

# **Self-processing in children with attention deficit hyperactivity disorder (ADHD)**

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## Self-processing in children with attention deficit hyperactivity disorder (ADHD)

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## Self processing biases

- Self information is prioritised, leading to the SRE in memory.
- Underpinned by elaboration and organisation in memory, but also **attention**
- Self-cues capture and sustain attention
- ...and may be required to produce an SRE.



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## Source memory

- SREs characterised by source memory / episodic recollection
- Episodic recollections require higher attentional input at encoding (Gardiner & Richardson-Klavehn, 2000)
- Also true of SREs: **dividing attention during encoding eliminates the SRE in memory** (Turk et al., 2013).
- So attentional bias for self-cues combines with attentional **requirements** to produce SREs.
- *Implications for people with reduced attentional capacity?*

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## Implications for ADHD

- ADHD associated with behavioural issues reflecting poor attention (e.g., difficulty concentrating, listening to others).
- Also impairments in **executive functioning** tasks (e.g., WM, inhibition) and **memory** (e.g., free recall, recognition, episodic recollection).
- Causal link? Memory tasks require attention: focusing on to-be-encoded materials, organisation, elaborative binding
- Implications for SREs in people with ADHD.



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## Effects of ADHD on SRE

- Would expect ADHD to reduce SREs.

But...

- Previous research: Klein et al. (2011) – mixed findings
  - standard SRE task (traits: encoded in self, semantic or structural questions) showed **intact SREs** in adults with ADHD;
  - Change in ‘self’ question to autobiographical recall showed **lower SREs** in adults ADHD, with less clustering. (student population, may be low symptom severity)

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## Current study

- Tests SREs in children with ADHD (symptoms usually more severe in childhood; SRE very robust in TD children) (Cunningham et al., 2014; Hutchison et al., in prep.)
- Design:
  - Three participant groups: ADHD, CA match, VA match
  - **SRE task** with two levels of difficulty (no. of stimuli) but reported here in two parts (Exp 1 a/b; incomplete control sample for 1b).
  - **Self Performed action Task (SPT)** – designed to assess ability to link information with self at a basic level (Ross et al., 2011).

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## Exploring SREs in children with ADHD

**Participants:** Children with ADHD recruited from support groups; TD matched controls recruited from schools.

- Exp 1a: 45 children aged 7-14 years (15 with ADHD, 15 CA-matched, 15 VA-matched)
- Exp 1b: 32 children aged 5-10 years (16 with ADHD, 16 CA-matched) (VA-matched sample currently incomplete).

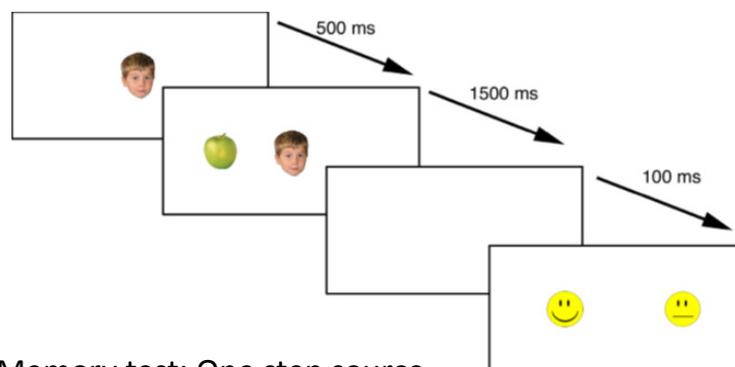
**Method:** children tested individually across three sessions.  
Experimental tasks: **SRE** task and **SPT**

(also given TEA-Ch, BPVS, parental/teacher questionnaires)

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## SRE task: Method

- Exp 1a: 48 items per referent
- Exp 1b: 24 items per referent



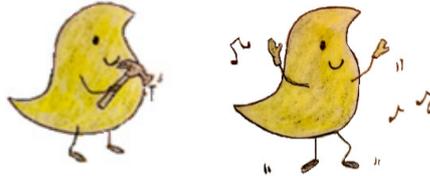
- Memory test: One step source

Adapted from Cunningham et al., 2014

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## Self Performed Task (SPT): Method

- Exp 1a/b: 24 actions, ½ performed by child, ½ by researcher (counter-balanced)

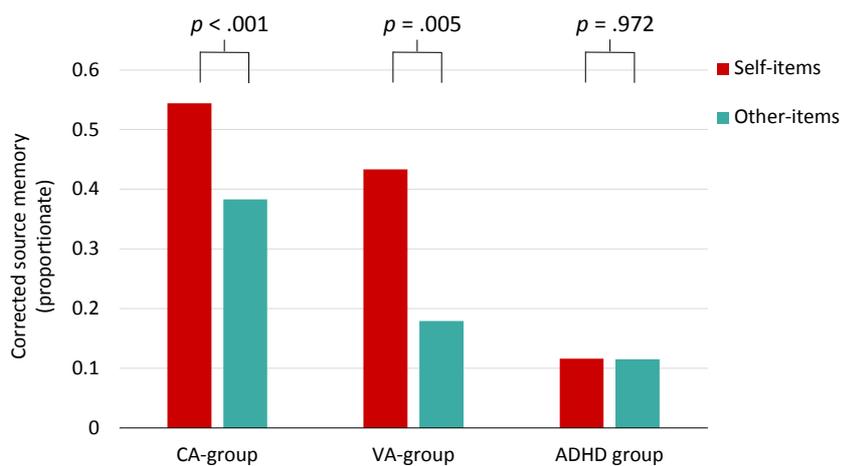


- Memory test: Free recall: all actions, then attribute action to performer.

