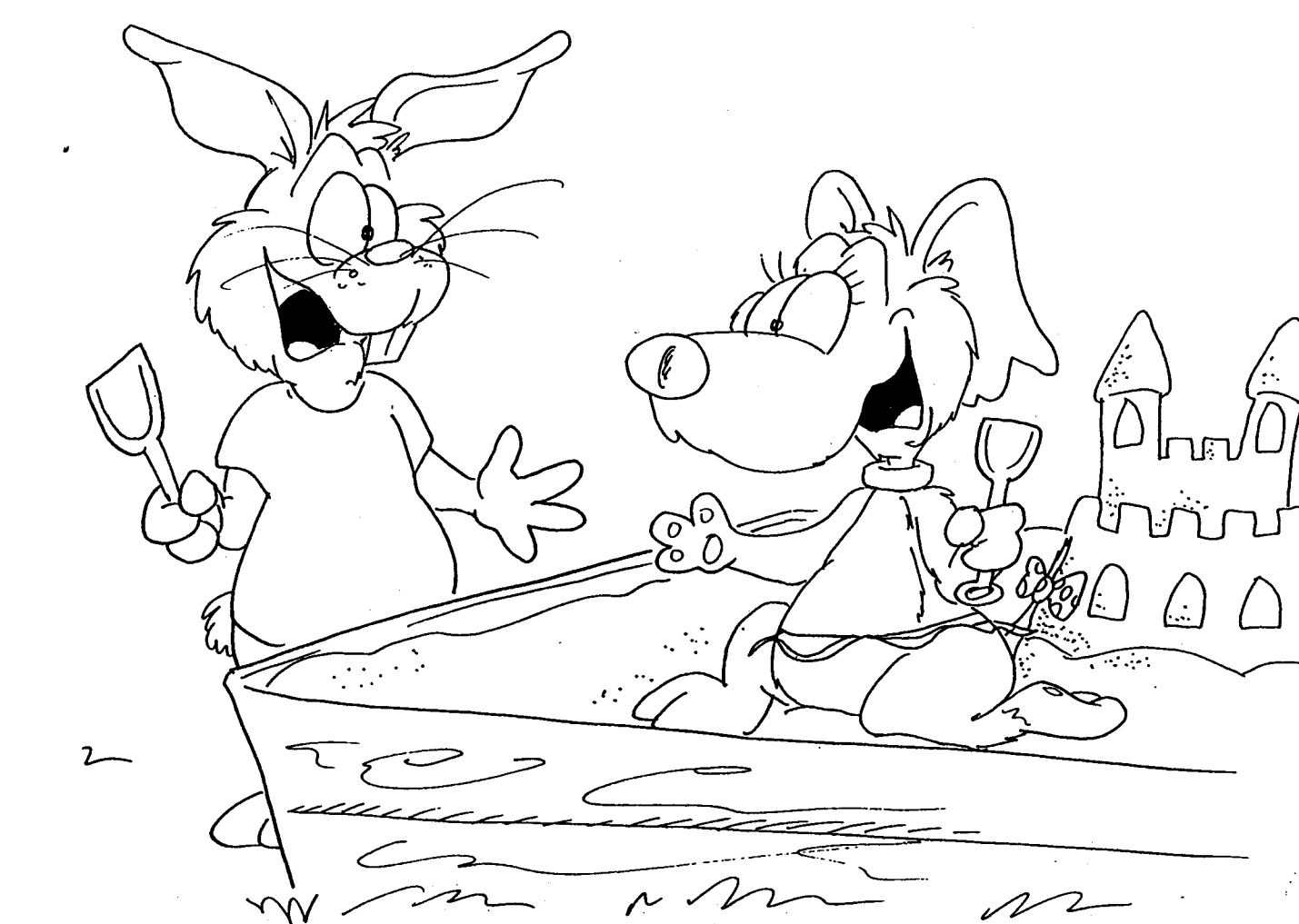


Main characters, Set A



Main characters, Set B

Measuring Referring Expressions in a Story Context

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We developed a measure of referential cohesion for use with the Edmonton Narrative Norms Instrument (ENNI; Schneider, Dubé, & Hayward, 2003)

The measure, First Mentions, can be used to evaluate the referring expressions that a child uses to introduce characters and objects when telling a story

What are referring expressions?

