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Cognitive deficits and enhancements in youth from adverse conditions

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Developmental Science



REGISTERED REPORT |  Open Access |  

Cognitive deficits and enhancements in youth from adverse conditions: An integrative assessment using Drift Diffusion Modeling in the ABCD study

Stefan Vermeent  Ethan S. Young, Meriah L. DeJoseph, Anna-Lena Schubert, Willem E. Frankenhuis

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Cognitive deficits

Early deprivation alters structural brain development from middle childhood to adolescence

MARGARET A. SHERIDAN , CORA E. MUKERJI , MARK WADE, KATHRYN L. HUMPHREYS , KATHRYN GARRISI , SRISHTI GOEL , KINJAL PATEL ,
NATHAN A. FOX, CHARLES H. ZEANA, [...], AND KATIE A. MCLAUGHLIN  [+1 authors](#) [Authors Info & Affiliations](#)

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Journal of the American Academy of Child & Adolescent Psychiatry

Volume 60, Issue 2, February 2021, Pages 296-306



New research

Physical Discipline, Deprivation, and Differential Risk of Developmental Delay Across 17 Countries

Carmel Salhi ScD^a  , Elizabeth Beatriz PhD^b, Ryan McBain ScD^c, Dana McCoy PhD^d, Margaret Sheridan PhD^e, Günther Fink PhD^f

Developmental Science

Neurocognitive correlates of socioeconomic status in kindergarten children

Kimberly G. Noble , M. Frank Norman, Martha J. Farah

Cognitive adaptations

Developmental Science

SHORT REPORT

Adaptation in the face of adversity: Decrements and enhancements in children's cognitive control behavior following early caregiving instability

Andrea Fields ✉, Paul A. Bloom, Michelle VanTieghem, Chelsea Harmon, Tricia Choy, Nicolas L. Camacho, Lisa Gibson, Rebecca Umbach, Charlotte Heleniak, Nim Tottenham

Journal of Personality and Social Psychology

Cognitive Adaptations to Stressful Environments: When Childhood Adversity Enhances Adult Executive Function

Chiraag Mittal, Vldas Griskevicius, Jeffrey A. Simpson, Sooyeon Sung, and Ethan S. Young
University of Minnesota

The Journal of Child Psychology and Psychiatry



Original Article | [Open Access](#) |

Working for the future: parentally deprived Nigerian Children have enhanced working memory ability

Tochukwu Nweze ✉, Mary Basil Nwoke, Juliet Ifeoma Nwufo, Richard Ikechukwu Aniekwu, Florian Lange

