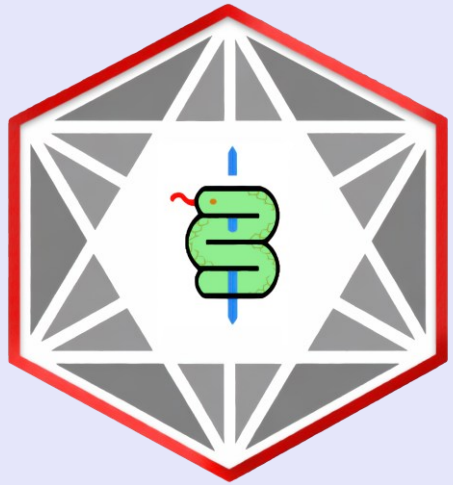
Cognitive ability across cultures



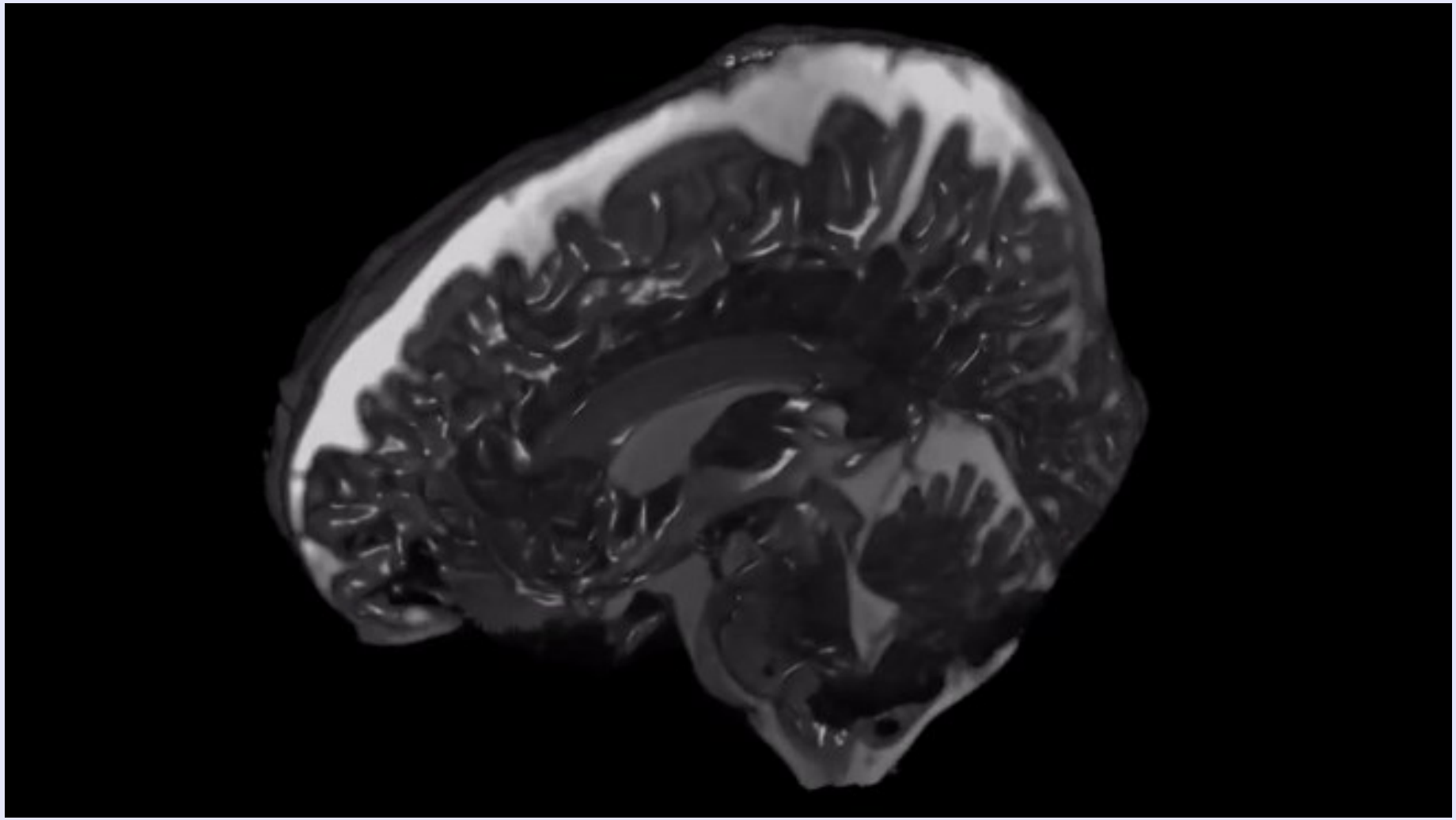
CLINICAL COGNITIVE SCIENCES LAB

Graham Pluck

Chavanovanich, J
Jansari, AS
Turgut, N
Manusook, S
García, D
Phuathavornskul, S
Choaknumkij, K
Ruperti, E
Garcés, MS

The 3rd Thailand International Conference on Psychology 15th July 2025

- The brain is living, breathing, learning, all the time.
- Experiences change the brain.



Abderezaei, J., Pionteck, A., Terem, I., Dang, L., Scadeng, M., Morgenstern, P., ... & Kurt, M. (2021). Development, calibration, and testing of 3D amplified MRI (aMRI) for the quantification of intrinsic brain motion. *Brain Multiphysics*, 100022.

Ecuador

Thailand

- One of the smaller countries in South America
- Less than half the size of Thailand
- Spanish is the most common language

Ecuadorians

