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## Introduction

### Background:

- Atypical visual processing, such as enhanced local visual processing or impaired global visual processing, is often reported in individuals with an autism spectrum disorder (ASD)
- Widespread variety of often contradictory research findings

### Objectives:

- Test whether the existing empirical data favor a local processing bias or a global processing deficit
- Analyze which possible moderators rule the local vs. global visual processing diversity in ASD

## Methods

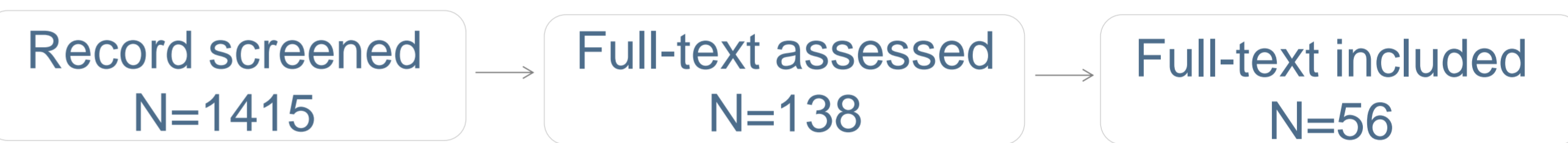
### Literature search:

- Web of Science database (Jan 1983 - July 2013)
- Reference- and citations lists of ten key papers

### Requirements:

- English published article
  - ↳ Local-global visual processing in ASD
  - ↳ Experimental design
  - ↳ Behavioral outcome data

### Study selection process:



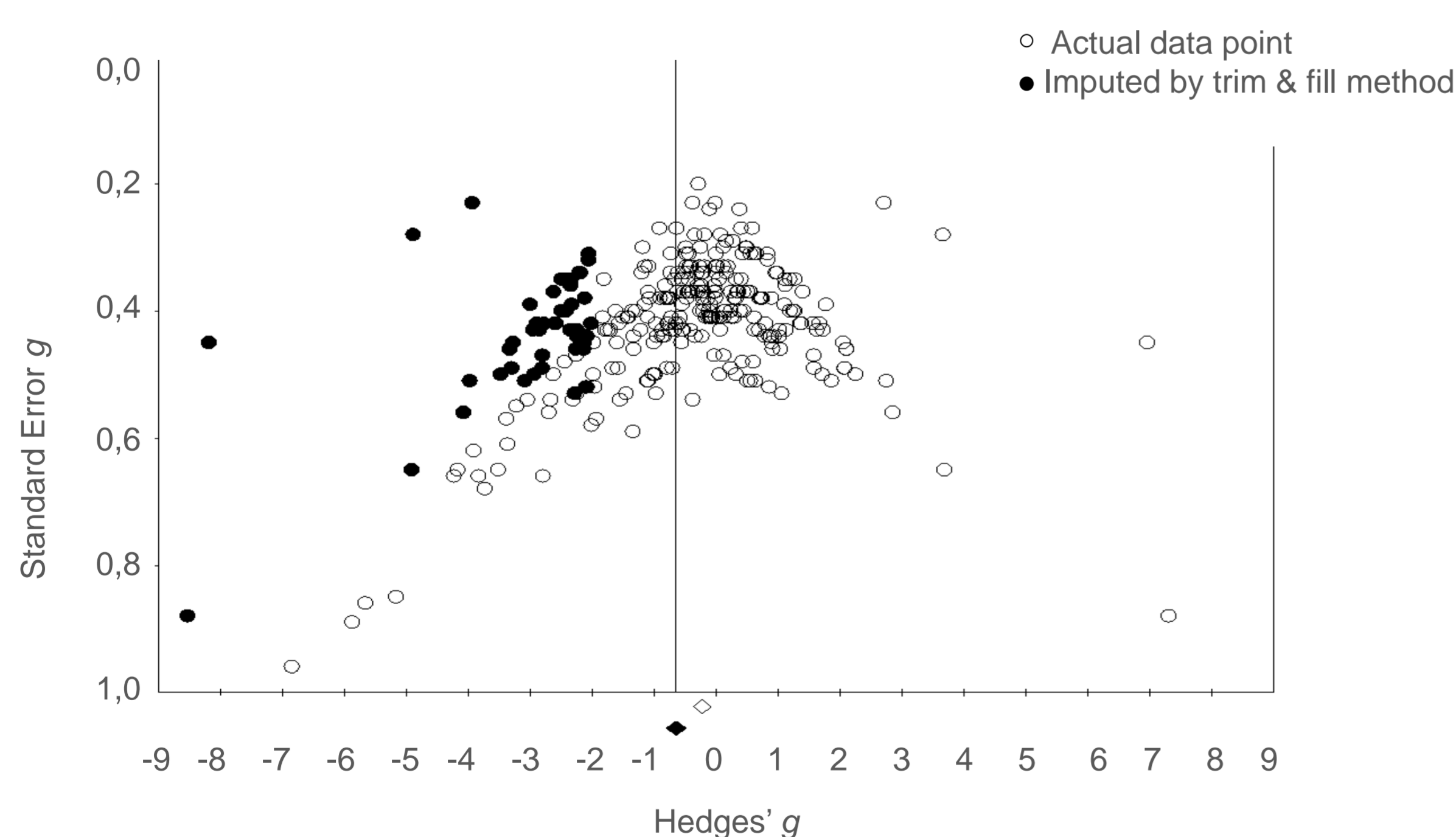
### Analysis:

- Hedges'  $g$  using CMA; negative indicates disadvantage for ASD
- Three-level random effects model using SAS version 9.3
- Analyzed the (combined) impact of several moderators, e.g.
  - 8 different local-global tasks: HF, VS, BDT, EFT, ROCT, DT, D, CT

## Results

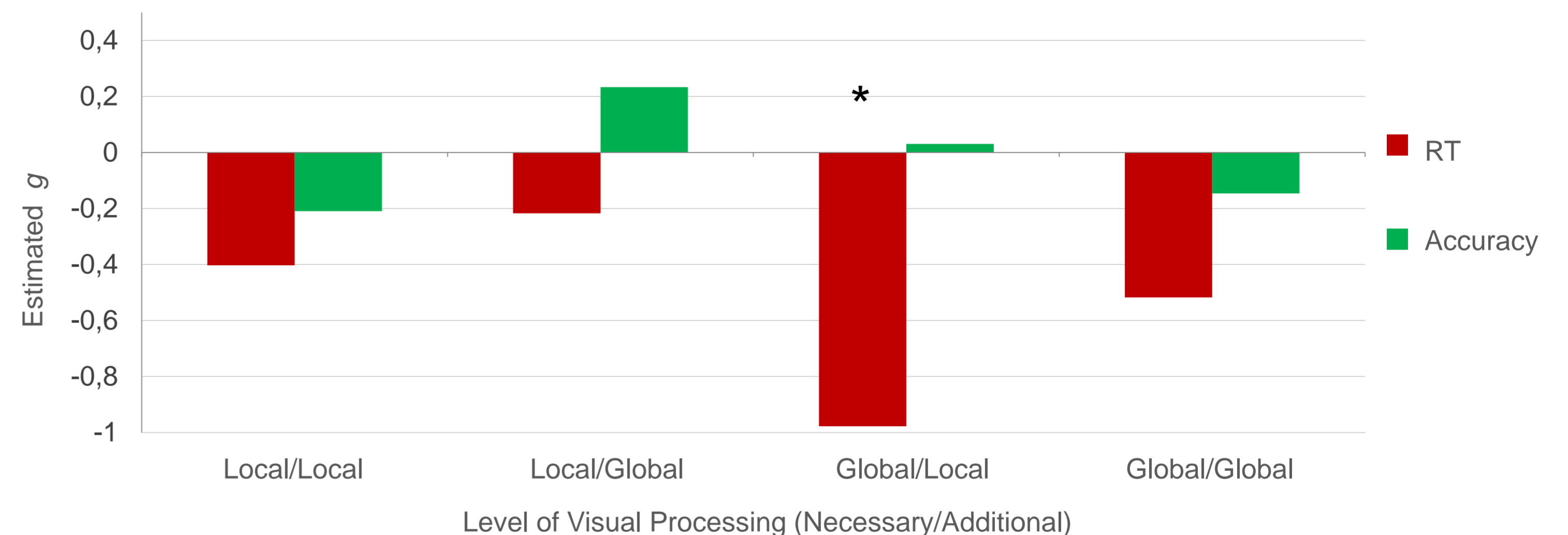
### Investigation of Publication Bias

- Funnelplot:
  - Mean effect size  $g$  as a function of the SE of  $g$
  - Trim and fill method of Duval and Tweedie



### Moderator analysis:

- Strong moderator effects for:
  - Level of visual processing
  - Performance measure: RT vs accuracy
- Limited task-dependent effects:
  - Small overall group differences for HF and VS
  - No group differences for BDT, EFT, ROCF, DT, D and CT
- No moderator effects for IQ, age and gender



## Conclusions

### Summary:

- Intact local visual processing but slow global visual processing in ASD compared to TD
- Interaction effect present between the level of visual processing and the type of performance measure
- Limited task-dependent differences
- Group differences do not vary with age, gender or IQ

### Theoretical implications:

- Focus on temporal interplay of local-global visual processing
- Need to address the lack of clear theoretical and empirically founded conceptualizations