Animation can affect information that children include in storytellings

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Introduction

- The quality of children's stories will vary depending on how stories are elicited.
  - Children tell better stories (e.g., more story information; better use of reference) when retelling stories they heard than when telling stories from pictures (Pearce, 2003; Schneider & Dubé, 1997, 2005).
  - Other differences (e.g., whether pictures are in colour or black and white) do not make a difference (Schneider, Rivard, & Debreuil, 2011).

- It seems possible that animated stories might be easier for young children to understand and tell back.
  - The animation could facilitate understanding of the action that must be inferred with still pictures
  - One study found that children tell stories with more words, longer utterances and more causal connectives when telling a story from an animated film than from pictures taken from the animation (Rice & Roudebush, 1989).

- However, we do not yet know whether stories would differ with regard to content, such as whether highlighting specific story information in animations affects whether that information is included in children's stories.

Research Question

- Are young children more likely to provide story information that is highlighted in an animation, as compared to still pictures of the story?

Methods

Participants
- 21 children (12 girls, 9 boys); mean age 4.76 years (SD .36), range 4.04-5.45
- Maternal education ranged from 12-24 years (M=16.9, SD 3.46)
- No known or suspected developmental delays

Materials
- Story A1 from The Edmonton Narrative Norms Instrument (ENNI)-Schneider, Dubé, & Hayward, 2006
  - Still pictures (see below)
  - Animated version based on the picture story, using Shockwave Flash Player, in which key actions were animated
  - Because the animated version is in colour, the pictures of story A1 were coloured to match the animation

Procedure

- Children were seen on two occasions, 2 weeks apart
- In one session, one version was presented, followed by the other version in the other session
- Both versions were presented on a computer
- For each version, the story was told to a naïve listener who could not see the computer screen.
- The order of versions was counterbalanced.
- Sessions were audio-recorded, transcribed and scored for mention of seven highlighted information units:

  - Ball bouncing
  - Ball goes in water
  - Reaction of elephant
  - Water splashed
  - Giraffe swimming
  - Giraffe gives ball to elephant
  - Giraffe's ears wiggling *or* he shivers

- Transcription reliability (word-by-word) using 12 of the 42 transcripts was 93.25%
- Story grammar reliability (point-to-point) was 94.17%

Data Analysis
- A repeated measures ANOVA was conducted with Condition as the within-group variable and Order as the between-group variable (to ensure that order did not affect the results).

Results

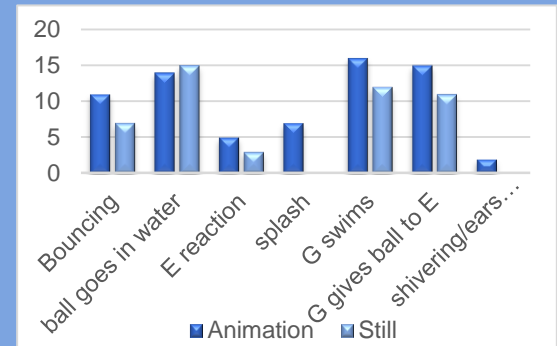**Means and Standard Deviations for number of highlighted units:**

Mean

SD

Animation:

3.33

Numbers of children providing each highlighted unit

Discussion

- The 4-5-year-old children in this study provided more information that had been highlighted in the animated version than when they told the story from still pictures.

- However, some of the differences were with information that was not essential to the story (splashing, ears wiggling).

- A previous analysis (Anderson et al., 2012) found no differences in story grammar scores, which count information considered essential for a good story (Stein & Glenn, 1979).

- Thus it appears that animation affected children's inclusion of details in their stories, but children were able to tell stories of equal quality as measured by story grammar in both conditions.

- Previous research has shown that the quality of children's stories is affected by whether story stimuli were visual or oral (Schneider & Dubé, 1997, 2005).

- The current study indicates that for two visual conditions, stories will differ in detail but not in overall quality, at least for 4- and 5-year-old children with typical language development.

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