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# Four-year olds' episodic future thinking skills

Miss Tsvyata Donova, Prof Teresa McCormack & Dr Aidan Feeney

## Aim of Research:

It aims to identify the age at which pre-school children are capable of showing *episodic future thinking (EFT)* as measured by their ability to select the correct tool for a task to be played the next day.

## Background Information:

It is estimated that people spend about a third of their daily lives mentally simulating future scenarios. This ability to project oneself into the future to pre-experience an event is termed *episodic future thinking* (Atance & O'Neill, 2001). A few studies have investigated this ability in 3-5 year olds (Atance & Meltzoff, 2005; Busby & Suddendorf, 2005; Russell, Alexis, & Clayton, 2010). Perhaps the most successful method is utilised by Russell et al (2010).



## Russell et al's (2010) Blow Football ask:

In this task, 3- to 5-year-olds played a game of blow football on one end of a table. After this children were asked to select (2 out of 6) tools that would enable them to play the same game tomorrow from the opposite, unreachable, side of the table.



On the left is Russell et al's Blow Football Task

## The Three Studies:

### Study 1:

1. Three tasks (see bottom) instead of 1 only
  2. Children select 1 out of 2 tools only (not 2 of 6)
  3. There's larger sample
- Participants:** N=24, 4-year olds (M=54.5 months)  
**Conditions:** Future-Self (Look)

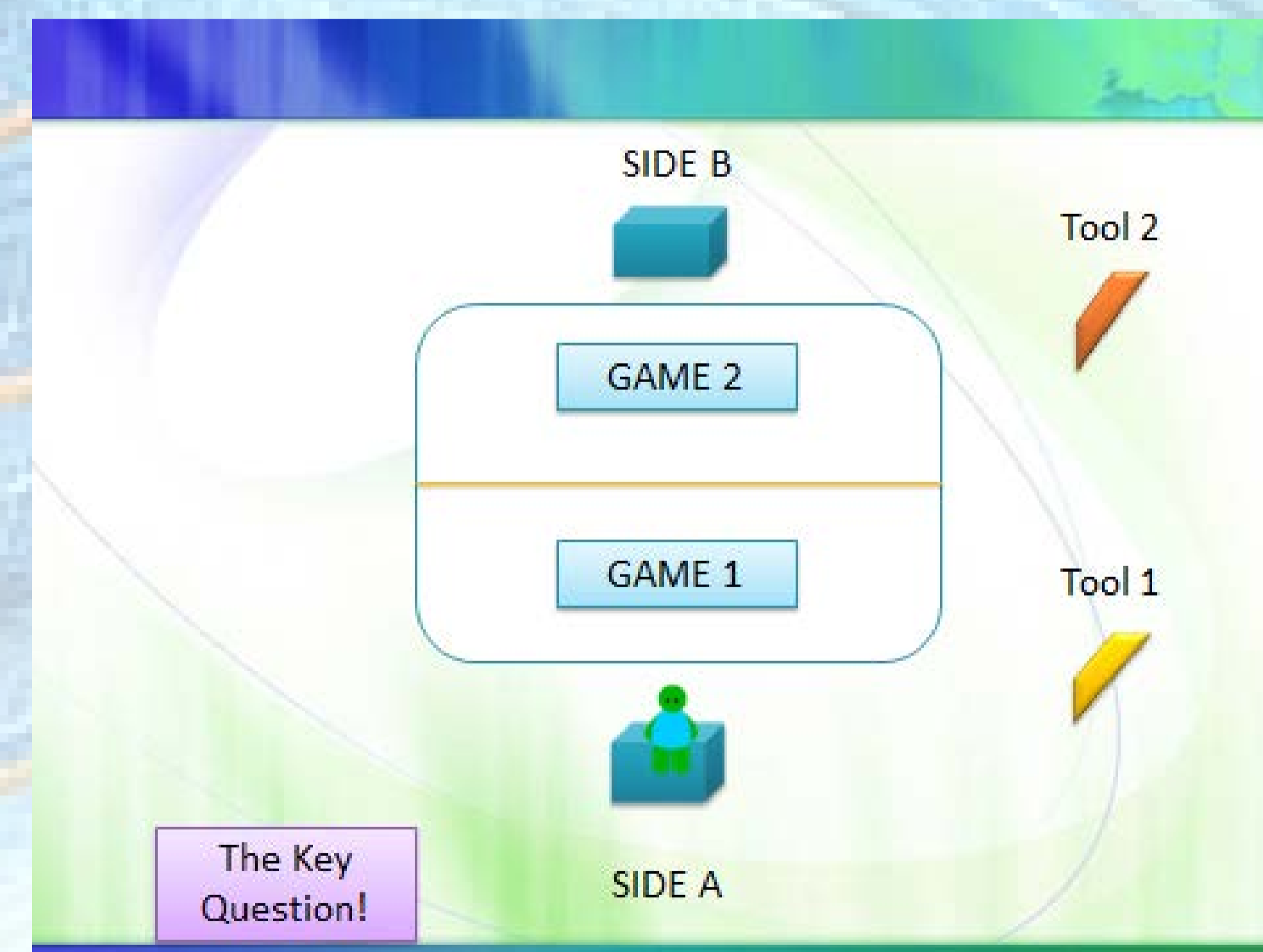
### Study 2:

1. Introduce control group -present-self
  2. Simplify the key question's wording
- Participants:** N=48, 4-year olds (M=53.6 months)  
**Conditions:** Present-Self (Look) & Future-Self (Look)

### Study 3:

1. Introduce refined future-self condition – where 4-year olds have turned their backs on the games
- Participants:** N=24, 4-year olds (M=53.7 months)  
**Conditions:** Future-Self (Not Look)

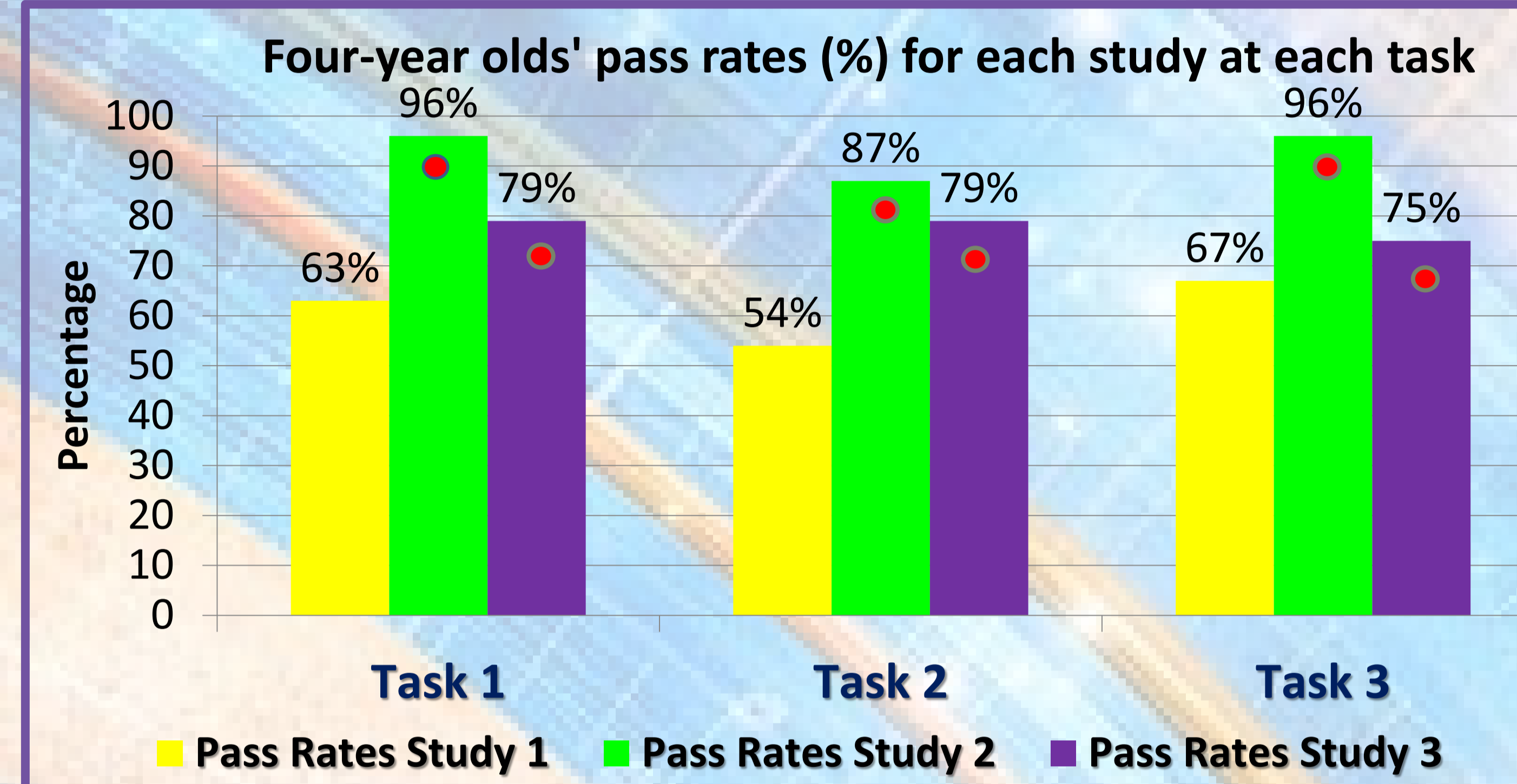
## Procedure:



## Apparatus:



## Results Outline:



## Discussion:

Initially results confirmed Russell et al's (2010) findings that 4-year olds would not be able to solve the tasks. However, a more simplified wording of the question, inclusion of pre-schoolers of higher SES and ensuring that children do use their mind's eye to imagine what the right tool would be, resulted in above chance pass rates for 4-year olds. These findings support Suddendorf, Nielsen & von Gehlen's (2011) study which indicated that 4-year olds were capable of securing a solution to a future problem and the general literature that future thinking abilities appear in the 3-5 age range (Atance & Jackson, 2009).

## Future Directions:

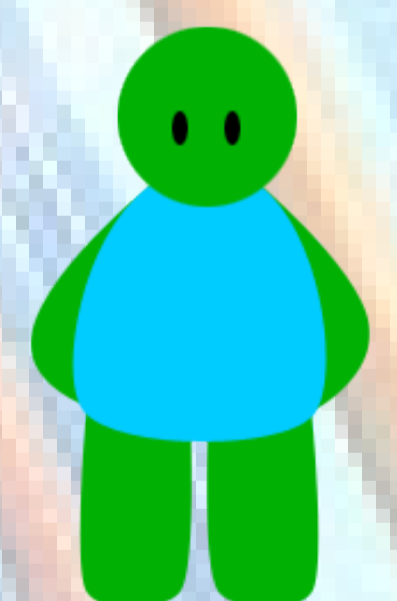
The next step would be to explore the interaction between *episodic future thinking* and other important abilities that emerge at the age of 4 such as theory of mind and executive control (attention). Knowing that would enable us to see what other factors may impact the development of *episodic future thinking* and it will guide future research in developing strategies that would enable young children to improve their planning and decision-making skills.

## References:

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## Results Description:

**In Study 1:** No statistically significant results perhaps due to lower SES of children and perhaps more complex wording of the key question  
**In Study 2:** Performance was significantly above chance – the simplified wording of the key question and might indicate presence of EFT ability  
**In Study 3:** Performance was again significantly above chance despite that children did not look at the Games in answering the key question – a further evidence for EFT skills in 4-year olds



## Researchers' Contact Details

**Prof Teresa McCormack**  
E-mail: [t.mccormack@qub.ac.uk](mailto:t.mccormack@qub.ac.uk)

**Dr Aidan Feeney**  
E-mail: [a.feeney@qub.ac.uk](mailto:a.feeney@qub.ac.uk)

**Miss Tsvyeta Donova**  
E-mail: [tdonova02@qub.ac.uk](mailto:tdonova02@qub.ac.uk)