

Assessment of Executive Function for the National Children's Study

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(Formative Project LOI 2 Quex 6)
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Abstract

This formative project has the goal of developing suitable measures of executive function skills (EF) for use in the National Children's Study with diverse children beginning at age 36 months and their parents. Specifically, the aims are to adapt and improve brief measures of a key domain of neurocognitive function by adapting the Children's Behavior Questionnaire Very Short Form (CBQ-VSF) and lowering the floor of the NIH Toolbox measures of EF. Downward extensions of the Toolbox Flanker Inhibitory Control and Attention Test and the Toolbox Dimensional Change Card Sort (DCCS) Test have been created in E-prime for computer administration with promising pilot results for appeal, low time burden (about 7 minutes for each) and validity. Figures 1 to 7 show screen shots from the two EF tasks and examples of trial sequencing or levels in these multi-level, adaptive tests. The CBQ-VSF measure of temperament has been adapted in consultation with its creators to clarify and simplify the language for use with parents

(or teachers) and also to add a new EF-specific extension. Average time to administer as a parent interview is about 7 minutes. All these EF measures have worked well with respect to training and administration with disadvantaged families tested on site in a homeless shelter and a community preschool. Future plans include a validity study to assess the reliability and validity of the new measures and, with continuing support, extension to other populations and NCS centers for further validation.

Figure 1
Flanker-Downward Extension test screen example
Easiest level: color + border + space
congruent trial

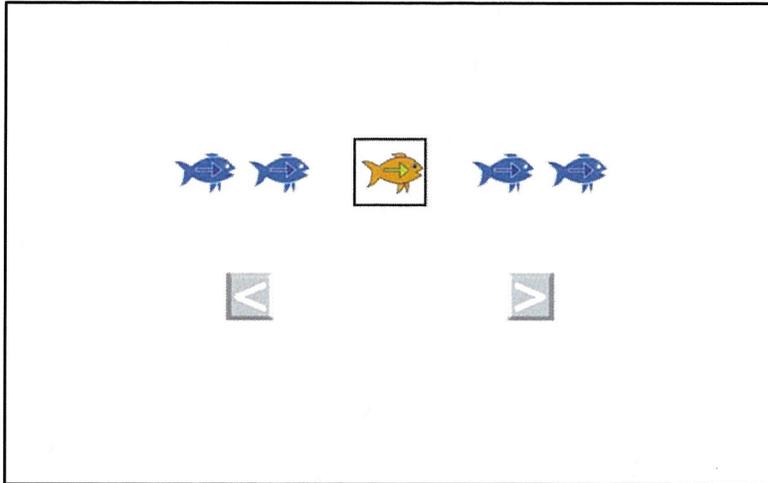
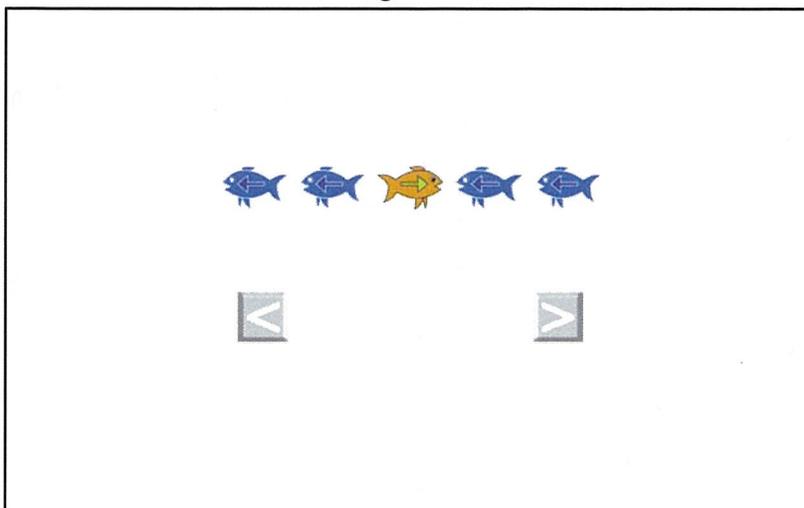


Figure 2
Flanker-Downward Extension screen example
color contrast only
incongruent trial



