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Effect of Stereotype Threat on the Performance of Elementary School Children: a Meta-Analysis

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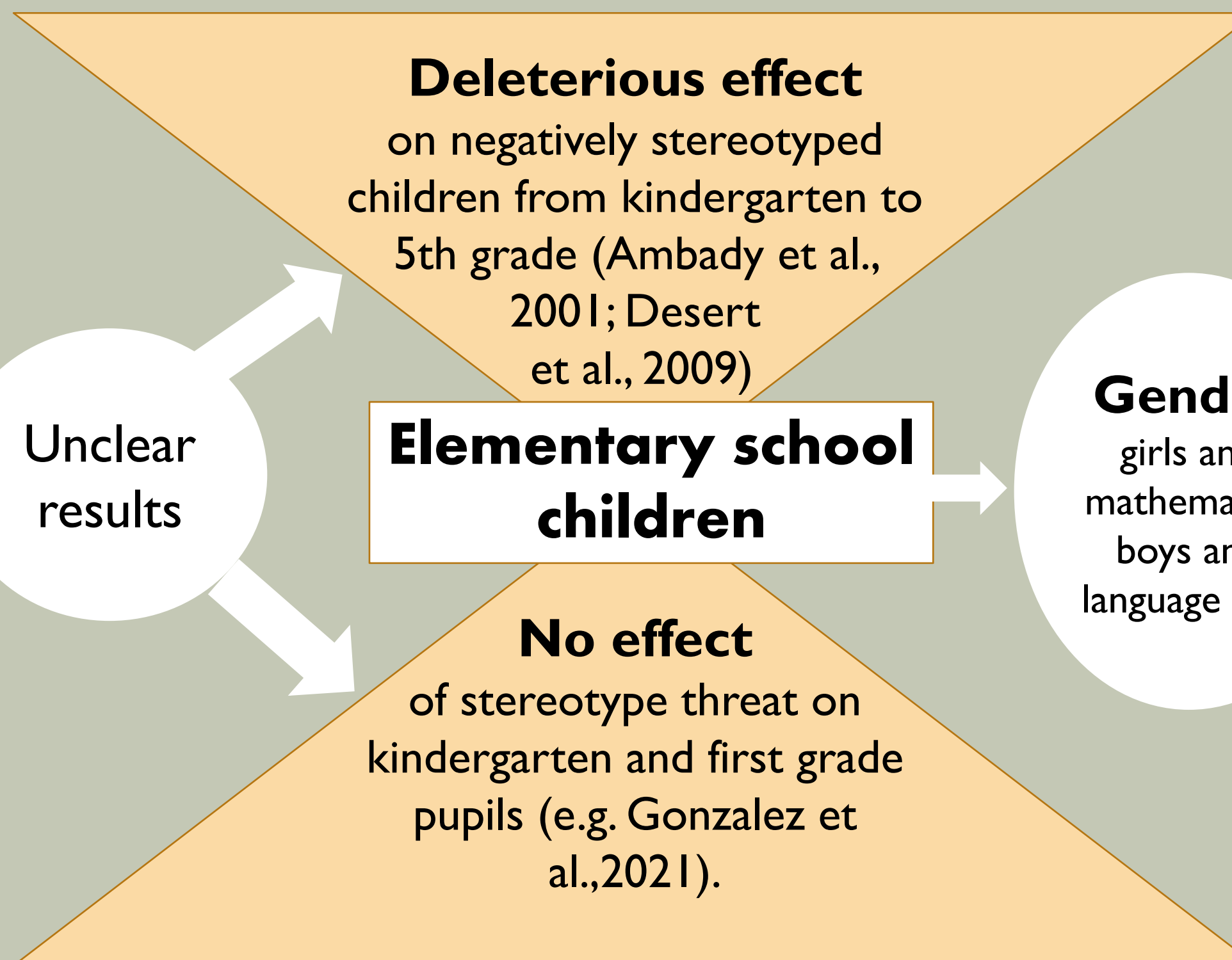
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CONTEXT

Stereotypes can act on a student's performance especially in school test situations. When a student feels threatened by a negative stereotype relating to their group, their attention is no longer fully focused on the task, and this may lead to lower grades (Steele and Aronson, 1995). This phenomenon is known as **Stereotype Threat**

Objective of the meta-analysis

To date, few studies have investigated the effects of stereotype threat in children at elementary school. With this meta-analysis, we aim to examine the effect of stereotype threat on school performance among young children. We will also study the role of moderators such as age, and different stereotypes including gender, ethnicity, weight, and Socio-Economic Status (SES).