A diverse country: Includes coastal, Andean, Amazon and Galapagos regions. 13 native languages, plus Spanish

Mestizo 72%

Afroecuadorian 7%

Indigenous American 7%

Montubio 7%

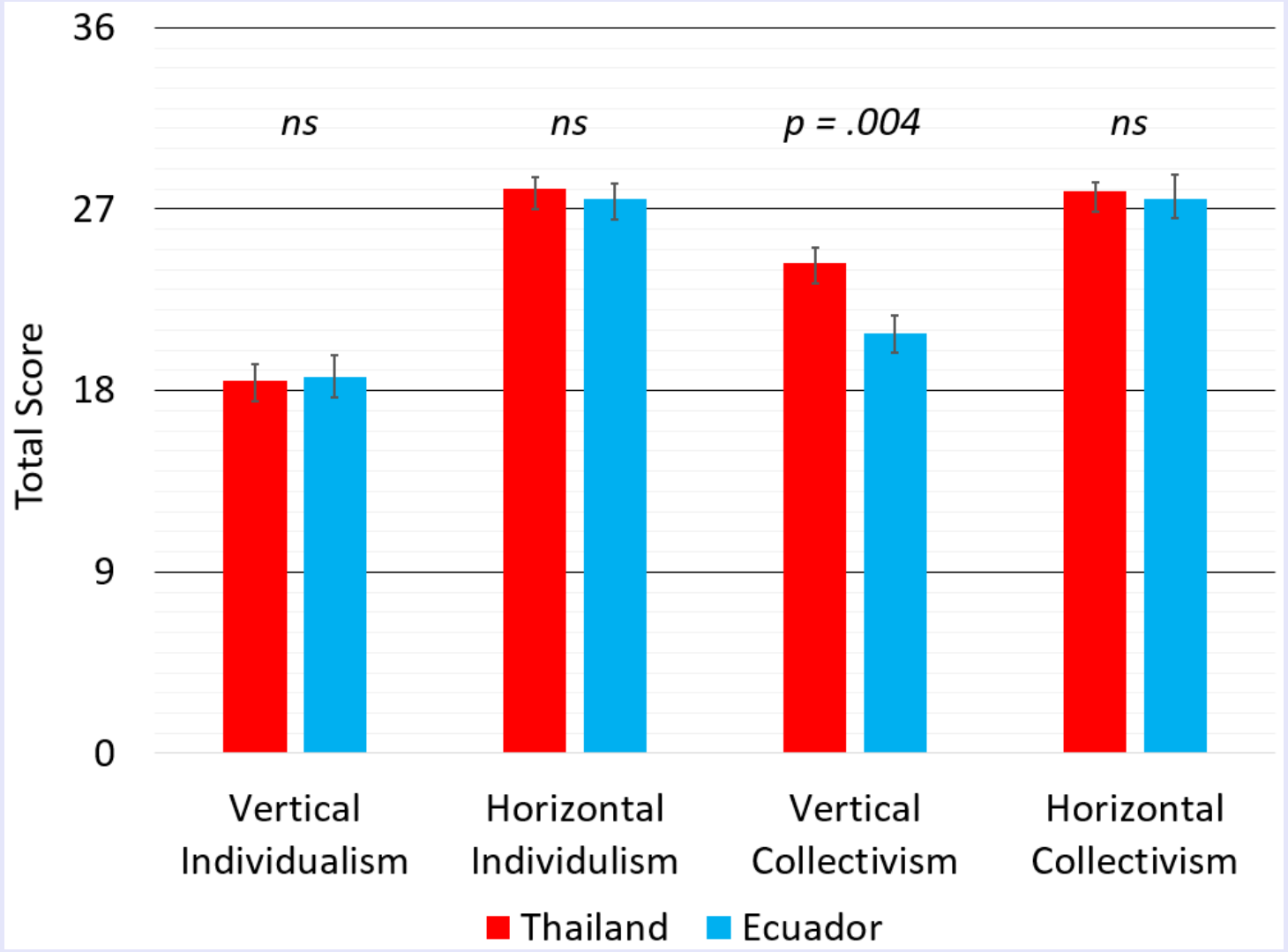
Aspect	Ecuador	Thailand	Shared Issues
Income Level	Middle-income, non-WEIRD	Middle-income, non-WEIRD	Structural inequality, child vulnerability
Language / Script	Spanish, Latin script (widely shared)	Thai, unique script without word spacing	Language affects test adaptation and literacy
Religion	Predominantly Catholic	Predominantly Buddhist	Cultural foundations influence cognition and learning
History	Colonized by Spain	Never colonized	Influence of foreign cultures
Executive Function Use	Mostly clinical/educational	Mostly clinical	Little basic cognitive research
Access Barriers	Illiteracy linked to poverty	Even elites may struggle with Thai script	Inverse Care Law: less access where need is greatest

