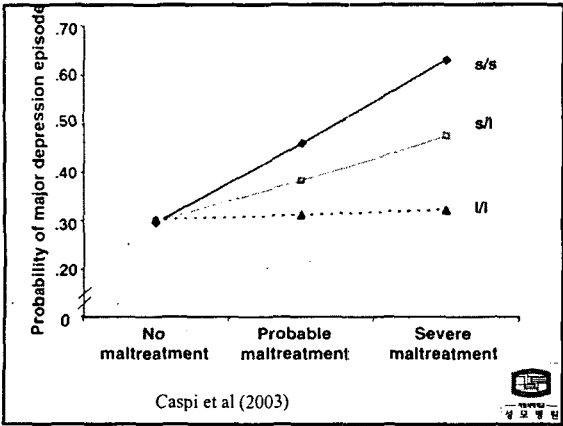


Different Outputs of the Amygdala Control Different Conditioned Fear Responses.

LeDoux, 1996



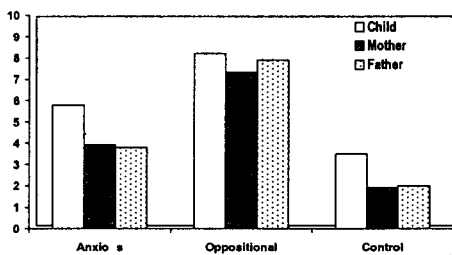




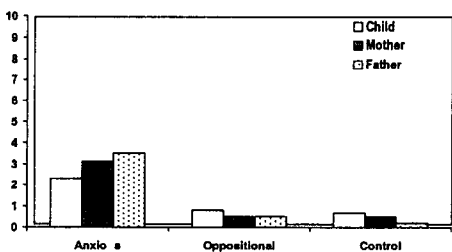
Parenting Influences

- Intuitive parenting (Papoušek, 2001); synchronicity -- relevance to predictability and controllability
- Over-intrusive and lack of warmth
- Modeling of anxious behaviors
- Expectations of negative outcomes

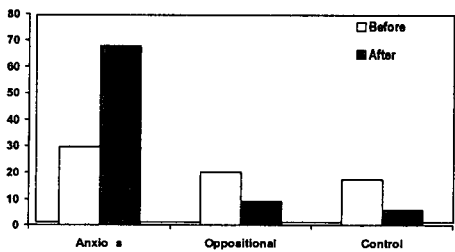
Mean number of threatening interpretations to 12 ambiguous situations



Mean number of avoidant solutions to 12 ambiguous situations



Percentage of children choosing avoidant solutions after family discussion



S mmary

- 기질적 행동 억제(*behavioral inhibition*)은 조건 및 비조건 공포의 기저 기전의 신경계와 관련이 있다.
- 환경적 영향이 행동 억제에 영향을 미친다.
- 인지과정이 행동 억제의 표현에 영향을 줄 수 있다.
- 행동 억제는 정신병리의 위험 인자이다.



Nesse (1990)

두려움의 유형	위험 및 상황
공황	악탈자에 의한 영장의 공격
광장공포	공격당할 가능성이 있는 환경
일반적 불안	안전하지 않은 환경
갈등적 불안	사회적으로 받아들여지지 않는 행동
사회적 불안	지위나 집단 구성원 자격 위협
작은 동물 불안	위험한 작은 동물들
건강염려증	질병
분리불안	보호해주는 부모
낯선 사람	이상한 사람으로부터의 해
개인적 부적절감	동료나 집단의 거부
강박적 생각	전염병
강박적 진수진	음식이나 기타 자원의 부족