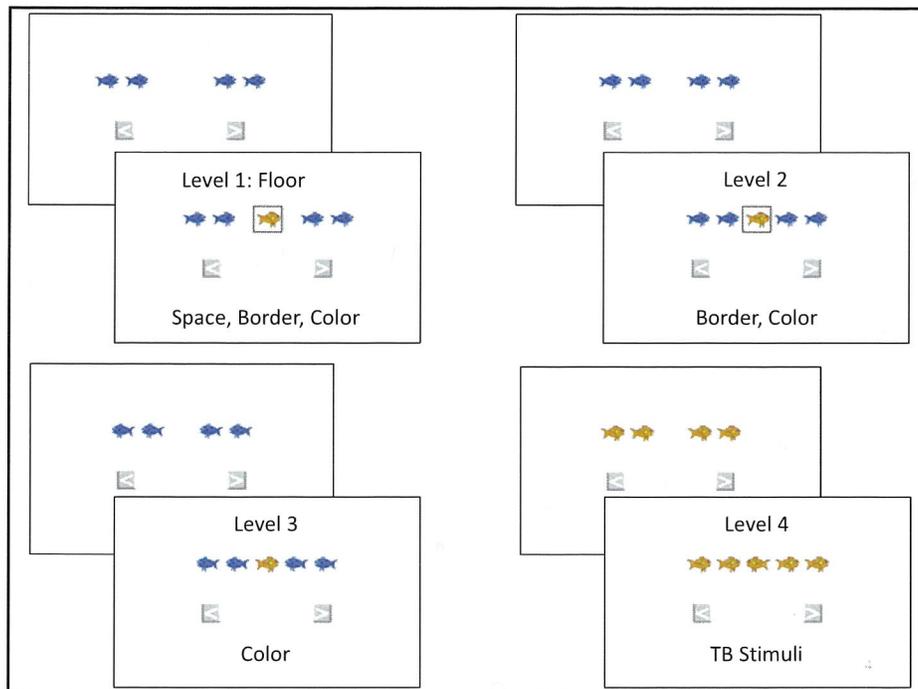
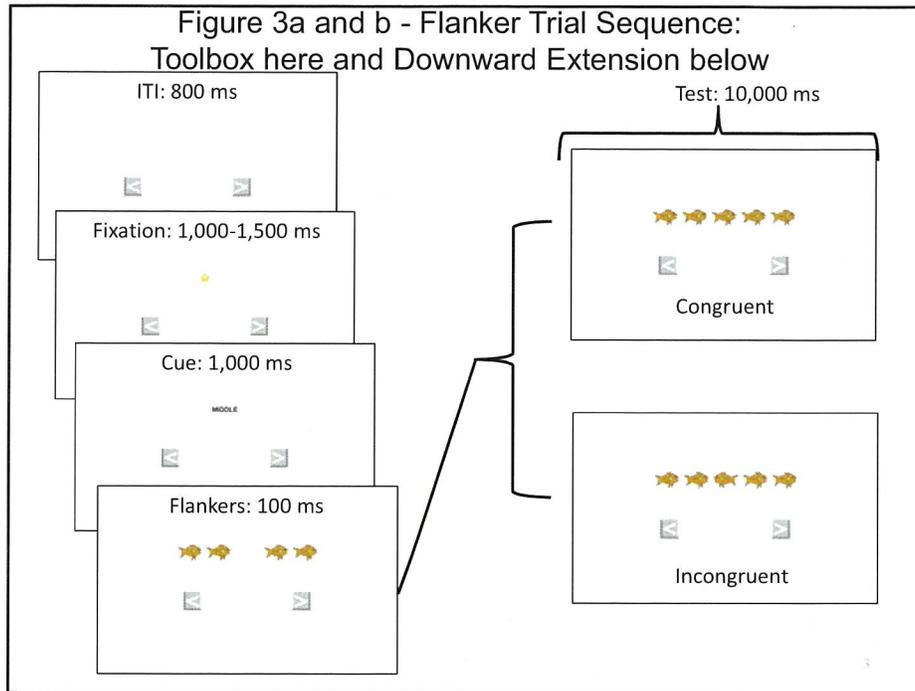