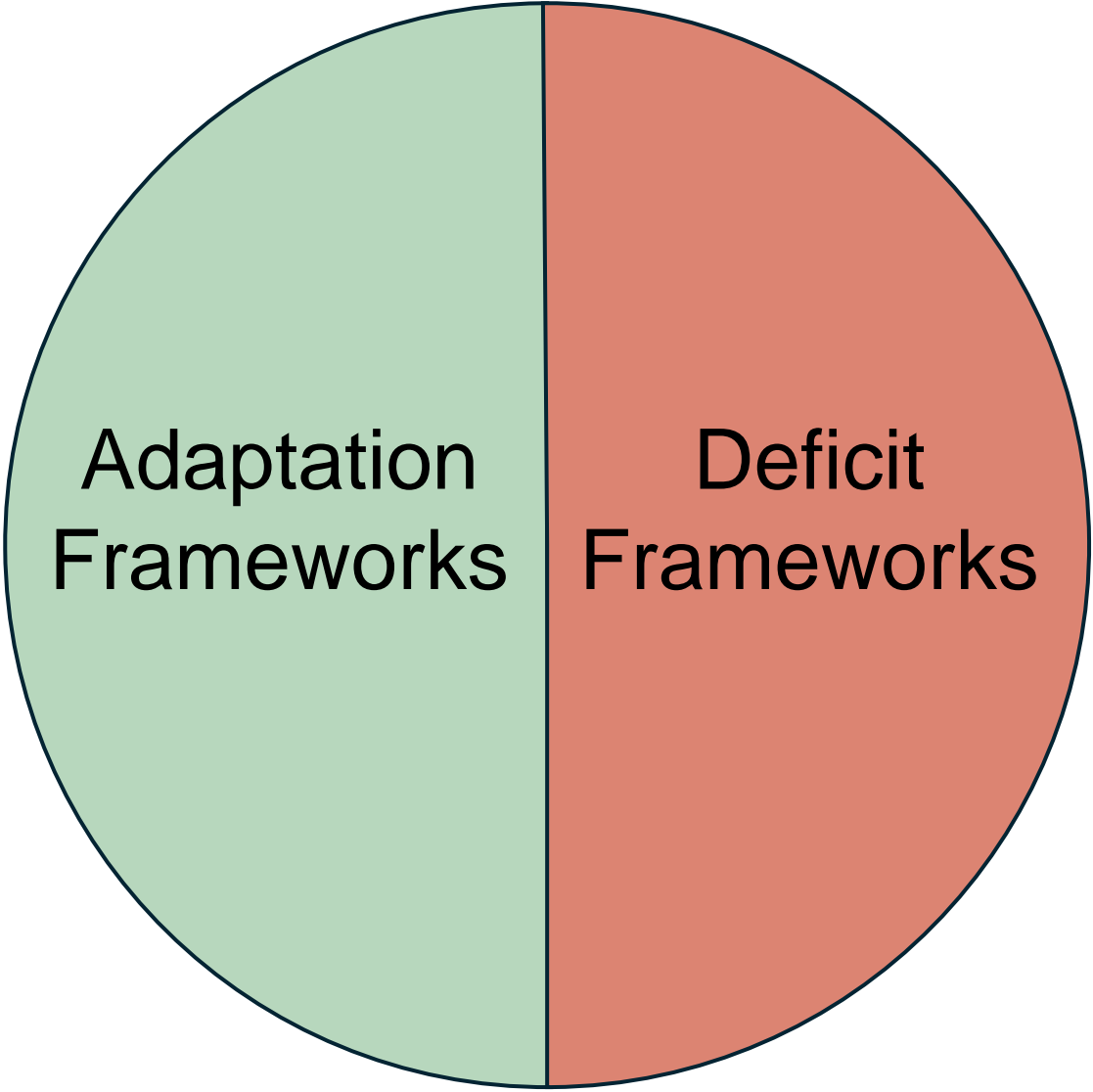
CHILD DEVELOPMENT

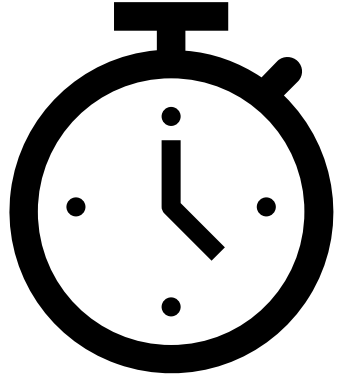


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Ethan S. Young ✉, Willem E. Frankenhuis, Danielle J. DelPriore, Bruce J. Ellis