Referring expressions are linguistic forms used to refer to animate beings (*the elephant, Ella, she*), objects (*the train, it*), and other entities such as places (*the park, there*) and concepts (*an idea*).

They can be considered **adequate** if they are appropriate for the listener's knowledge, shared physical context, and the preceding linguistic context.

For example, an indefinite noun phrase such as *an elephant* or a proper name is appropriate for a new character in a story in the absence of a shared physical context, while *the elephant* or *she* would only be appropriate for mentioning the character later on in the story.

Why develop a measure of referring expressions?

Young children frequently introduce referents in a confusing way, often using pronouns such as *she*, which are adequate only if the speaker can presuppose that the listener already has the referent in his or her consciousness.

Inadequate referential cohesion can be very confusing for the listener.

The ability to introduce referents adequately develops gradually through the early school years.

Schneider and Dubé (1997) found that Kindergarten and Grade 2 children have more difficulty with first mentions of referents than with subsequent mentions of the referents.

Preliminary analyses of ENNI data from 4, 6, and 8 year olds indicated that first mention usage distinguished among age groups and between children with and without language impairments to a greater degree than did subsequent mentions (Schneider, 2001a, 2001b).

To date there is no normed narrative instrument that includes a measure of referential cohesion.

We decided to develop a measure of the first mentions of referents because:

- first mentions appeared to discriminate well among age and language groups, and
- the rules for adequate first mentions are more straightforward than for subsequent mentions

Methods

Participants: the ENNI sample

- 377 children, ages 4-9
- 50 children with no known disorders per age group (Typically Developing or TD)
- Half boys, half girls
- ~15 children with specific language impairment (SLI) per age group
- Referred by community SLPs
- Gender left free to vary (more boys)
- All children spoke English as their first language
- Socioeconomic status:
 - Wide range across the sample
 - Age and Language status groups do not differ on SES
- Ethnicity was left free to vary; all Statistics Canada visible minority groups are represented in the sample

Materials

- The ENNI stories were developed to control for referential complexity
- Each of the 2 story sets (containing 3 stories each) has two main characters in the first story, differing in:
 - type of animal
 - gender
- The second story introduces a third character
 - Same type of animal as one of the main characters but opposite gender
- The third story introduces a fourth character
 - Same type of animal again but same gender
- The pictures were drawn by a professional cartoonist

Procedure

- All children were seen individually in their schools/preschools/daycares
- Each child viewed the first story and retold it to the examiner
- The examiner held the storybook so that she could not see the pictures as the child told the story
- Instructions emphasized that the examiner could not see the pictures
- The procedure was repeated for each of the 6 stories
- The two story sets were counterbalanced

Scoring

- Expressions referring to all 8 characters were scored for adequacy
- In addition, 6 objects (3 from each set) were selected for scoring on the basis of preliminary scoring: they were mentioned by 90% of 8 year olds
- The actual noun used to refer was not important; the focus was on whether the expression indicated to the listener that a new referent was being introduced

A 3-point scoring for First Mentions was devised:

3 points = fully adequate for introduction of a new referent

e.g., an elephant, Ellie; a ball

2 points = not fully adequate for referent introduction, but can be understood by the listener (with some work)

