



Young Children Benefit from Extra Time when Performing Tasks Requiring Inhibitory Control

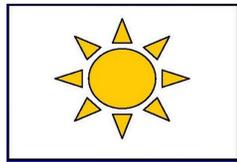
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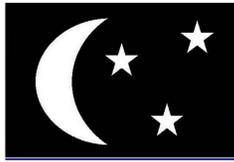
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SUMMARY

Children of 3-4 years err on the Day-Night Stroop-like task (Gerstadt, Hong, & Diamond, 1994), which requires that they say 'Day' when shown a black card with a moon and stars and 'Night' when shown a white card with a sun (review: Montgomery & Koeltzow, 2010).



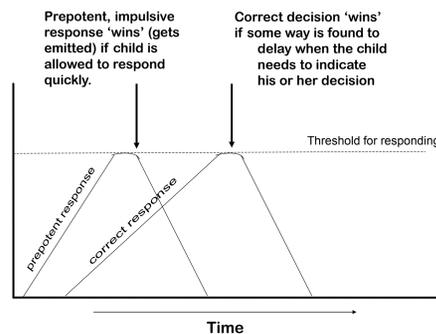
White card:
Say "Night"



Black card:
Say "Day"

However, they succeed when the tester chants a ditty: "Think about the answer; don't tell me" after showing the stimulus card but before the child can respond (Diamond, Kirkham, & Amso, 2002).

Diamond et al. (2002) credited this to the ditty imposing a delay between stimulus and response. As Simpson, Diamond, et al. (2012) showed, the simple passage of time (a few moments) can enable the prepotent response to subside and the considered response to rise to the response threshold:



There is an alternative interpretation, however. The ditty contained task-relevant content, reminding children to think before answering. Perhaps that reminder is why children did better in the Ditty Condition.

Here, we tested between those two interpretations. One group of children was tested with the standard condition, one group with the original ditty, and one group with the ditty: "I hope you have a nice time; I like you."

HYPOTHESES TESTED

The passage of time between stimulus presentation and response helps children perform better. The ditty content is irrelevant.

If this hypothesis is correct, performance should be comparable in the two ditty conditions.

Children succeeded with the original ditty ("Think about the answer; don't tell me") because it provided task-relevant info. If this hypothesis is correct, performance should be better when the ditty is relevant to the task than when it is irrelevant ("I hope you have a nice time; I like you").

PROCEDURE

Children were given a maximum of 3 practice sets.

Children were tested on 16 trials presented in pseudo-random order: white (w), black (b), b, w, w, b, w, b, b, w, w, b, w, b, b, w

In each ditty condition, the tester first turned over a card to reveal the sun or moon-&stars and then chanted the ditty. Children waited until the chanting was over before responding.

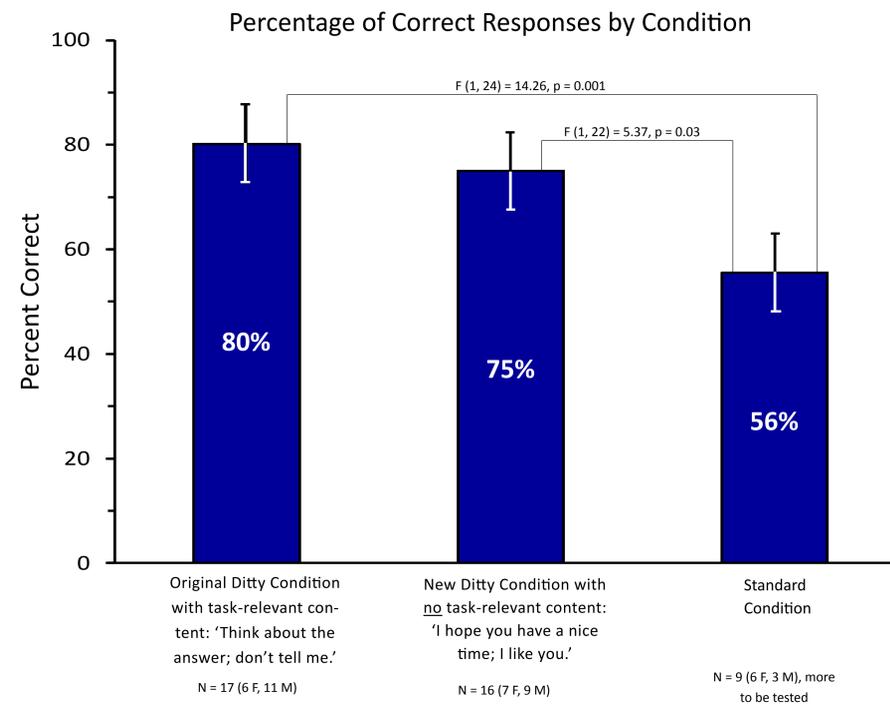
TAKE-HOME MESSAGE

Performance of children in the two ditty conditions was closely comparable, and significantly better than in the standard condition. Ditty-content was absolutely irrelevant.

Finding a way to help preschoolers very briefly wait before responding improves their performance.

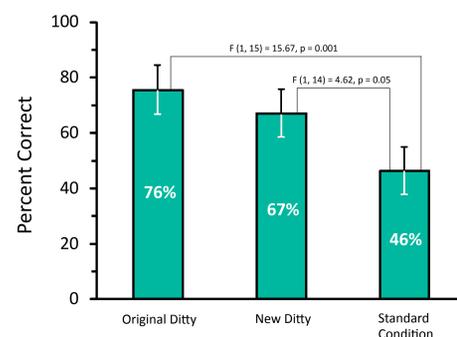
RESULTS

Performance was comparable in both ditty conditions. Performance in both was significantly better than in the standard condition.

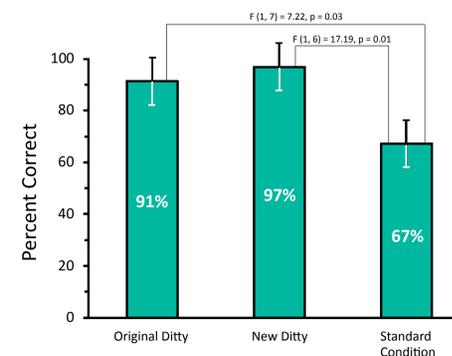


The Pattern of Performance was the Same at Both Ages Tested.

4-year-olds: Accuracy by Condition
3.8 - 4.4 years (45.6 - 52.8 months)



4½-year-olds: Accuracy by Condition
4.5 - 4.8 years (54 - 57.6 months)



DISCUSSION

Our findings are consistent with findings on other tasks showing that having young children briefly wait before responding improves their performance (e.g., appearance-reality tasks (Heberle & Fletcher, 1999), a Go/No-go task (Jones et al., 2003), & a Piagetian search task (Riviere & Lecuyer, 2003).

Reminding children on each trial to 'think about the answer' does not aid their performance any more than telling children to 'have a nice time.' Reminding might have helped if the working memory demands of the task were difficult for children.

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