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THE FUNCTION OF ASPECTUAL CONFIGURATIONS IN THE CONVERSATIONAL AND NARRATIVE DISCOURSE OF FINNISH, POLISH, AND AMERICAN CHILDREN[1]

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1. INTRODUCTION

1.1 Purpose

Previous research has shown that there is a dramatic development in narrative skills between the ages of 2 and 7 (see reviews by Berman, 1988 and Kemper, 1984). The developmental changes occur at the macrostructural level (e.g., Applebee, 1978; Stein & Glenn, 1979; or Sutton-Smith, 1981) and at the microstructural level (e. g., Bamberg, 1987 or Slobin & Bocaz, 1989). Thus, children acquire the capacity to tell a story which has a plot supported by a narrative structure, and they can organize a set of clauses which reveal this structure.

As Applebee (1978) has shown, the two-year-old child is most likely to tell a story with a "sequence" structure, i.e., there is a topic or a central character, but "events have a superficial sequence in time" (p. 60); e.g.,

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Little boy played. He cried. He's all right. He went home... (D. W. 2; 10 from Pitcher & Prelinger, 1963, pp. 30-31). It is clear that the story is about a little boy, but it is not clear if the boy played first and cried later, or if he was crying while he was playing, etc. By five years, children are likely to produce what Applebee called 'focused chains' which contain a combination of a central core and well formed sequences; e.g., *Davy Crockett he was walking in the woods, then he swimmed in the water to get to the other side. Then there was a boat that picked him up...* (K. P. 4; 9, Pitcher & Prelinger, 1963, p. 83). This story combines backgrounding with foregrounding; but even here, the flow of the story line is irregular with the clause, *then there was a boat,* somehow jammed into the sequence of events. At the microstructural level of analysis, there is a problem with both of the story segments given above, and the problem has a lot to do with the concept of aspect. The purpose of this paper is to determine how aspect functions at the discourse level of child language during the period of development from 2 to 7 years.

1.2. Aspect and Aktionsart

The concept of aspect has two dimensions. Aspect (or viewpoint aspect) concerns the perspective that the speaker takes with regard to some situation. The contrast in perspective is between internal and external. When the speaker takes an internal perspective, such situational properties as ongoing or incomplete action are salient for coding, and when the speaker chooses an external perspective, properties such as complete or punctual become available. Viewpoint aspect is very likely to be coded in the morphology of the languages of the world (e.g., see Bybee, 1985; Dahl, 1985; or Majewicz, 1985). It is coded in English by the distinction between progressive versus non-progressive (or simple) verb forms, in Polish by contrast between imperfective and perfective, and in Finnish by a diffuse network of mechanisms including the partitive versus accusative case contrast, the derivational morphology of the verb system, and nonfinite verb forms (see Heinämäki, 1983 and Kangasmaa-Minn, 1983).

The second dimension is aktionsart (or lexical or situational aspect). Aktionsart has to do with the structure of predicates. The most influential theory of aktionsart was initially articulated by Vendler (1967) and later shaped by Dowty (1979) and others. Regardless of the specific theoretical position concerning the structure of predicates (e.g., Foley & Van Valin, 1984), three distinctions are critical. A predicate is dynamic if it involves action, other it is stative, e.g., to know. Given a dynamic predicate, it is telic if it involves a natural terminal point or limit, and it is atelic (or an activity) if it does not, e.g., to swim. Given a telic predicate, the relationship between the starting point and the terminal point is important. If these points are coterminous, the predicate will be

called an achievement, e.g., to notice, and if not, an accomplishment, e.g., to build (to use Vendler's labels). For any research concerning discourse, the distinction between telic and non-telic (i.e., atelic & stative) is paramount.

The first clauses in Sentences 1a-3b demonstrate how aspect and aktionsart interact in the three target languages. Viewpoint aspect is external for Sentences 1a-3a and internal for Sentences 1b-3b. The aktionsart is telic in Sentences 1a & b and 3a & b, and it is atelic in 2a & b. In order to simplify this presentation, tense was held constant in the past form. In Sentence 1a, external perspective is established in English with the simple past *built,* in Polish with the perfective verb form *z-budowa-l-a-ø,* PFV-build-PAST-FEM-3 : S, and in Finnish with the direct object in the accusative case *talo-n,* house-ACC. In Sentence 1b, internal perspective is established in English with the progressive form *was building,* in Polish with imperfective form *ø-budowa-l-a-ø,* IPFV-build-PAST-FEM-3 : S, and in Finnish with the partitive case *talo-a,* house-PARTIT. In Finnish, it is possible to use the finite verb form *rakens-i-ø,* build-PAST-3 : S or a paraphrastic form containing the third infinitive and the inessive case *ol-i-ø rakenta-ma-ssa,* be-PAST-3 : S build-3 INF-INESS. The latter alternative conveyes the progressive meaning of ongoing action.

