

Maternal History of Early Adversity: Transgenerational Risk onto Offspring Temperament

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INTRODUCTION

Epidemiological data suggest that maternal childhood adversity may affect emotional development in the next generation. Such effects are likely to occur interactively with offspring factors, such as genotype. The serotonin transporter polymorphism (5-HTTLPR) is an apparent moderator of parental influences on child temperament, especially negative emotionality/behavioural regulation.

GENOTYPE

- 5-HTTLPR has 3 functional alleles: Long A (L_A), Long G (L_G), and Short (S)
- Carriers of the S allele are known to be more permeable to their environments, either detrimental or enriched, than homozygous for the long allele (Caspi et al., 2003)

AIM

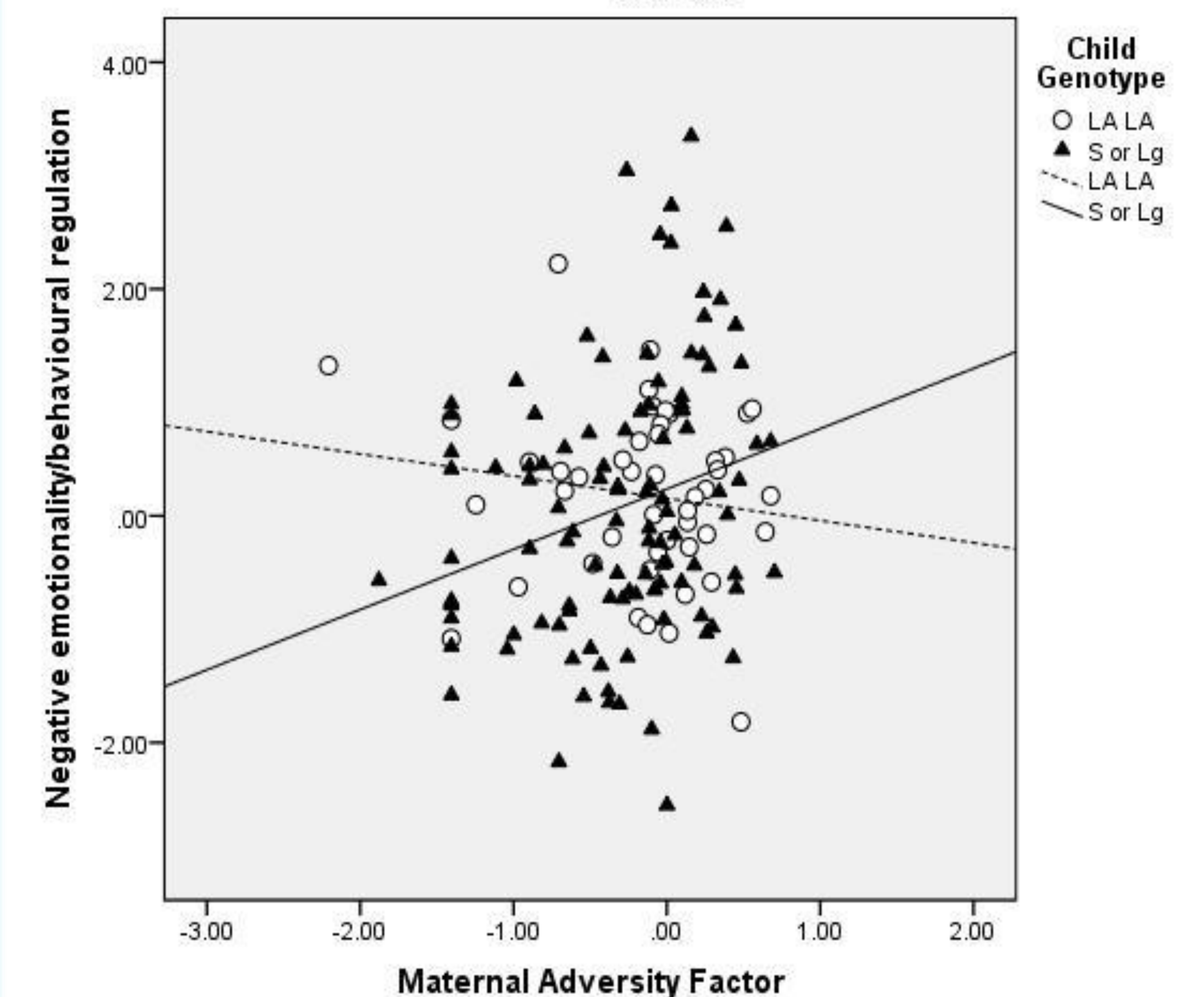
To examine the interactive effects of maternal early childhood experience and child 5-HTTLPR genotype on child negative emotionality/behavioural regulation

METHODS

- Maternal Adversity, Vulnerability, and Neurodevelopment (MAVAN) longitudinal project
- 186 mothers, aged 18+, from Montreal and Hamilton (Canada) and their children aged 36 months
- Maternal history of childhood adversity: Principal component analysis of Childhood Trauma Questionnaire (Berstein et al., 2003) and Parental Bonding Inventory (Parker, 1991)
- Child genotype: $L_A L_A$ (n = 58) vs. S or L_G (n = 128)
- Negative emotionality/behavioural regulation: Principal component analysis of Early Childhood Behaviour Questionnaire (Putnam et al., 2006)

RESULTS

Interaction effect of maternal history of early adversity and offspring 5-HTTLPR genotype on offspring negative emotionality/behavioural regulation at 36 months



Significant interaction between maternal adversity and 5-HTTLPR genotype on children negative emotionality/behavioural regulation at 36 months ($\beta = 1.03$, $t = 2.71$ $p < 0.01$). Post-hoc probing of moderation effects revealed a cross-over interaction where **children with the less functional 5-HTTLPR alleles are significantly higher in negative emotionality/behavioural regulation scores than those with the $L_A L_A$ genotype at high levels of maternal adversity, but significantly lower in negative emotionality/behavioural regulation scores than at low levels of maternal adversity.**

CONCLUSION These findings support our transgenerational hypothesis that maternal childhood adversity, in interaction with offspring genotype, associates with offspring temperament. These findings also support the contention of Belsky and Pluess (2009) that the 5-HTTLPR genotype might determine sensitivity to context.

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