e.g., the elephant, that elephant; the ball

1 point = fully inadequate for referent introduction

e.g., she, they; it

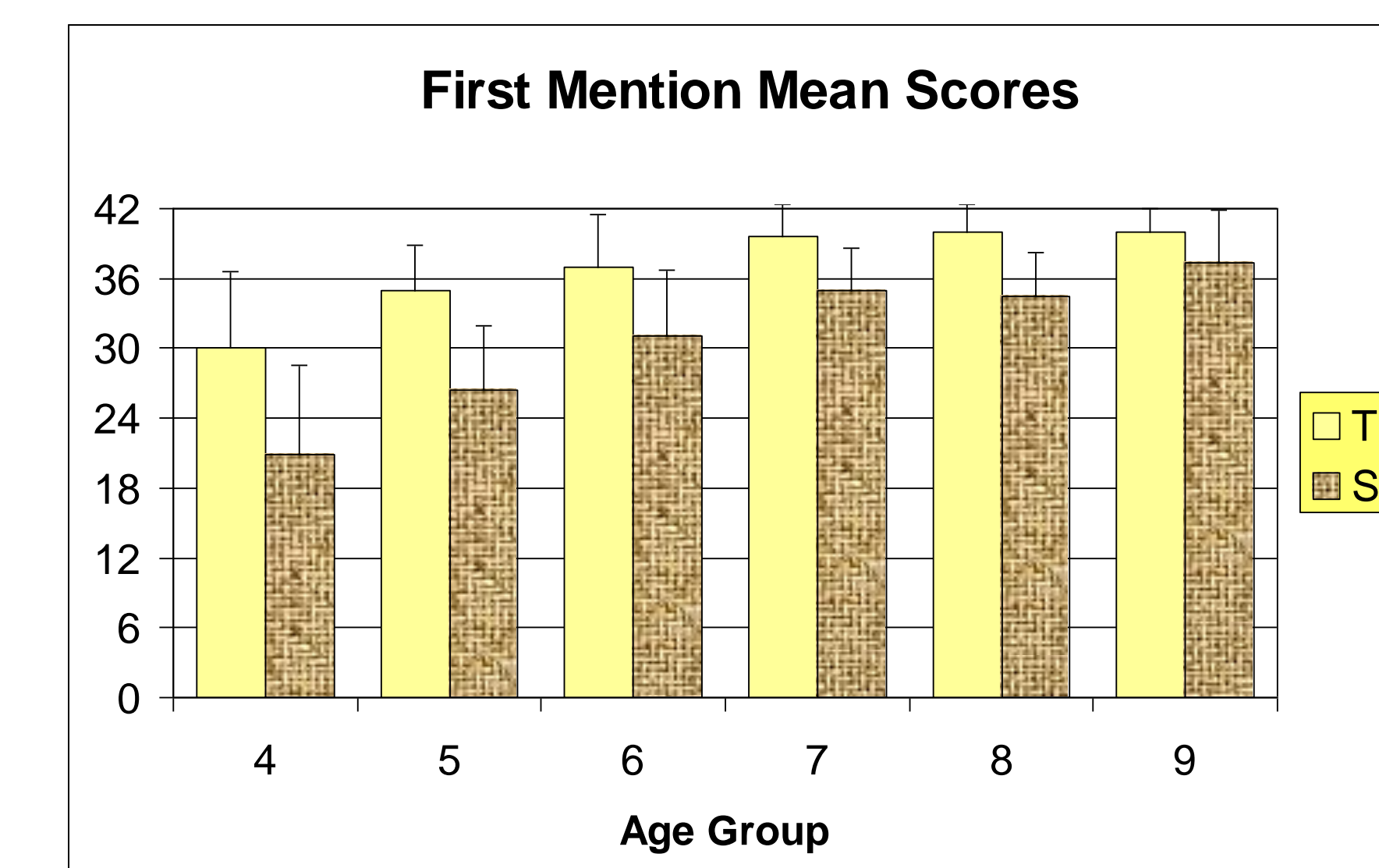
Each child's FM score was the total of points for all 14 referents