Villagomez-Pacheco, D., Chavanovanich, J., Garcés, M.S. & Pluck, G. (in submission). Executive functions in non-WEIRD populations, reflections from Ecuador and Thailand. *Open Journal of Psychology.*

- 34 USFQ psychology students recruited

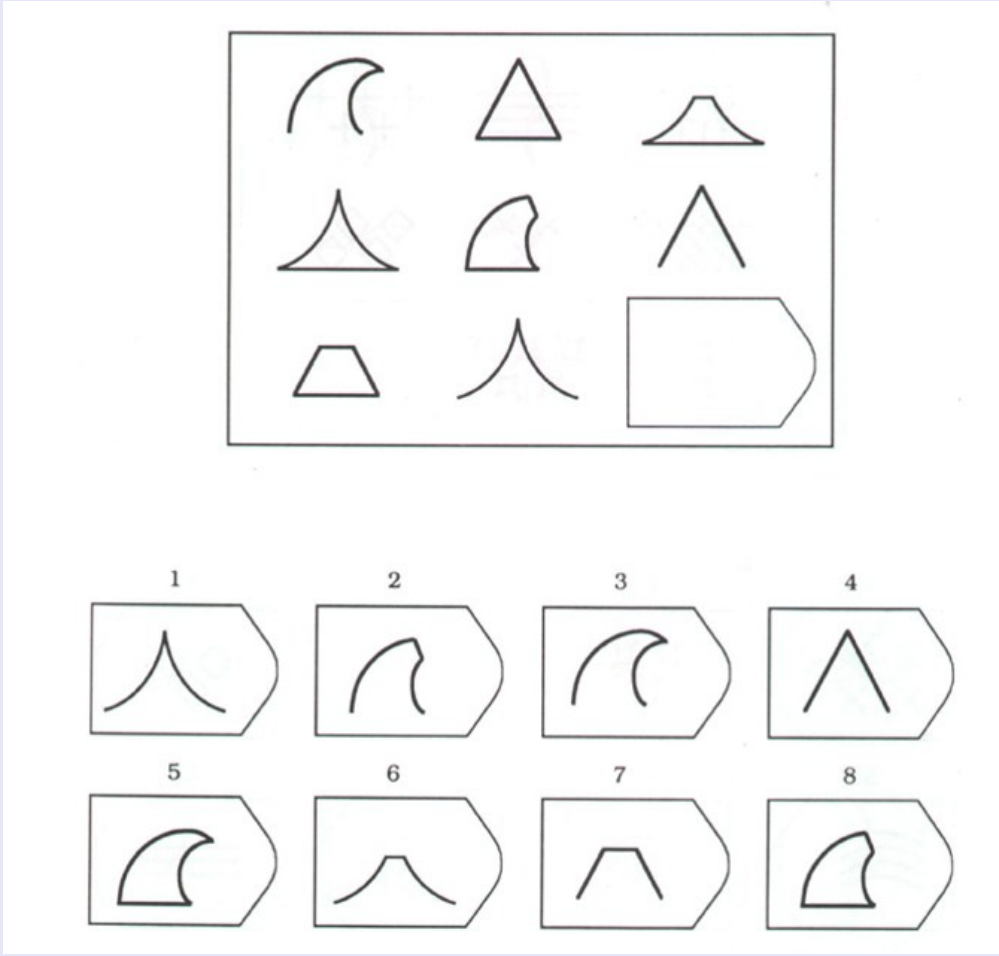
- 59 Chula psychology students recruited