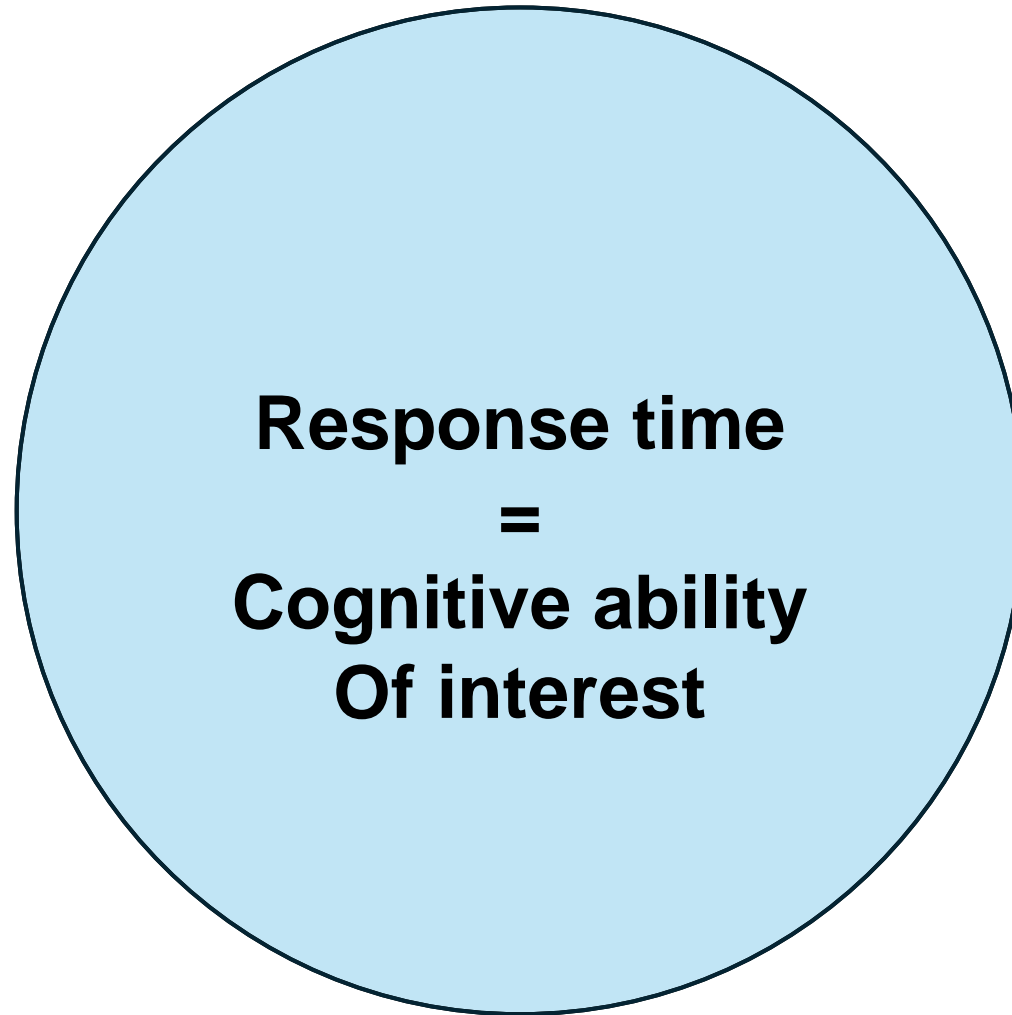


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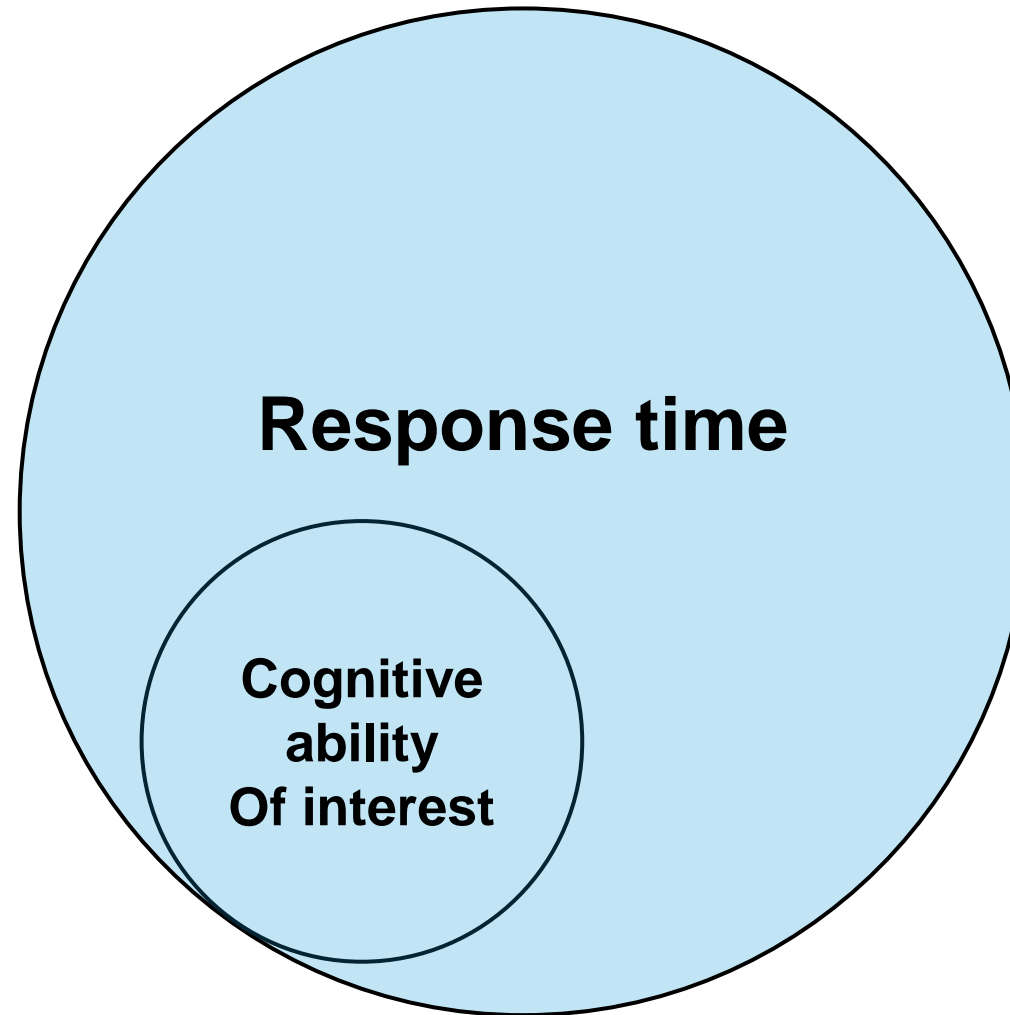
cognitive ability