1a. Mary built a house, and then she destroyed it.
Marysia zbudowała dom i potem zniszczyła go.
Maria rakensi talon ja sitten hän hajotti sen.

1b. While Mary was building a house, she broke a saw.
Kiedy Marysia budowała dom, zepsuła piłę.
Kun Maria (rakensi/oli rakentamassa) taloa, hänen sahansa meni rikki.

2a. I listened to music for a while, then I read a book.
Posłuchałem muzyki przez chwilę, potem przeczytałem książkę.
Kuuntelin hetken musiikkia, sitten luin kirjan.

2b. I was listening to music when the phone rang.
Słuchałem muzyki, kiedy zadzwonił telefon.
Olin kuuntelemassa musiikkia kun puhelin soi.

3a. The balloon popped, and father jumped up.
Balon pęknął, i ojciec podskoczył.
Ilmapallo räjähti ja isä hypähti.

3b. When the balloons were popping, the children held their ears.
Kiedy balony pękały, dzieci trzymały się za uszy.
Kun ilmapallot räjähtelivät, lapset pitelivät korviaan.

The aktionsart in Sentence 2 is atelic. In English and Polish, the contrast on viewpoint aspect is established in the same manner as discussed for Sentence 1, i.e., a simple verb form *listened* versus a progressive form *was listening,* and a perfective form *po-slucha-l-ø(e)m,* PFV-listen-PAST-MASC-1 : S versus an imperfective form *ø-slucha-l-ø-(e)m* IPFV-listen-PAST-MASC-1 : S. In Finnish,

there is no specific mechanism to code external perspective in Sentence 2a, and therefore, viewpoint aspect may be viewed as neutral. However, the clause is bound by lexical means with *hetken* 'for a while'. Internal perspective is made explicit in Sentence 2b with the third infinitive plus the inessive case.

There is a natural relationship between external perspective and telic predicates and between internal perspective and atelic predicates. If the telic predicate is an accomplishment, internal perspective can be established by focusing on the action which moves the accomplishment to its terminal point. If the telic predicate is an achievement, the same kind of internal perspective is impossible, since the initial point of action coincides with the final point. Internal perspective on achievements is possible either if the focus is directed to preliminary stages as is the case for a verb like *die*, or if the focus is inserted within a series as shown in Sentence 3b. In Sentences 3a & b, the external versus internal contrast is explicitly coded in English and Polish. Again, the English coding is a simple form *popped* versus a progressive form *were popping*, and the Polish coding is perfective *pęk-n (ą)-ł -ø-ø*, pop-PFV-PAST-MASC-3: s versus imperfective pęk(a)-ø-ł-y-ø pop-IPFV-PAST-NVIR-3:P. In Finnish, viewpoint aspect is neutral in Sentence 3a, which contains the simple verb form *räjäht-i-ø*, pop-PAST-3:S. In Sentence 3b, the derivational morphology of the verb system is used to obtain a progressive form and internal perspective *räjähte-l-i-vät*, pop-PROG-PAST-3-P. In this case, internal perspective on the achievement produces an iterative meaning. (For more information on the interaction of aspect and aktionsart on these or closely related languages, see Leinonen, 1983; Markkanen, 1979; Smith, 1986; and Timberlake, 1982).

1.3. Foregrounding Versus Backgrounding

Other things being equal, some aspectual configurations tend to create a sense of a chronological sequence of events while other configurations produce a sense of simultaneity or overlap. External perspective and telic aktionsart tend to create chronological sequencing. A transition from one clause to the next will be considered dynamic if the transition produces a sequence of two events. Otherwise the transition is static. Foregrounding is likely to occur when clause transitions are dynamic, and backgrounding is likely when clause transitions are static. This distinction closely resembles the distinction made by Hopper (1979, pp. 213-216). According to Hopper, foregrounding is a process of sequencing events within the "main" story line of narrative discourse and backgrounding involves the presentation of concurrent "supportive" material. The distinction between main and supportive was not pursued in this paper. Backgrounding is likely to occur when the setting for a narrative is being established. From our point of view, elements like location, main characters, and current activities represent a static part of the main story line.