Horizontal and Vertical Individualism / Collectivism Scale



Triandis, H. C., & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical individualism and collectivism. *Journal of Personality and Social Psychology, 74*, 118-128.

Fluid Intelligence: Raven's Matrices



Jansari assessment of Executive Functions (JEF©)

Non-immersive VR

- *Planning* (write a plan, arrange furniture)
- *Prioritization* (e.g., set a meeting agenda)
- *Selective thinking* (organize outgoing mail)
- *Creative thinking* (solve unexpected problems)
- *Adaptive thinking* (produce alternative plans when things go wrong)
- *Action-based prospective memory* (record equipment breakdowns)
- *Time-based prospective memory* (turn on equipment before meeting starts)
- *Event-based prospective memory* (record details of when fire alarms sound)

Jansari et al. (2014). Ecological assessment of executive functions: a new virtual reality paradigm. *Brain Impairment*, *15*(2), 71-87.

In-tray
Completed
Post To Be Sent
Post Diary
My Notes For Manager

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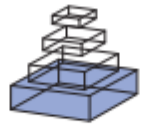
Several studies have suggested that there is little, if any difference between intelligence and executive function

Cross-cultural comparisons may be useful

frontiers in
BEHAVIORAL NEUROSCIENCE

ORIGINAL RESEARCH ARTICLE
published: 24 October 2014
doi: 10.3389/fnbeh.2014.00369