Reliability

20% of the data were scored by a second scorer

Interscorer reliability: Cohen's kappa = 85%

Results



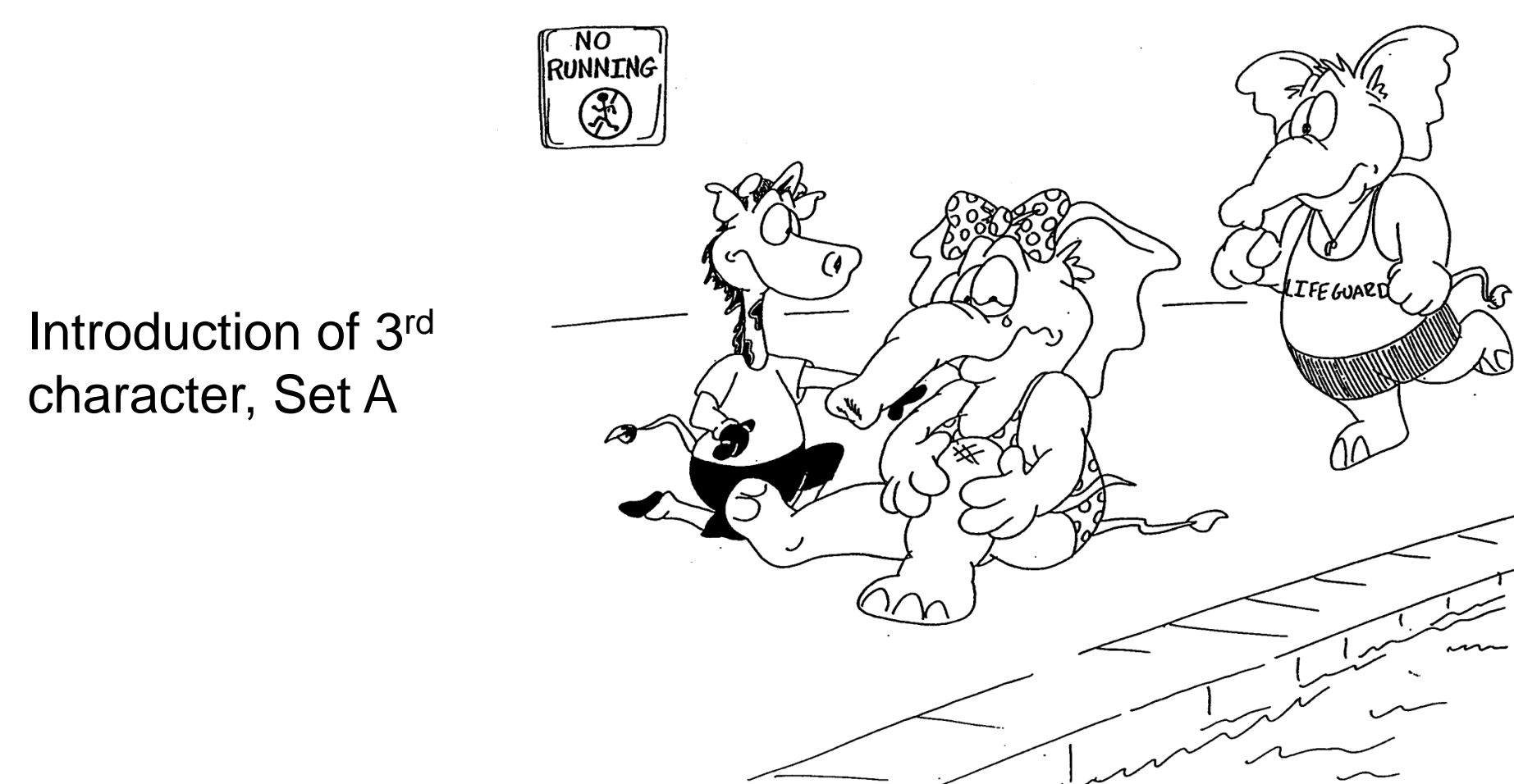
To see if a developmental trend was present, trend analysis was performed. Data for the SLI group was weighted so that the SLI data would make up 7.4% of each age group to match estimated population prevalence (Tomblin, et al., 1998).

Trend analysis results:

- Significant linear trend, $F [326] = 177.35, p < .001$
- Significant quadratic trend, $F [325] = 112.96, p < .001$ (due to a ceiling effect for the 3 oldest age groups)
- To check for differences between TD and SLI groups within each age group, t-tests with Bonferroni correction were performed. Groups were significantly different at each age except 9 year olds ($ps < .001$ for all significant comparisons; $p = .11$ at age 9).
- Discriminant analysis was performed using z-scores for ages 4-8 (the age groups for which significant group differences were found). The FM variable discriminated as follows: Specificity 81.6%; Sensitivity 73.1%; 79.8% correctly classified.