Previous research has shown that preschool children can coordinate backgrounding and foregrounding as shown in Story 1 taken from Sutton-Smith (1981), but the capacity to use aspectual configurations for discourse purposes has not been systematically investigated. In Story 1, Frank (4; 8) used the stative predicate *be* to introduce the shark as the main character. After the character was introduced, Frank shifted to the pronoun *he* and used progressive aspect and atelic aktionsart with *was swimming* to describe the ongoing and background activity. At this point, Frank began to foreground, utilizing external perspective and telic aktionsart to express a chronological sequence of three events.

> Story 1. Once upon a time, there was a shark and he was swimming in the water and he found a whale and the whale ate the shark up and the razor cleaned everybody up the end. (Sutton-Smith, 1981 p. 95)

In Story 1, the static and dynamic transitions are clear, and they are motivated entirely by aspectual combinations with non-telic aktionsart plus internal perspective holding the story line at one temporal location and telic aktionsart plus external perspective moving the story line forward in a sequence of events. However, when the other possible combinations of aspect and aktionsart occur, the discourse consequences can be ambiguous. This is especially true in Finnish where there can be a neutral value of viewpoint aspect. Furthermore, children use lexical sequencers such as 'then' to create dynamic transitions and there is sometimes a lack of concordance between the dynamic force of a lexical sequencer and the static force of an aspectual configuration, e.g., Cathy (3; 6) "... there was Superman coming and he hurt both of him knees, *then* they *were flying*..." (Sutton-Smith, 1981 p. 61).

1.4. The chronological sequencing rule

For the purpose of this research, we formulated a relatively simple rule to define a dynamic transition. The rule is as follows:

> If a clause-to-clause transition involves a lexical sequencer, it results in a dynamic transition and foregrounding. In the absence of a lexical sequencer, a clause-to-clause transition is dynamic if the aspectual configuration contains both external (or neutral) perspective and telic aktionsart.

This rule will be identified as the chronological sequencing (CS) rule. At the outset, it is possible to see that this rule may run into problems, e. g., so called lexical sequencers may have other functions, external perspective may be sufficient for a dynamic transition, and the rule might be suspended by subordinate clause structure. The research strategy was to apply the CS rule to the conversational and narrative discourse of young children and to determine

its explanatory strengths and weaknesses. The CS rule concerns the microstructural level of analysis. At the macrostructural level, the story structure of the narratives was also evaluated and related to the microstructural analysis.