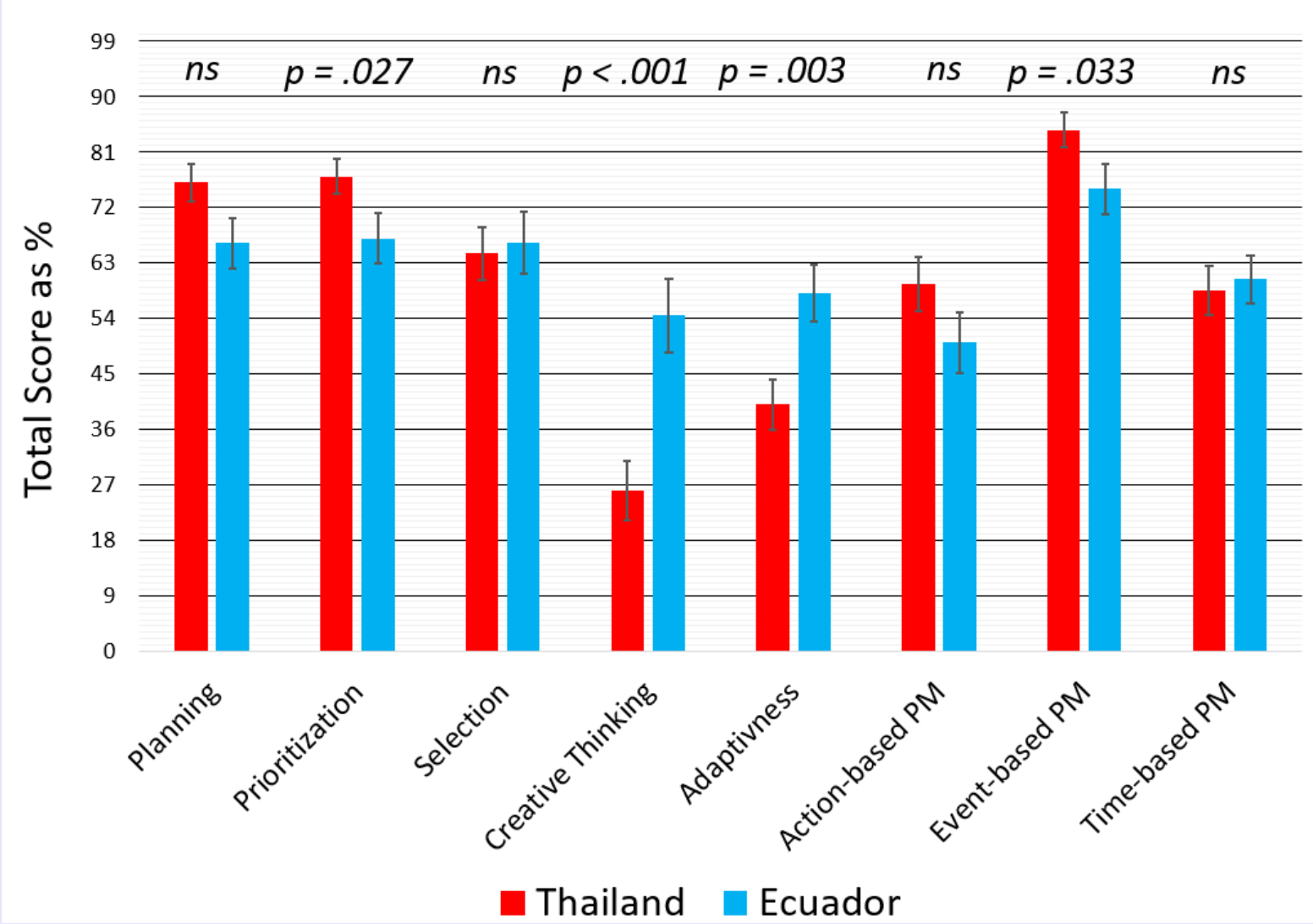
"Executive functions" cannot be distinguished from general intelligence: two variations on a single theme within a symphony of latent variance

***Donald R. Royall*[1,2,3,4]* and *Raymond F. Palmer*[3]**

[1] *Department of Psychiatry, The University of Texas Health Science Center, San Antonio, San Antonio, TX, USA*
[2] *Department of Medicine, The University of Texas Health Science Center, San Antonio, San Antonio, TX, USA*
[3] *Department of Family and Community Medicine, The University of Texas Health Science Center, San Antonio, San Antonio, TX, USA*
[4] *The South Texas Veterans' Health System Audie L. Murphy Division, Geriatric Research Education and Clinical Center, San Antonio, TX, USA*