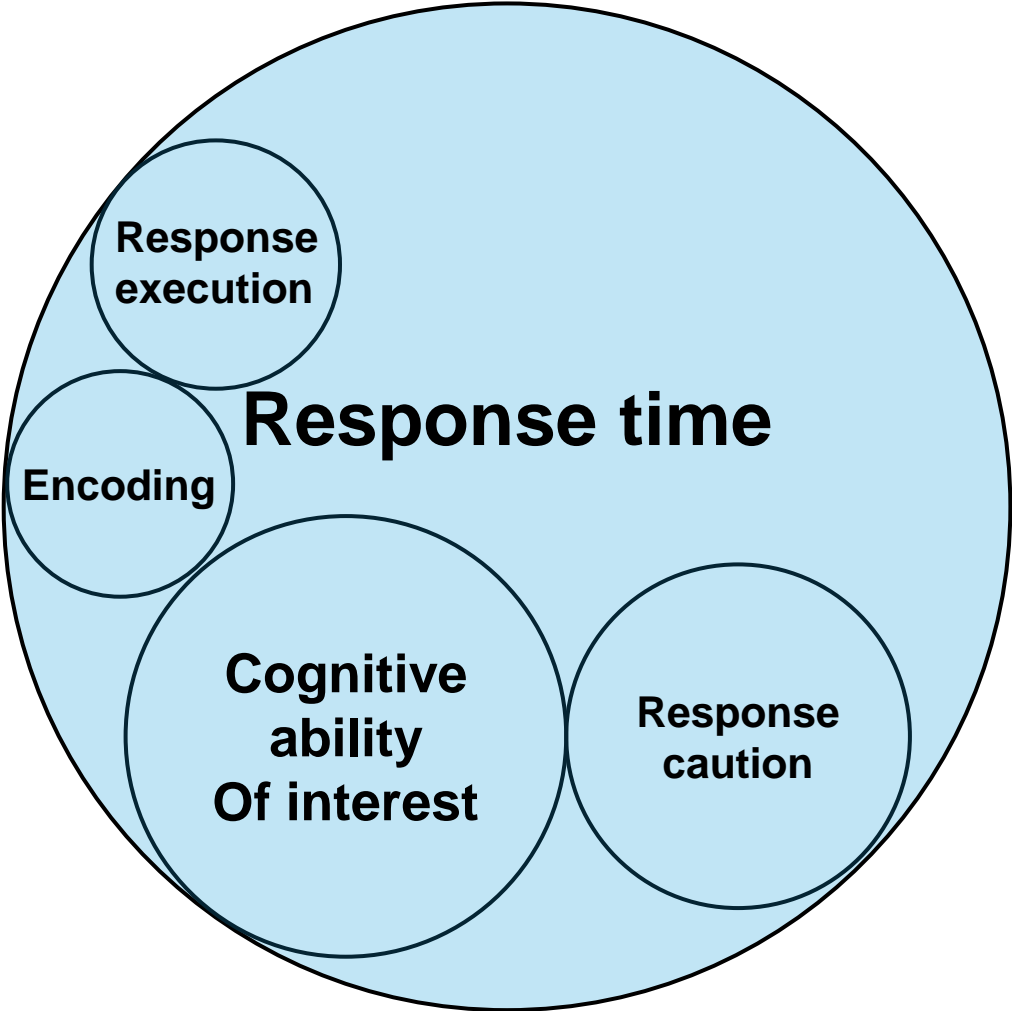
Problem 1: Coarse indicators of ability



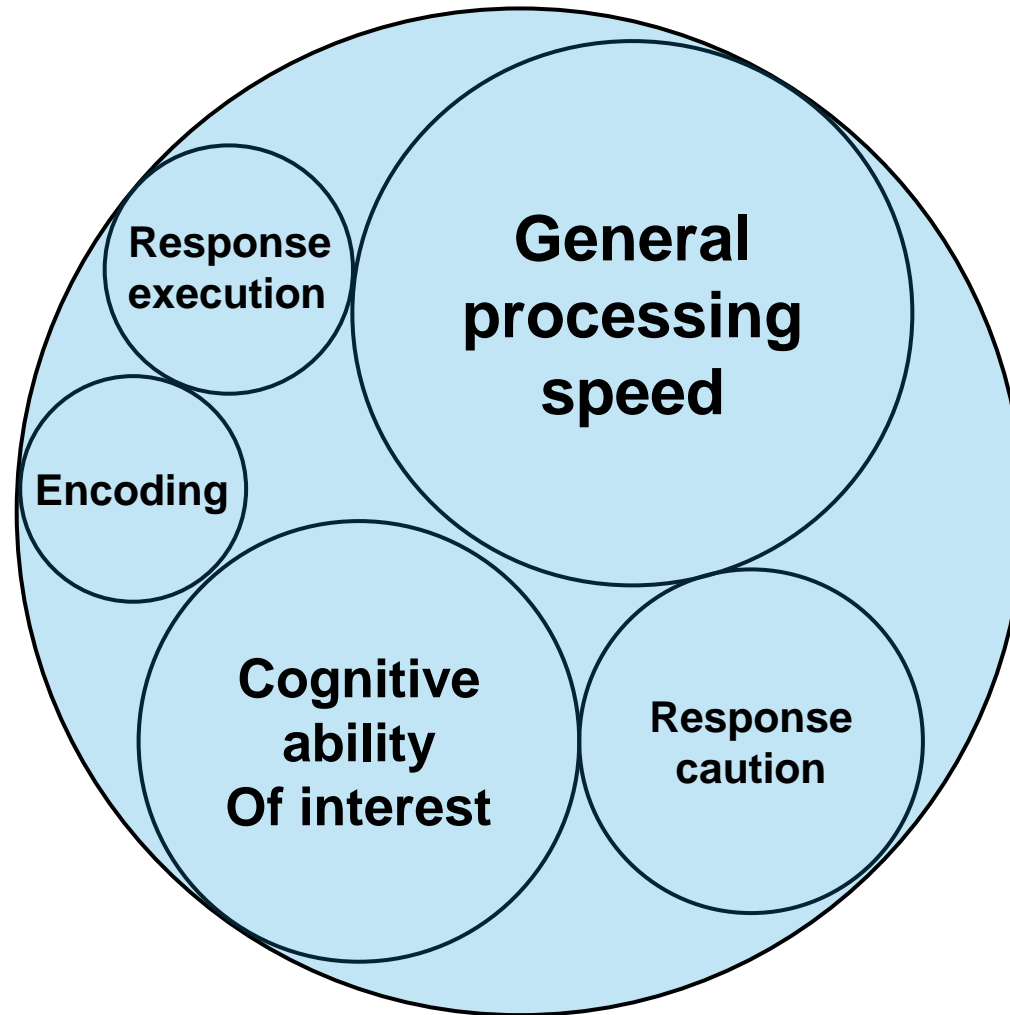
Problem 1: Coarse indicators of ability



Problem 1: Coarse indicators of ability



Problem 2: Shared cognitive processes



ABCD Data



N = 10,563 US children aged 9-10

Training set: 1,500

Test set: 9,063



Household Threat (9 items)

"We fight a lot in our family"

Material deprivation (7 items)

"Needed food but couldn't afford to buy it or couldn't afford to go out to get it"

