Emergence of episodic future though in pre-school aged children

**BACKGROUND**

**What is episodic future thinking?**

The ability to project oneself into the future to pre-experience an event is termed episodic future thinking (Atance & O’Neill, 2001).

**Previous developmental studies**

Relatively few studies have investigated this ability in young children (Atance & Meltzoff, 2005; Busby & Suddendorf, 2005ab; Russell, Alexis, & Clayton, 2010; Suddendorf, Nielsen, & von Gehlen, 2011). All studies suggest this ability emerges in the 3-5 age range.

In Russell et al.’s (2010) task, 3-, 4- and 5-year-olds played a game of blow football on one end of a table (see Figure 1). At the end of the game children were asked to select 2 out of 6 items (see Figure 2) that would enable them to play this game tomorrow from the opposite, unreachable, side of the table (in blue). There were three conditions: present-self (control condition), future-self and future-other.

![Figure 1. Russell et al.’s Blow Football Task](image1)

![Figure 2. Children choose 2 out of 6 items to use tomorrow; correct answers are straw and yellow step](image2)

**Russell et al.’s findings**

1. Present-self condition: all age groups (3, 4 and 5) selected the right 2 items for the next day above chance level
2. Future-self condition: only children aged 5 selected the right 2 items for the next day above chance level
3. Future-other condition, where children were asked what another child would select, both 4- and 5-year olds selected the 2 items above chance.

**Limitations:**

1. Small numbers of children in each test group
2. Probability of choosing correctly by chance was very low due to the large number of distractors (2/30).
3. Relatively few children actually passed in groups performing above chance.

4. Having to select 2 out of 6 items may place more cognitive demands on children’s executive functions
5. Single piece of apparatus: do findings generalize?

**METHOD AND MATERIALS**

These studies were based on Russell et al.’s (2010) basic design but differed in that they involved: a) three novel games b) larger samples c) different level of chance performance.

**Study 1:**

**Participants:** 24, 4-year olds (M = 53.6 months)

**Condition:** Future-Self Look (participants can see apparatus when making choice - 2 choices (today’s and tomorrow’s tool)

**Study 2:**

**Participants:** 21, 3-year olds (M = 43.5 months)

**Condition:** Future-Self Away – (participants turned away from apparatus when choosing) - 2 choices again

**Study 3:**

**Participants:** 24, 3- to 4-year olds (M = 47.7 months)

**Condition:** Future-Self Away – 3 choices (1 novel distractor)

**RESULTS:**

Children passed all tasks when they had to choose between today’s and tomorrow’s tool (Studies 1 & 2), but failed when an additional distractor was included (Study 3).

The fact that children failed in Study 3 suggests that children may not have necessarily chosen the right tool in Studies 1 & 2 by projecting themselves in the future. They may well have selected it as it was simply different (i.e., not today’s tool).

![Table 1. Mean number of correct answers across the three games in Experiments 1, 2 and 3](image3)

**Conclusions and Future Directions**

1. The results of Studies 1 & 2 appear to suggest that episodic future thinking may be appearing even at 3 years. This is an earlier age to that reported by Russell et al. (2010).
2. Nevertheless, there remains the possibility that children are selecting the correct item for tomorrow’s use without recruiting episodic future thinking.
3. The next step is to consider the details of the design of all three games so that each game is only solvable on the basis of mentally projecting the self in the future.

**REFERENCES:**