Conclusions

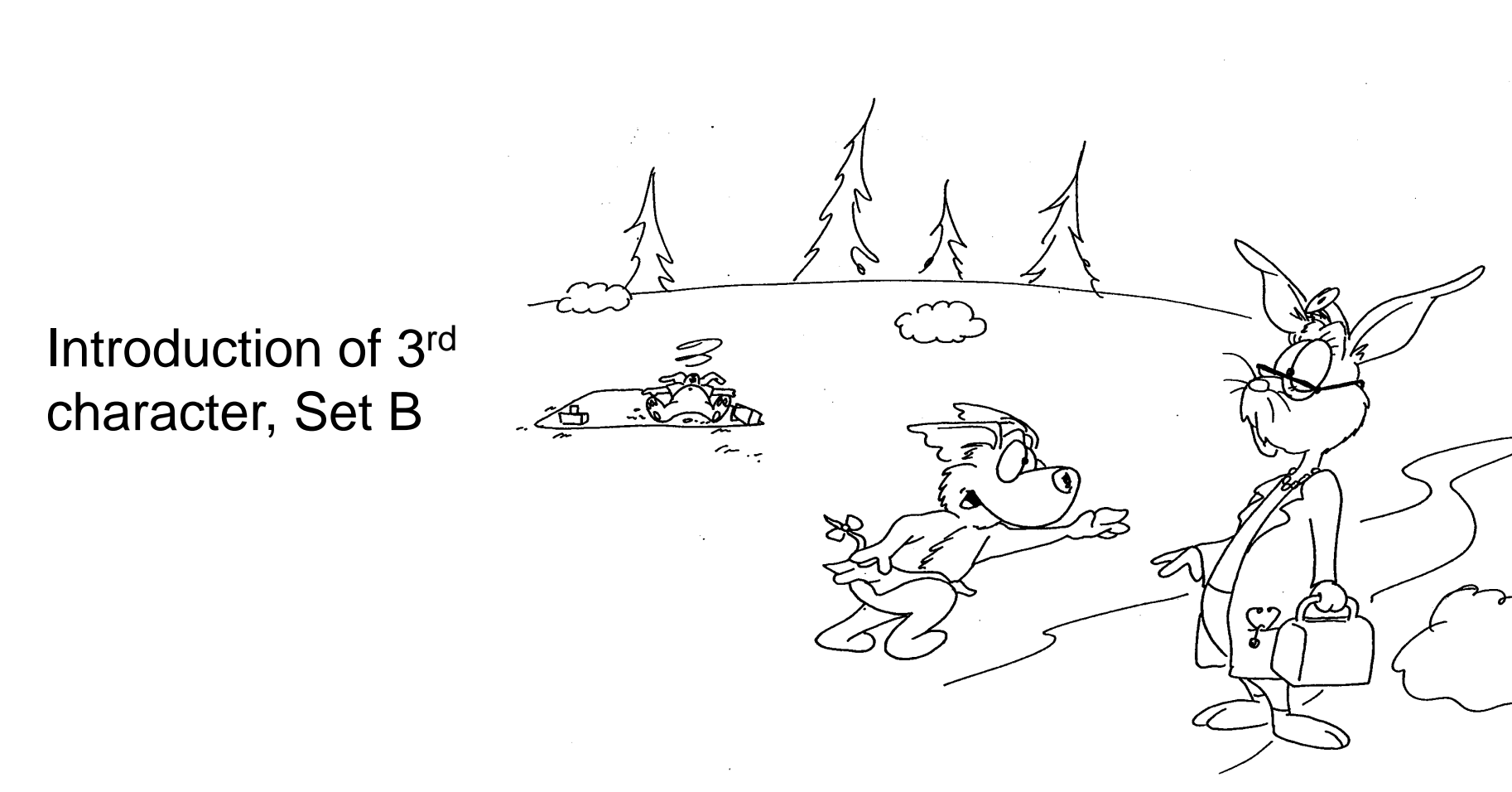
FM analysis is a useful tool for identifying children with SLI who are having difficulty with referential cohesion.