Adapted from Ross et al., 2011

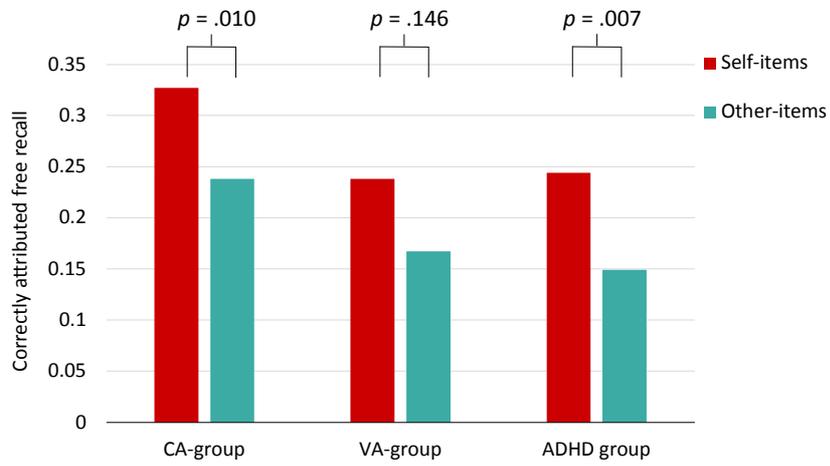
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## Results: Exp 1a – SRE task



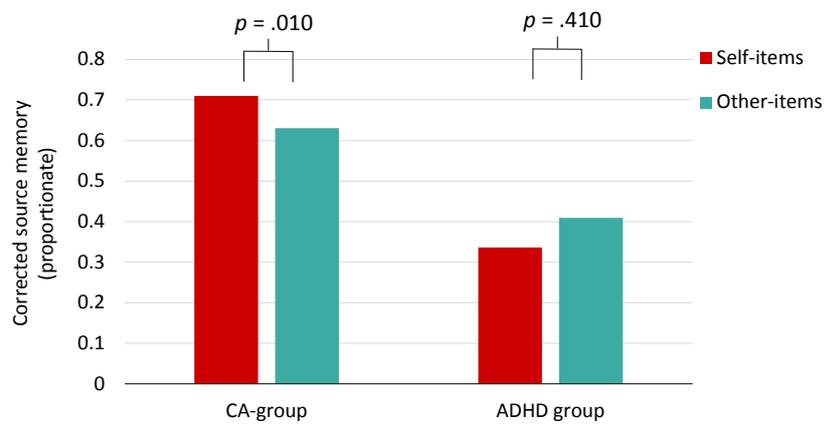
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## Results: Exp 1a – SPT task



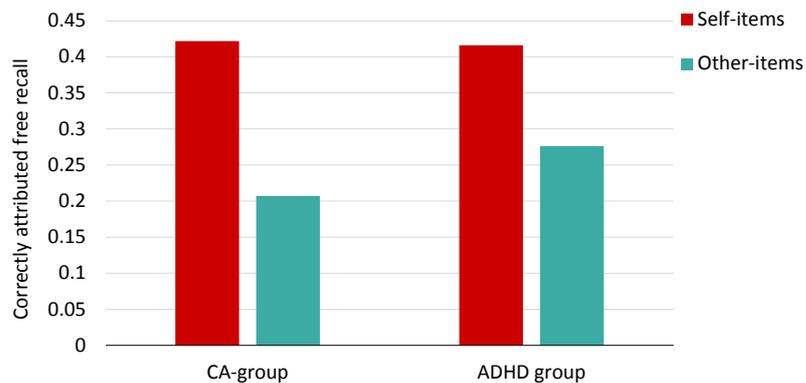
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## Results: Exp 1b – SRE task



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## Results: Exp 1b – SPT task



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## Preliminary conclusions

Consistent pattern across 1a/1b:

- **SRE is not shown in children with ADHD**, but is reliable in control groups.
- SPT shows this is not due to deficit in ability to bind basic information with self.
- *When data fully processed, will be able to examine relationships between SRE and executive functioning ability across 93 participants.*

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## Discussion

What does this tell us?

- Attentional resources are required at encoding to produce SRE
- Supports results of Turk et al.'s (2013) divided attention study
- May be symptomatic of elaborative memory problems associated with ADHD
- Interesting theoretically, and **practically** – e.g., educational applications of SREs not likely useful for this group.

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