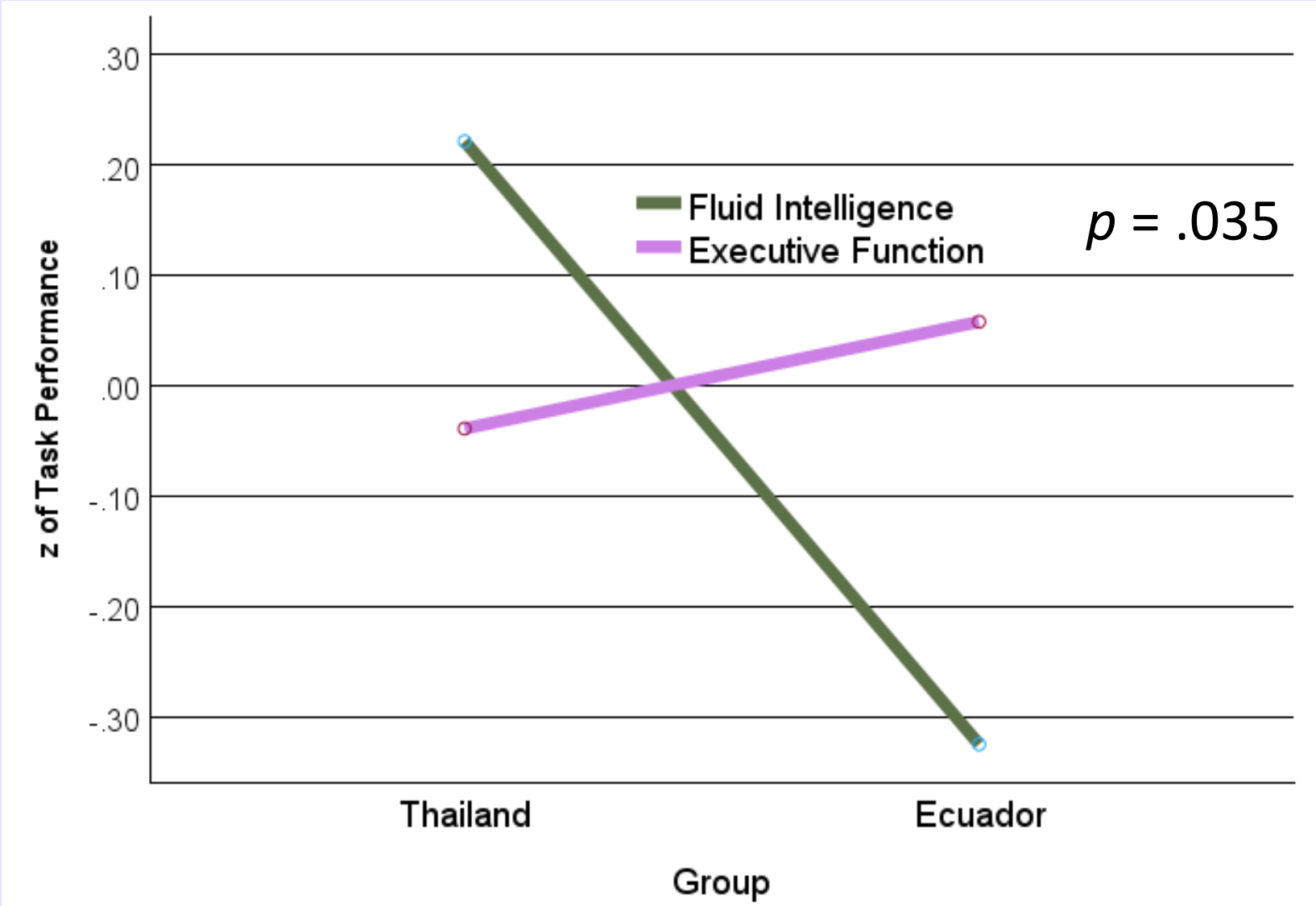
Thai students performed significantly *better* on Prioritization and Event-based Prospective Memory

But, Thai students performed significantly *worse* on Adaptiveness and Creative Thinking