ABCD Data



N = 10,563 US children aged 9-10

Training set: 1,500

Test set: 9,063



Processing Speed Task

Visual processing

Flanker Task

Inhibition / cognitive control

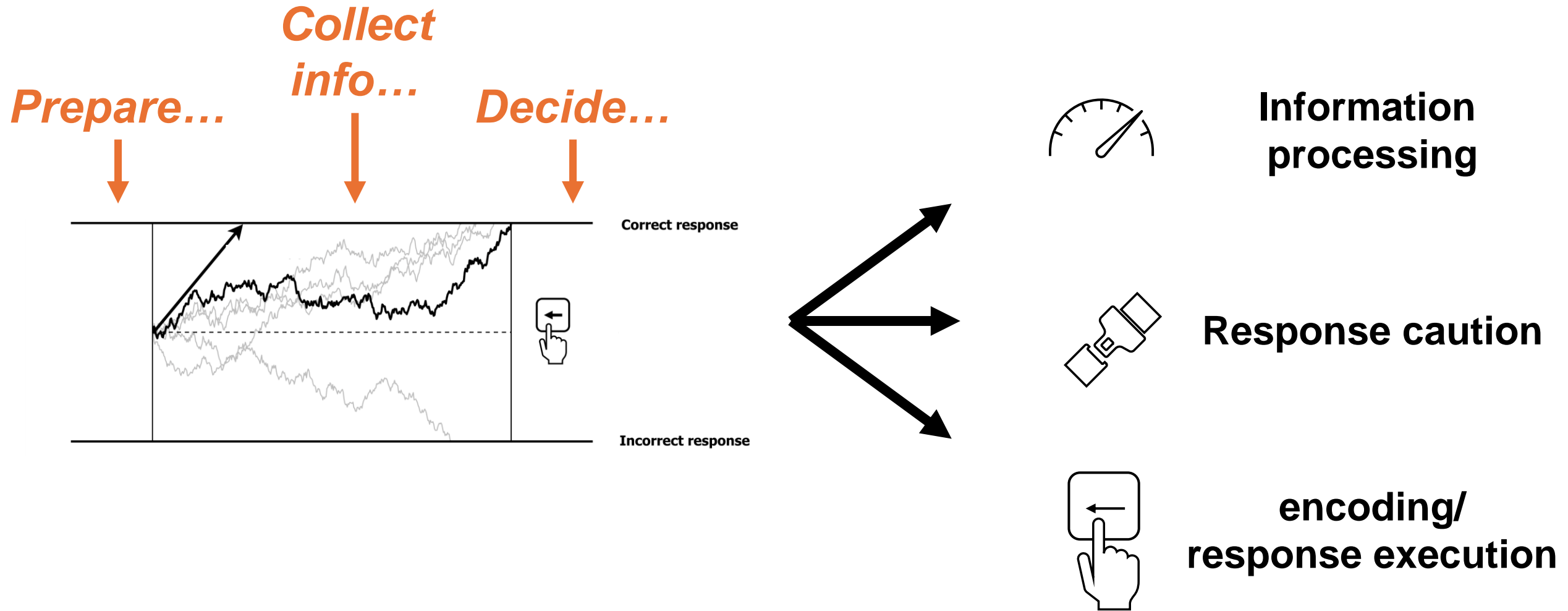
Dimensional Change Card Sort Task

Attention Shifting

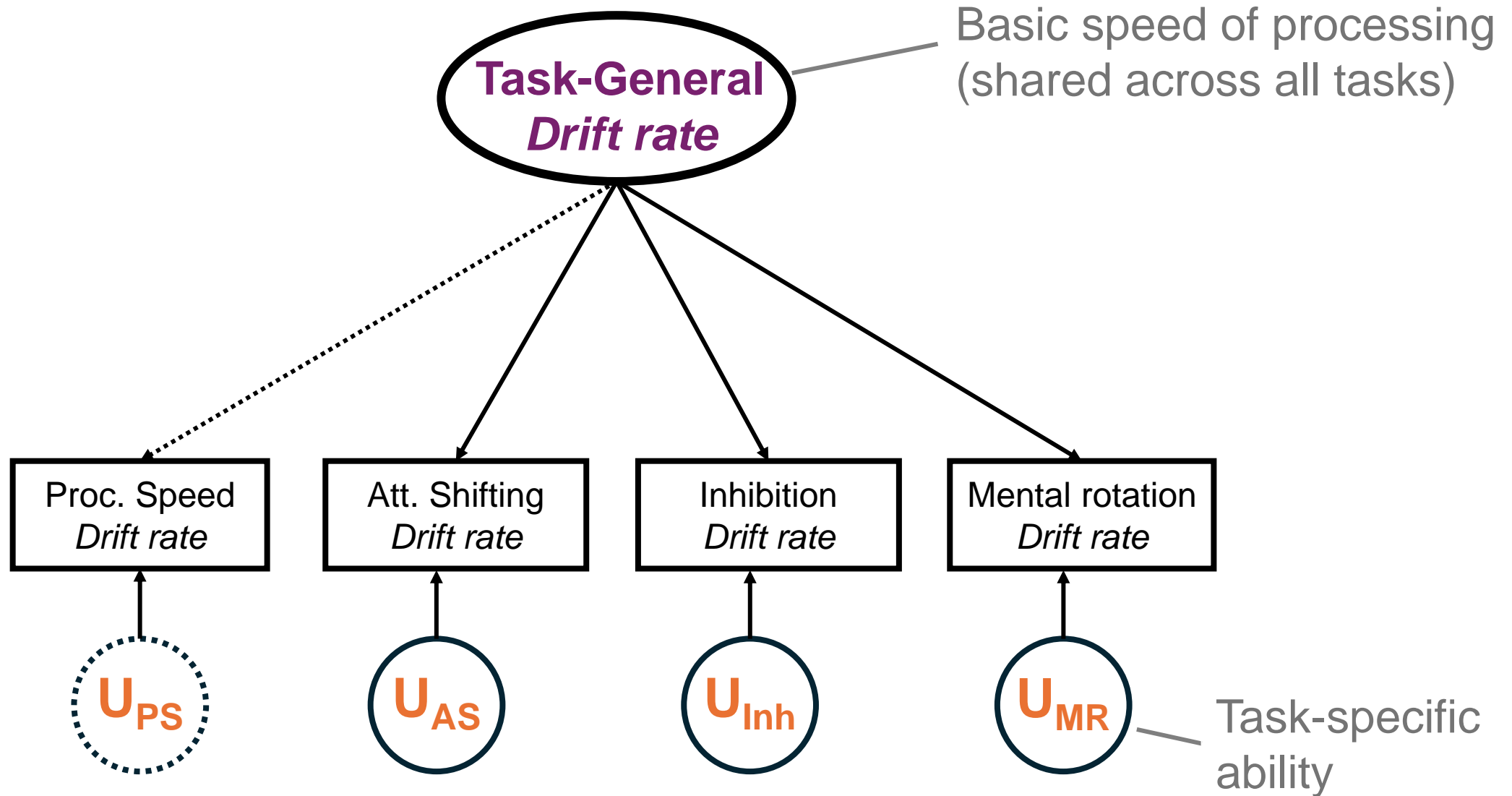
Mental Rotation Task