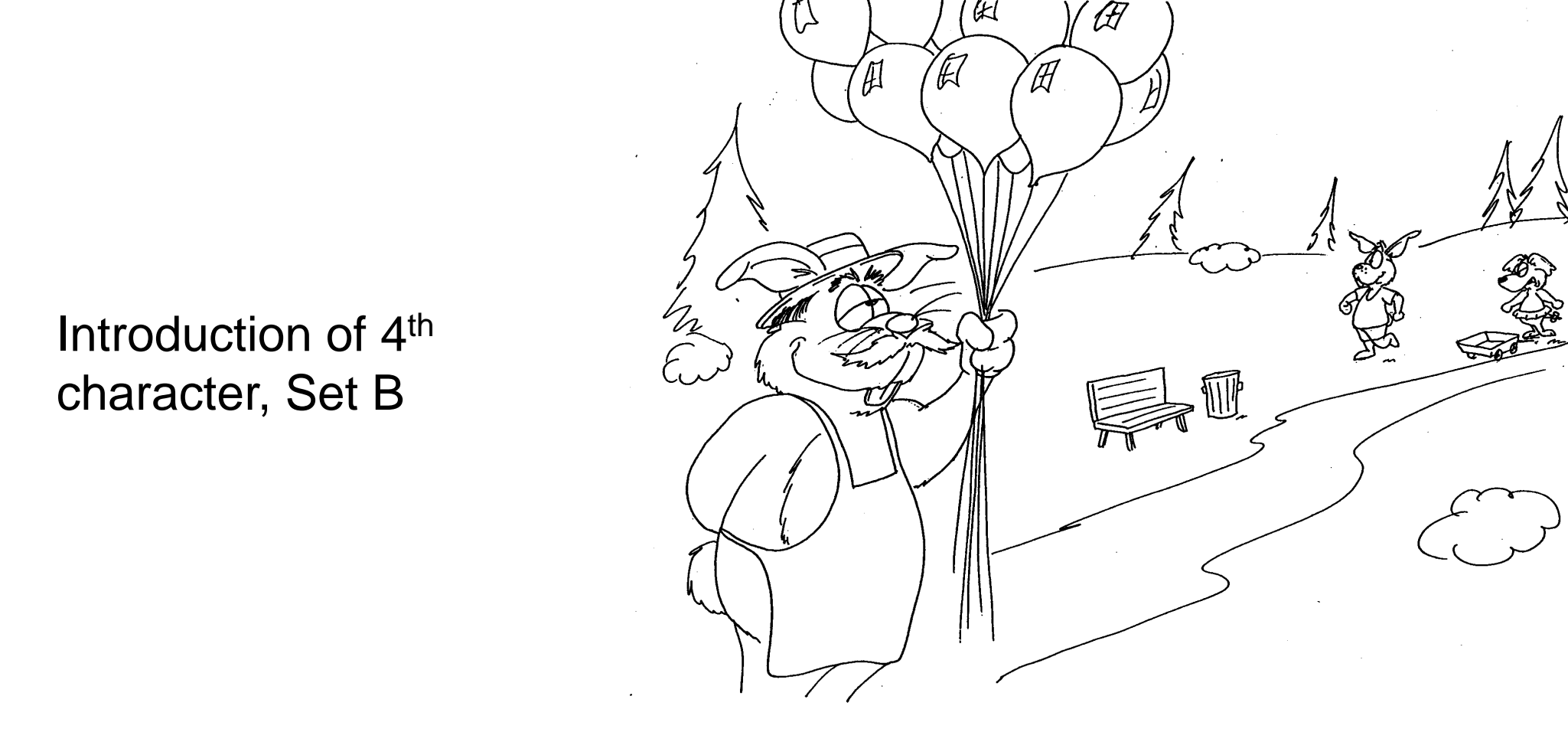
Introduction of 3rd character, Set A



Introduction of 4th character, Set A



Introduction of 3rd character, Set B



Introduction of 4th character, Set B