METHOD

Inclusion criteria

Review in web databases (EBSCOhost, ERIC, Pascal and Francis and scienceDirect) keywords "stereotype threat" "children" and "elementary school" in February 2022.

INCLUSION manipulated experiment on children (3-11 years old), without special needs, implicit or explicit activation of stereotype threat, school domain performance.

➔ **17 relevant studies, 25 independent effect sizes (n=1861)**

EXCLUSION studies that treated stereotype threat manipulation as a within-subjects factor, and some papers that used different tasks between the control and experimental conditions. We also excluded studies that present the control condition as a test or as a specific domain task (e.g. mathematics task or language arts task; Steele, 1997).

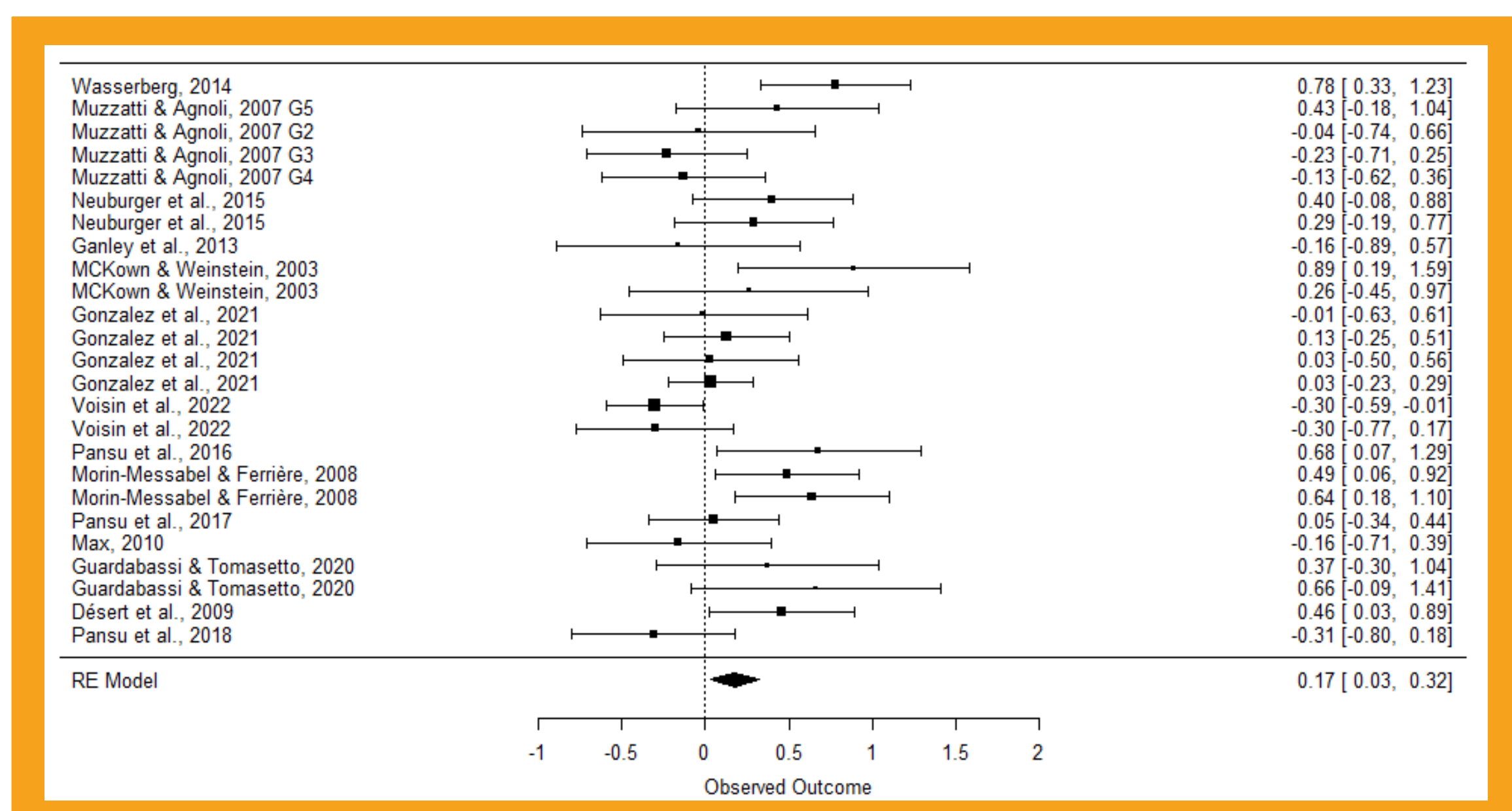
Statistical method

Standardized mean difference (Cohen's d; Cohen, 1988) as the effect size measure between the non-threatening and threatening group. We used the random-effects model (Borenstein, Hedges, Rothstein, 2010).

RESULTS

Overall effect

Significant effect: $d = 0.17$ CI95: [0.03, 0.32]



Elementary school children exposed to stereotype threat performed significantly worse than when they were not exposed to stereotype threat. The Q-statistic: significant heterogeneity in effect sizes across studies ($Q = 51.32, p = .001, I^2 = 53.60\%$).

Step 2 All moderators included (Viechtbauer, 2010).

The test Q-statistics: ($QE = 24.10, p = .15, I^2$) ✓

The test of the moderators was significant ($QM = 18.33, p = .005$) ✓

Variable	Estimate	SE	z	p	95% CI
Intercept	-0.21	0.33	-0.65	.51	-0.86 0.43
Grade	-0.36	0.18	-1.97	.04	-0.72 -0.002
Activation	0.09	0.18	0.49	.62	-0.26 0.45
Stereotype	0.67	0.29	2.25	.02	-0.08 1.25
Context	0.18	0.21	0.80	.40	-0.24 0.60
Domain Language	0.32	0.31	1.01	.30	-0.30 0.95
Domain Mathematics	0.33	0.36	0.91	.35	-0.37 1.03