Visual-spatial processing

Solution 1: Drift Diffusion Modeling

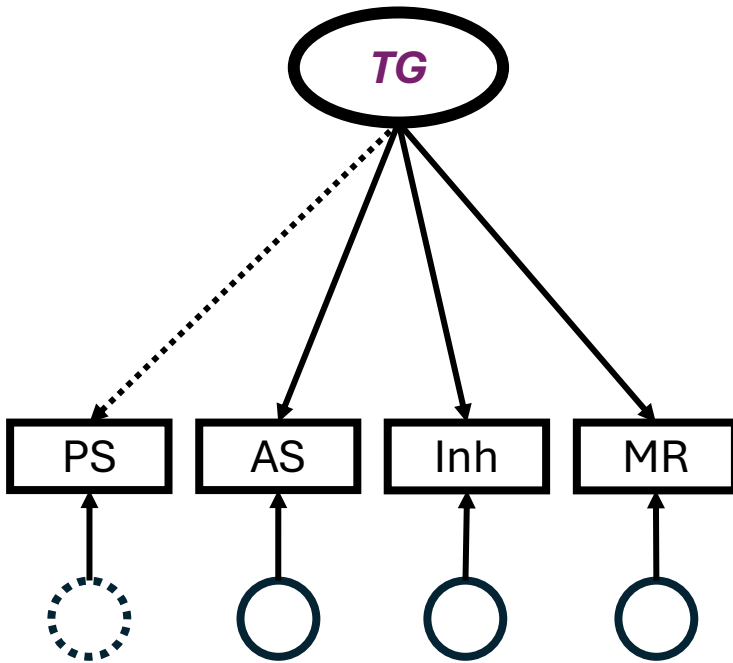


Solution 2: SEM

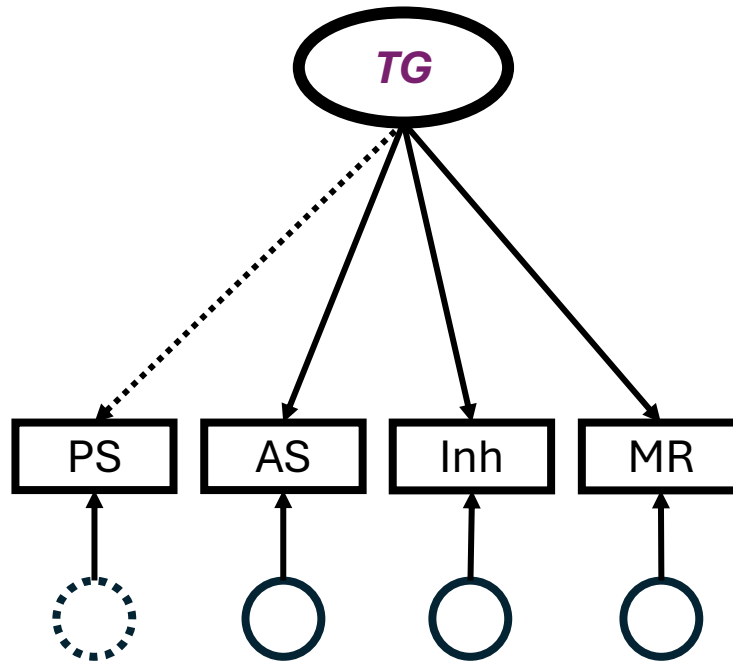


SEM

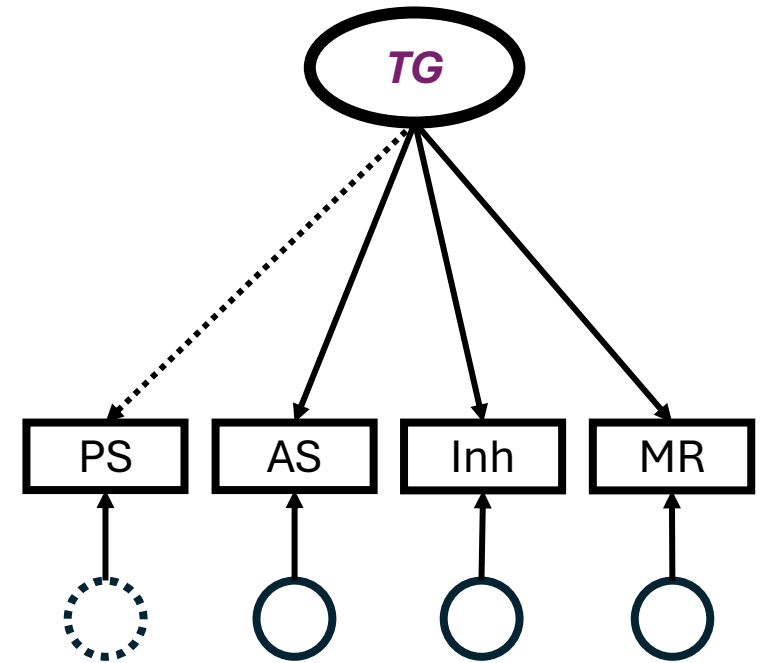
Drift rate



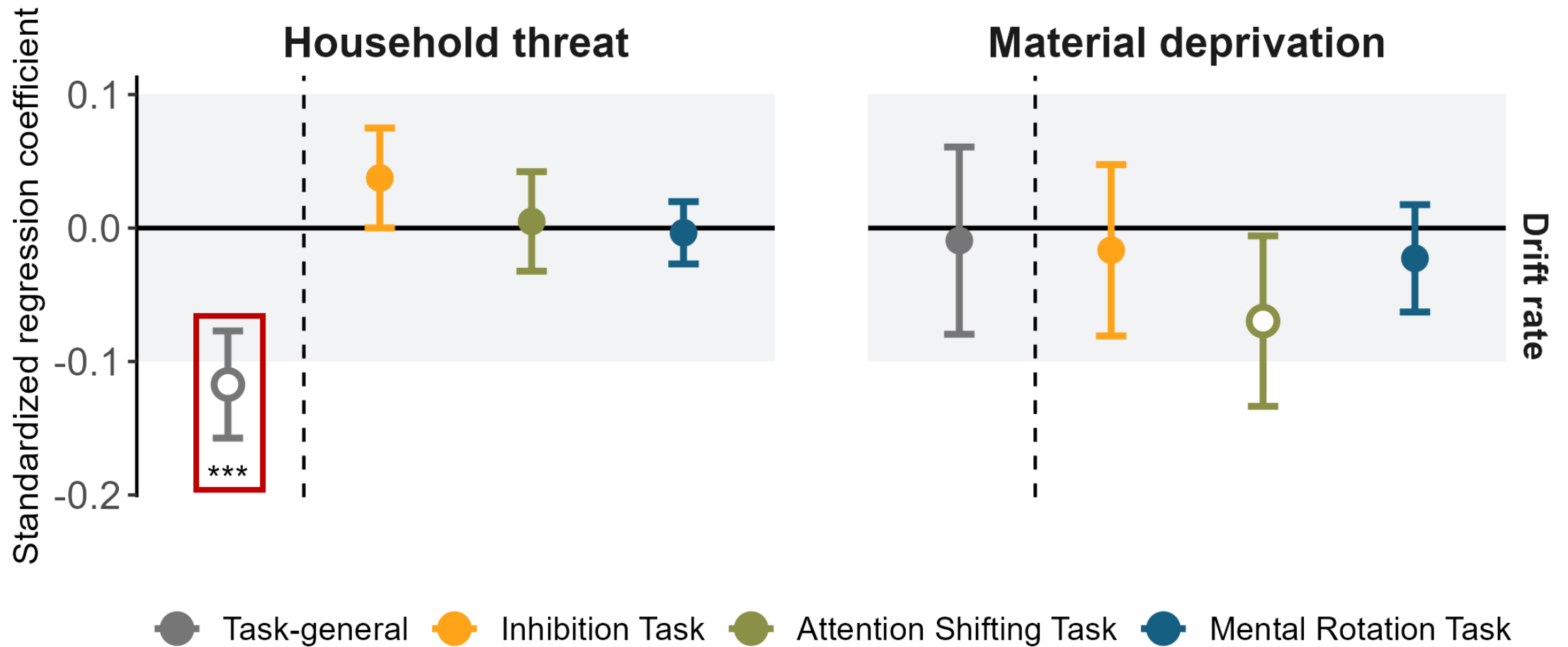
Boundary separation



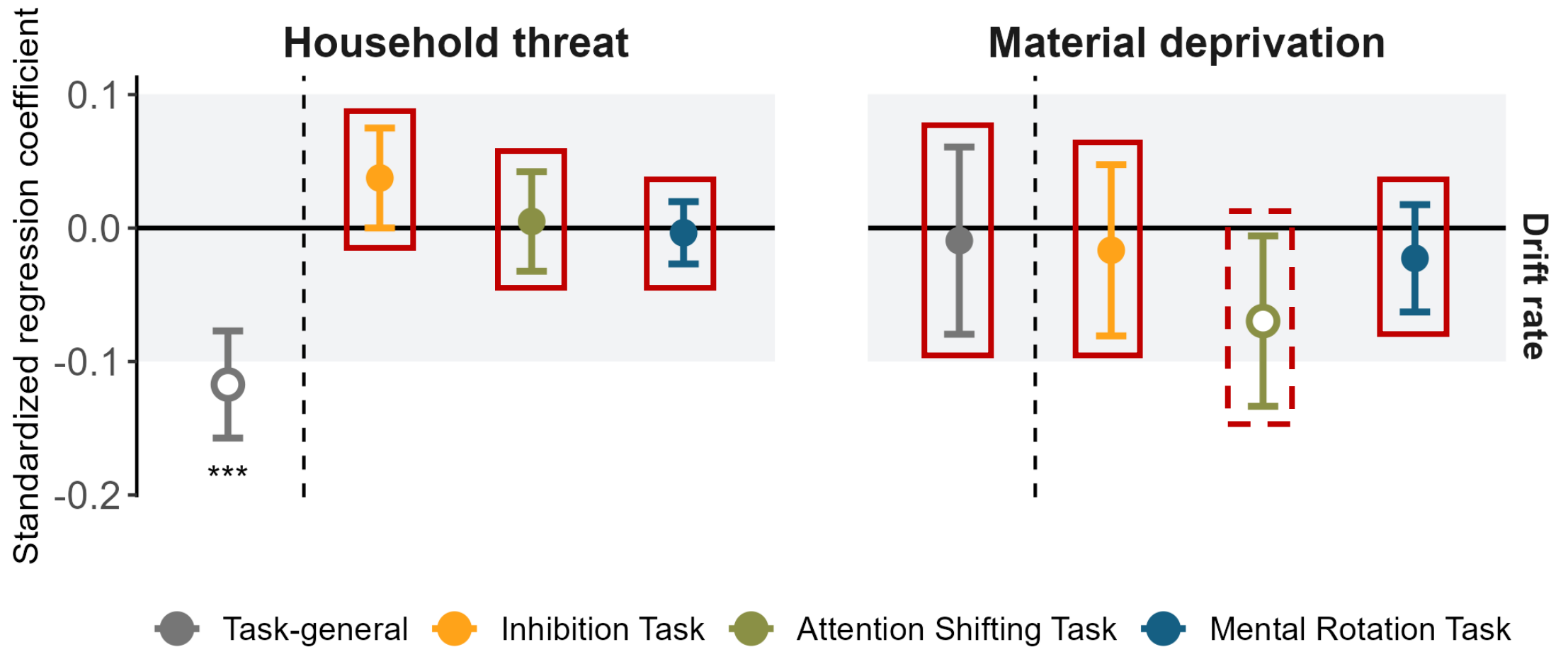