Thai students performed significantly *better* on Fluid Intelligence

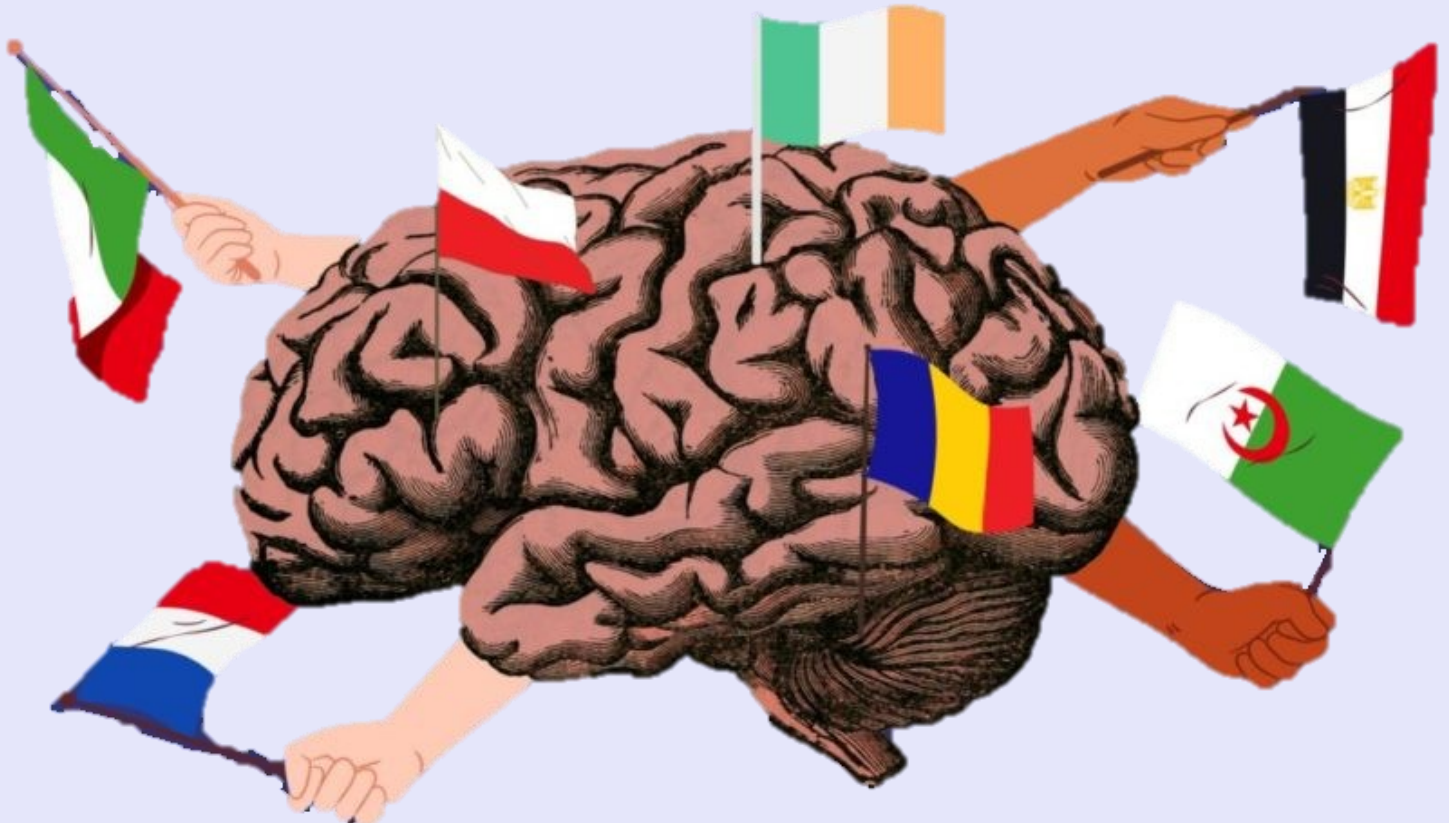
Ecuadorian students performed significantly *better* on Executive Function

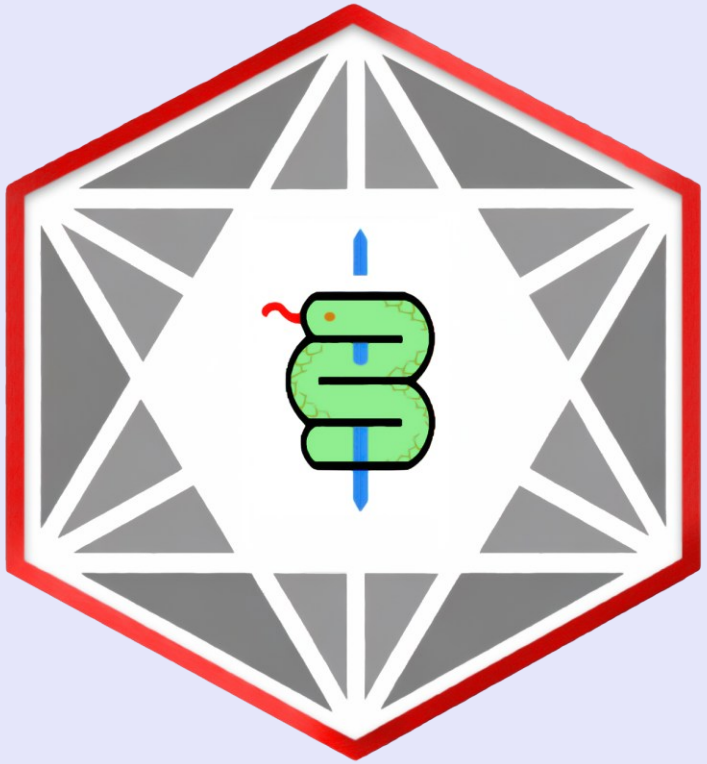


Conclusions:

- Culture has independent effects on executive function and fluid intelligence.

- They are presumably therefore separable constructs.





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