Results of the multivariate mixed effects meta-regression with seven moderators included.

Stereotype threat effect modulated by :

- grade ($d = -.36, p = .048$)
- stereotype ($d = .67, p = .02$)

Step 3 Publication bias analyses ✓

No publication bias

- Funnel plot asymmetry ($z = -0.26, p = 0.79$)
- Rank test (Kendall's tau = 0.09, $p = 0.51$)

Publication bias

- The trim and fill: 3 studies were missing on the funnel plot left side.
- Rosenthal fail-safe N: 82 unpublished studies to make the d insignificant

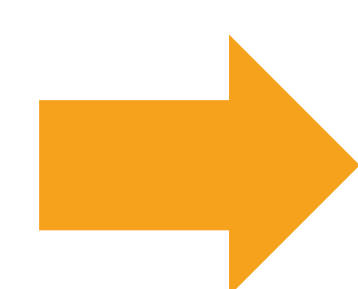
Step 1 Moderator analyses

We analyzed 5 moderators one by one (Viechtbauer, 2010).

Stereotype	Grade	Domain	IRRELEVANT
Gender < other stereotype (ethnicity, weight, and SES)	1 st grade < 2 nd to 5 th grade	Maths, Language arts < intelligence	Context (collective vs individual) Activation (diagnostic vs diagnostic and other activation)

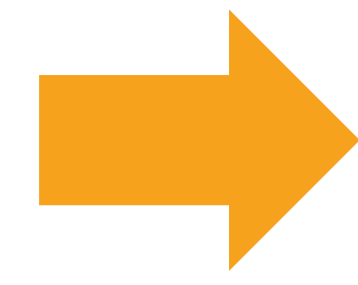
CONCLUSION

- **different effects at different ages:** Stereotype threat acts more on children from 2nd to 5th grade than on younger children.



Developmental interpretation: A certain level of cognitive development may be necessary for the effects of stereotype threat to appear (theory of mind).
School socialization: Young children may have a lack of knowledge of academic fields marked by stereotypes.

- **different effects depending on the stereotype type:** Gender stereotype not as strong as that of weight, SES and ethnicity.



Social identity interpretation: Numerical minority of individuals in stereotyped social group could accentuate the salience of this social identity and leading to greater consequences of associated stereotypes (Badea & Askevis-Leherpeux, 2005).

Limitations:

- Presence of publication bias
- Small number of studies on non-gender stereotypes
- Ethnic stereotypes with only American children

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