Non-decision time



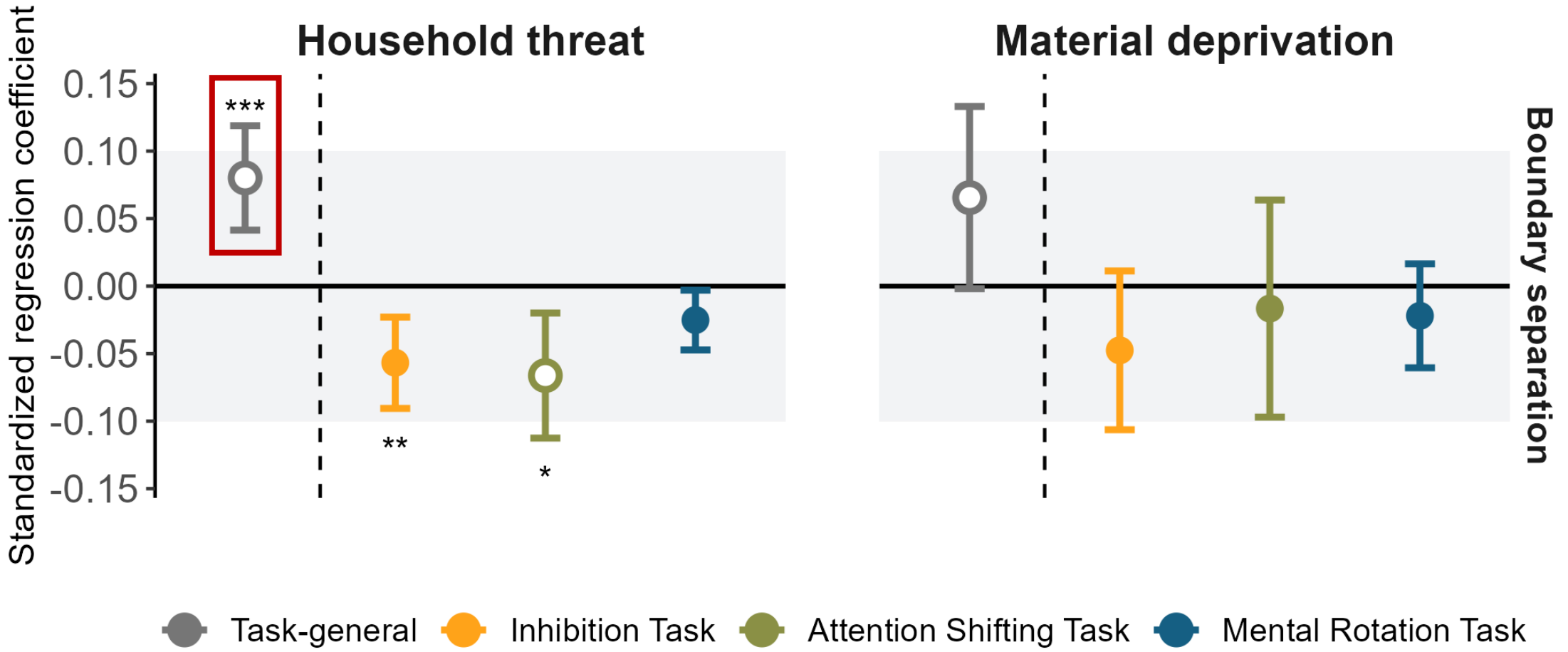
** Not shown: covariances between task-general factors and task-specific factors within tasks*



Lowered performance due to task-general speed of processing



Mostly practical equivalence for task-specific effects



***HIGHER task-general response caution,
But LOWER response caution for the shifting task***

Conclusions

Raw performance \neq cognitive ability!

Mostly task-general, not task-specific effects

Support for deficit framework, but also strategy differences

Thank you!

Collaborators:



Ethan Young



Meriah DeJoseph



Anna-Lena Schubert



Willem Frankenhuis