

Introduction

Narrative discourse can be conceptualized as a method for relaying events that unfold over time or space and typically includes a beginning and an ending. Heath (1986) described four forms of narrative discourse: eventcasts; recounts; accounts; and stories. Eventcasts are narratives that explain a scene of activities and may be considered the most rudimentary form of narrative, recounts are verbal reiterations of an event, accounts are spontaneous sharing of experiences, and stories are fictionalized, highly structured forms. Of interest in the current study is narrative discourse production, specifically eventcast production in healthy older adults.

Research suggests that any comprehensive assessment of structured discourse of persons with and without brain damage should include a measure of the ability to relay main events (Capilouto, Wright, & Cranfill, 2003; Capilouto, Wright, & Wagovich, 2005; Nicholas & Brookshire, 1995). To quantify this ability, clinicians frequently ask individuals to describe pictures and then analyze the resulting language sample for within sentence processes such as lexical diversity and between sentence processes, such as proportion of main events relayed (Capilouto et al., 2005; Wright, Capilouto, Wagovich, Cranfill, & Davis, 2005). Common stimuli for such tasks include the black and white line drawings from Nicholas and Brookshire (1993) and the 'Cookie Theft' drawing from the Boston Diagnostic Aphasia Exam (BDAE, Goodglass & Kaplan, 1983). Previous work from our lab suggested that participants frequently omitted the same pictured events. We hypothesized that the detail of line drawings might obscure certain details due to the absence of color.

The present study was undertaken as a preliminary investigation of the influence of picture stimulus on identifying and expressing the interrelationships between discrete actions or ideas in pictures. Specifically, we wanted to determine if color line drawings versus black and white line drawings impacted the quality and quantity of narrative discourse samples.

Methods

Subjects met the following inclusion criteria: (1) aided or unaided visual acuity within normal limits, by report, (2) aided or unaided hearing acuity within normal limits, by report, (3) negative history for cognitively deteriorating conditions such as Alzheimer's or Parkinson's; and, (4) MMSE score within normal limits. Eighteen healthy adults (M = 9, F = 9) participated in the study. The age of participants ranged from 42 years, 1 month to 58 years, 8 months (M = 50.4, *sd* = 5.5). All participants had some education beyond high school and two were retired. The study met all the requirements of the University of Kentucky's Institution Review Board for the protection of human subjects. Subjects attended two sessions, spaced no more than two weeks apart. For each session, participants were shown two picture scenes and two pictures sequences, individually, and instructed to tell a story about what was going on in the picture(s). Order of black and white versus color as well as order of pictures (single versus sequence) were randomized and counterbalanced across participants and sessions. Variables related to the quality and

quantity of the narrative discourse sample included proportion of main events relayed, lexical diversity (*D*; Malvern & Richards), lexical errors, C-unit errors and word count.

Results

The proportion of main events relayed in response to color versus black and white approached significance ($p = .057$). However, the impact of stimulus type was significant ($p < .001$) confirming our previous findings that subjects relayed a significantly greater proportion of main events for sequential stimuli as compared to single pictures, regardless of color condition. The interaction between color and stimulus type was not significant ($p = .48$). Results indicated no significant difference in lexical diversity (vocabulary) for color versus black and white pictures ($p = .27$); however, the impact of stimulus type approached significance ($p = .054$). Both lexical errors ($p = .13$) and C-unit errors ($p = .65$) were unaffected by color type; however, the impact of stimulus type did approach significance ($p = .058$) for lexical errors; a greater number of errors were produced for single color pictures as compared to the sequential color stimulus and both black and white conditions. The impact of color versus black and white on word count was significant ($p < .05$); participants produced longer samples, as measured by total words, in response to black and white as compared to color stimuli.

Discussion and Conclusions

The purpose of this study was to determine if color line drawings versus black and white line drawings impacted the quality and quantity of the narrative discourse sample. Results suggested that only certain linguistic measures were impacted by the presence or absence of color. For these participants, word count was significantly affected by the color condition; subjects used more words to describe black and white sequential pictures as compared to all other conditions. This was a surprising finding as we had hypothesized that color would improve all measures by lending a degree of detail we judged absent in the black and white version of the stimuli. Of particular interest was the finding that the proportion of main events relayed approached significance. However, the greatest number of main events was relayed in response to the black and white sequential pictures as compared to all other conditions. It may be that a larger sample size is necessary to gain a clearer picture of the impact of color on narrative discourse production as significant variability was noted across language samples. Moreover, it may be important to look at this question from a life-span perspective as the inclusion of color may vary depending on the age of subjects.

References

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