2. METHOD

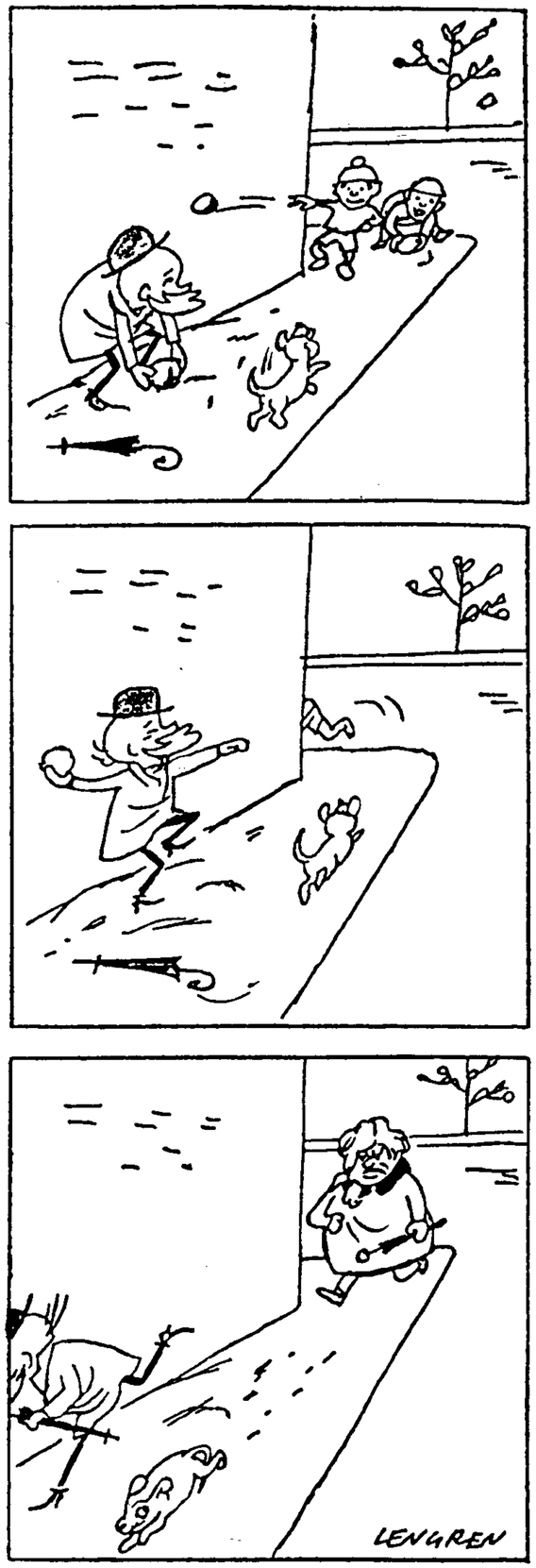
2.1. Children

Sixty children from Poland, Finland, and America participated in this research. There were five age groups with 12 children in each age group in each country. When we began working with the children, their average age and range were as follows: Polish groups 2; 6 (2; 6-2; 9), 3;6 (3;2-3;9), 4; 6 (4; 3-4; 8), 5; 5 (5; 3-5; 9), 6; 7 (6; 2-6; 9); Finnish groups 2; 7 (2; 4-2-9), 3; 6 (3; 4-3; 9), 4; 6 (4; 4-4; 9), 5; 7 (5; 4-5; 10), 6; 6 (6; 4-6; 8); and American groups 2; 8 (2; 3-2; 11), 3; 6 (3; 4-3; 8), 4; 6 (4; 3-4; 8), 5; 6 (5; 3-5; 9), 6; 5 (6; 3-6; 7). All of the children received a comprehension test in the initial phase of the research, which required from two to six sessions depending on the age of the children. Hence, we were well acquainted with the children before the elicitation phase of the research began.

2.2. Procedure

Two elicitation procedures were utilized: event description and story telling. The event description procedure consisted of a relatively free flowing conversation in which the experimenters tried to encourage the children to talk about situations which were remote in time and space. The following questions were integrated into the conversation: 1) "What happened earlier this morning?", 2) "What do you plan to do when we finish talking?", 3) "What did you do the last time you (took a trip/went on an outing/went on vacation) with your parents?", and 4) "What is your favorite thing to do and when will you do this again?" Substitute questions were used as the natural flow of the conversation dictated, but the experimenter always tried to persuade the child to talk about the recent and remote past and future. This paper includes an analysis of a single past event description from each child (see Appendix A for examples).

In the story telling procedure, we asked children to tell stories about cartoon strips which had three picture frames (see Figure 1). In America and Finland, the experimenter could not see the cartoon, i.e., independent perspective. Due to a breakdown in communication, in Poland experimenter and the children looked at the cartoons together; i.e., shared perspective. The experimenter was relatively free to prompt the children with such requests as,



The "Snowball Story" cartoon by Lengren

"Did anything else happen?", "What were the story characters doing?" or "Why did some event occur?" There were four cartoons which can be labeled: 1) sled ride, 2) picking apples, 3) trying to read, and 4) the snowball story (see Figure 2). All of the stories involve the exploits of an old man and his dog. The experimenter modeled the task with the sled ride story, and the children told three stories in the order in which they picked the cards containing the cartoons. This paper includes an analysis of the snowball story (see Appendix B, for examples).[2]

2.3. General analysis

Each event description and story contained a set of clauses which was analyzed according to tense, viewpoint aspect, aktionsart and modality, among other properties. Absolute tense was coded at the semantic level as past, present and future. Finnish and English also have relative tenses, and tense shifts involving present perfect and past perfect were of particular interest (see Bamberg, 1987). Aspect and aktionsart were discussed above. The rules for classifying aktionsart were taken from Dowty (1979) and adapted for Polish (see Weist, Wysocka, Witkowska-Stadnik, Buczowska & Konieczna, 1984) and for Finnish (see Appendix C).

