The effects of father-child conversational balance on child executive function

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Background

Executive function (EF) is a critical component of cognitive development and an important predictor of later achievement.

Previous work conducted by the TCD Infant and Child Research Lab demonstrated that greater balance in conversational turn-taking between fathers and their children at age two was associated with higher child EF at age four.

Back-and-forth exchanges may engage children's developing EF skills, and provide opportunities to practice these emerging abilities.

Shared book-reading is an important context for father-child language interaction and the grammatical properties of children's books influence parental language.

Picture books may elicit more back-and-forth conversation between parent and child.

Working memory	Children must relate incoming verbal information to previously heard speech
Inhibitory control	Children must wait their turn to speak
Cognitive flexibility	Children must continuously switch from the role of speaker to listener

Method

15 three-year-olds (8 females; *M* = 38.61 months, *SD* = 2.34) and their biological fathers (*M* = 39.53 years, *SD* = 6.95) have taken part in the study to date (expected *N* = 60).

Child EF was measured at baseline using a version of the Dimensional Change Card Sort and a Stroop-like task (Day/Night task or Grass/Snow).

Dyads were randomly allocated to a light-text (Hug) or heavy-text condition (Kipper book) and instructed to read the book together.

Child EF was assessed again directly following the book-reading interaction.

Child receptive and expressive language abilities were measured using the Bayley Scales of Infant Development-III.

Information on fathers' education, book-reading practices and paternal EF was collected via questionnaire.

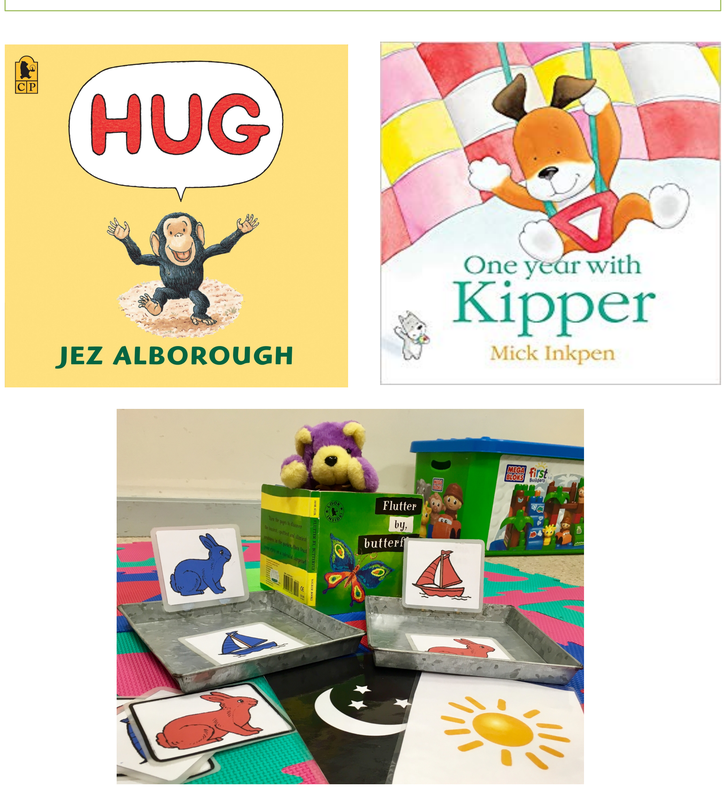

Figure 1. Test stimuli

Hypotheses

1. A light-text book condition will elicit greater balance in father-child conversational turn-taking compared to a heavy-text book condition.

2. Conversational balance will be associated with child EF such that higher conversational balance is associated with higher EF.

Language variables

Transcripts of the book-reading interaction were prepared and analysed using CLAN.

Balance in child-father conversational turn-taking (MLT ratio), as well as fathers' vocabulary diversity (VOCD) and language complexity (MLU) were calculated.

An MLT ratio closer to 1 indicated that fathers and children were affording each other equal opportunities to speak.

Preliminary Results

Preliminary analysis indicates an effect of book-type on conversational balance.

An effect on child EF has yet to be determined.

Light-text condition	Greater MLT ratio
Heavy-text condition	Lower MLT ratio

Implications

As there can be wide individual differences in EF during the preschool period, understanding how to promote the aspects of parent-child interaction which enhance development of these skills is important.

This study contributes to the emerging literature demonstrating the importance of fathers for development.

Shared book-reading may be an important context in which to promote conversation between fathers and their children, which may have implications for child EF development.

Book-type appears to affect conversational balance, demonstrating that this feature of father-child interaction is amenable to intervention.

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