Figure 4
Toolbox DCCS instruction screen example

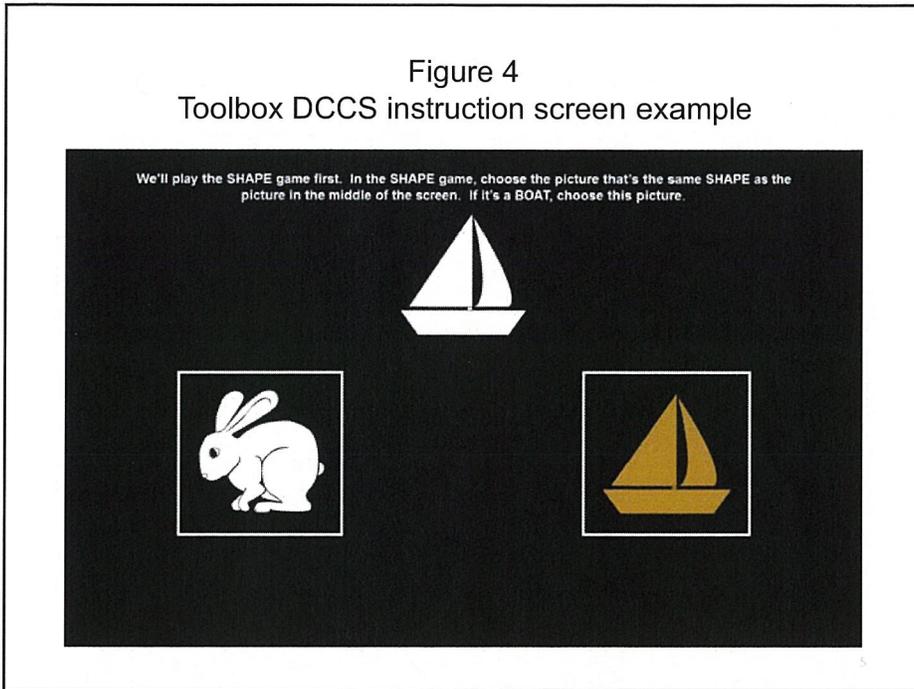


Figure 5
DCCS-Downward extension Instruction Screen
Easiest level example

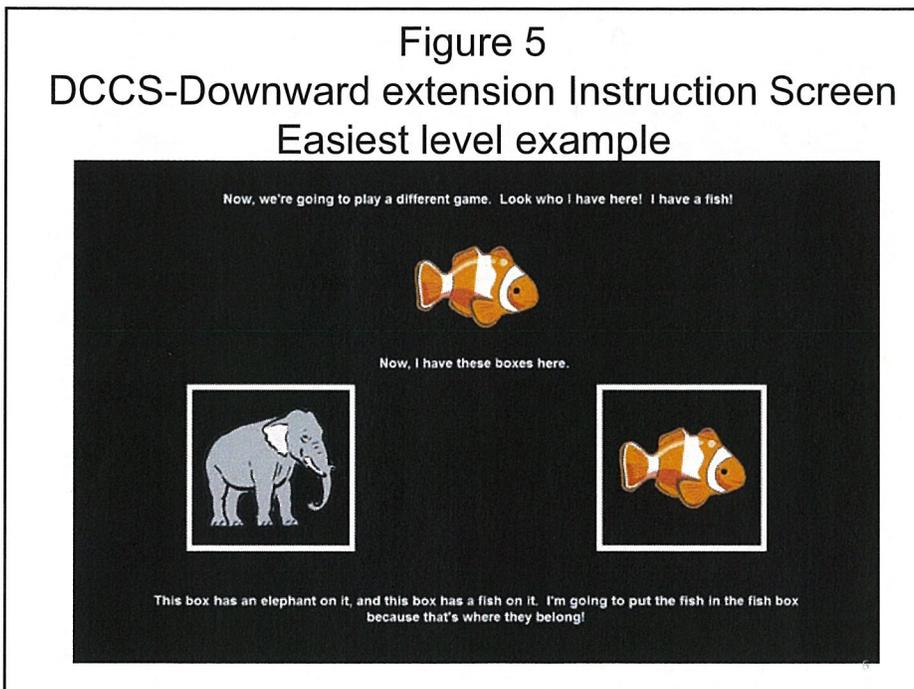
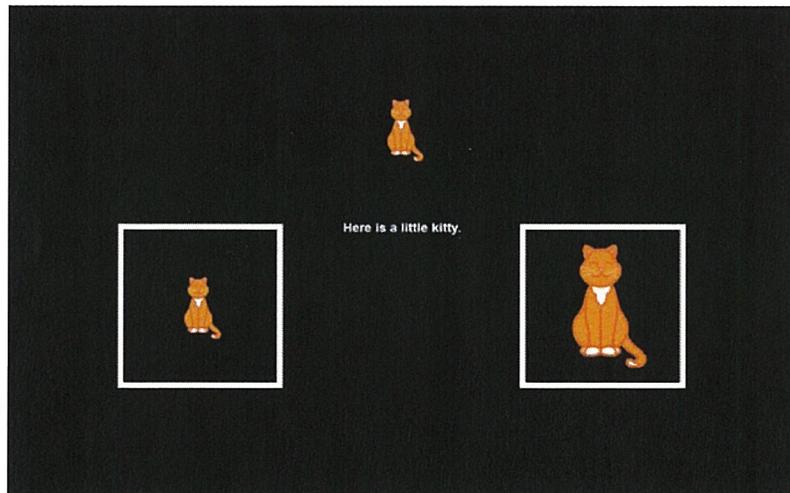
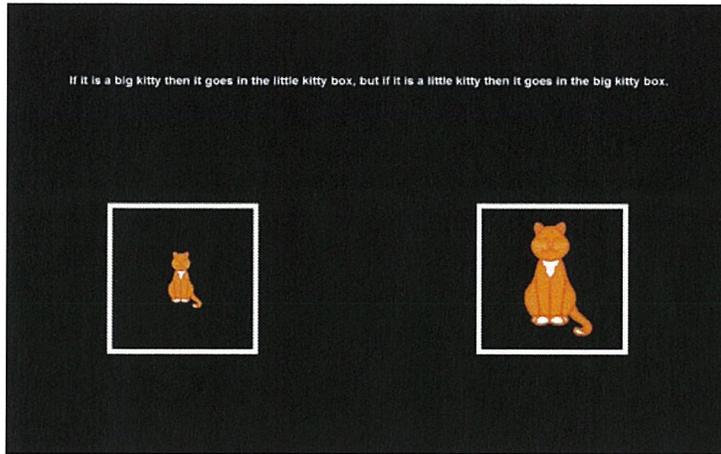


Figure 6a and 6b
DCCS Downward Extension Example Screen
Example of Reverse Two Rule Sorting



Test: 10,000 ms

Figure 7a and 7b
DCCS Downward Extension Example Screen
Separated Color and Shape Dimensions