We assume that when the child is producing some clause within a larger discourse, s/he retrieves some predicate-argument structure and decides to take an internal or external perspective on the situation at issue. We have used Dowty's tests to try to recover the logical structure of the predicate. The following three tests show how the classification process was carried out. An imperative test can be used as one of a set of tests to discriminate stative from dynamic predicates. Thus, *Know Finnish!*, is an anomalous sentence, but *Build a sauna*! is acceptable. An implication can be used as one of a set of tests to distinguish activity from accomplishment predicates as follows: If *to listen* or *to build* are activities, then *Bill is listening to Chopin* or *Bill is building a sauna* (or stops doing so) implies that *Bill has listened to Chopin* or *Bill has built a sauna*. It can be seen that the implication makes sense for the predicate *to listen* but not *to build*. In order to discriminate achievements from accomplishments, a test with *almost* is useful. The sentence, *Bill almost noticed Mary*, is unambiguous. Bill did not notice Mary. However, the sentence, *Bill almost built*

[2] The prompting procedure was used in order to be sure to obtain data from all of the children, even the 2 1/2-year-olds. It was not a good idea because of the potential influence on aspectual configurations. Clauses resulting from prompting had to be omitted from the analysis.

The fact that shared perspective was used with the Polish children could have been responsible for a relatively high percentage of spatial transitions such as *a na drugim obrazku* 'and in the second picture.' One consequence of this tendency can be found in Table 1 where Polish children had a relatively high frequency of entries in the LEX-SEQ, In-NT cell of the transition matrix (see also Bokus, 1978).

a sauna, is somewhat ambiguous. It is possible that Bill started but didn't finish building the sauna.

When children tell the snowball story, they are very likely to use the following verbs: *to throw, to run,* and *to come*. These are sufficient to demonstrate the problems which arise when attempting to classify the logical structure of predicates. The verb *to throw* is a two-place predicate requiring an agent and a patient (to use very general semantic terms). When the patient argument is singular, e. g., *a snowball*, then the predicate argument structure is telic and more specifically an accomplishment. However, when the patient argument is plural, the structure is atelic or an activity (see also Verkuyl, 1972).

When the verb *to run* is used alone or with some specification of direction *to run after*, the predicate structure is atelic. However, when the structure involves a goal, e.g., *to run home* or *to run away* the predicate argument structure involves a limit or terminal point and is telic, more specifically an accomplishment. It is not a simple matter to classify *to throw* or *to run*, but as long as the full context is used, the classification is reliable.

However, it is difficult to identify the predicate-argument structure for some verbs, e.g., *to come*. It depends on how one views the action. If *to come* is thought of as motion to goal, then it is an accomplishment, but if it is considered to be the process of arrival, then it is an achievement. Dowty's tests provide an independent means of classifying predicate-argument structures, and as such, they are very useful. The tests help to avoid classifications which are based on circular reasoning.

2.4. Foregrounding versus backgrounding

Every clause to clause transition was classified as static or dynamic according to the CS rule (see above). A clause transition contains two clauses. The properties of the second or target clause determine if the transition is static or dynamic. Three basic questions were asked about the target clause: 1) Is there a lexical sequence or not?, 2) Is viewpoint aspect external, internal, or neutral (for Finnish)?, and 3) Is the aktionsart telic or non-telic? Sentences 4-14 demonstrate how the classification system worked. The sentences are coded by language, E (English), P (Polish), and F (Finnish) and by age of the children who produced them. All of the remarks concerning this set of sentence transitions refer to the target clauses. Sentences 4 and 5 have the prototypical conditions for foregrounding in that the aktionsart is telic and the viewpoint is external. They differ only in the presence versus absence of a lexical sequencer. Sentence 6 has the prototypical conditions for backgrounding as the aktionsart is non-telic and the viewpoint is internal. In sentence 4, it is clear that the children played catch first and ran away later, and in Sentence 6, it is equally clear that the dog was jumping up at the same time that the children were

throwing snowballs. Sentences 7 and 8 contain a mixed aspectual configuration resulting in ambiguous sequential information. Following the CS rule, neither sentence was judged to produce foregrounding. In other words, the claim is that the children were expressing the idea that the mother's approach coincides with the boy's departure and that he closed his eyes and laughed at the same time.

4. E 4;8 They're playing catch,
   then they ran away.
5. E 4;6 And there are two little boys.
   They throwed a snowball and snowthing out.
6. E 5;7 A boy and his friend are throwing a snowball
   at the man, and the dog's jumping up.
7. E 4;6 And then the mother's coming running,
   and he's running away with the dog.
8. E 4;5 And he closed his eyes,
   and he laughed.

Sentences 9 & 10 and 11 & 12 provide prototypical examples of foregrounding and backgrounding in Polish and Finnish. The Finnish examples require further comment because the concept of neutral viewpoint aspect may be a source of controversy. Finnish linguists appear to agree that in transitive sentences like 11 and 12, the accusative case *lumipallo-ø-n*, snowball-S-ACC codes external perspective (i.e., perfective aspect) and the partitive case *lumipallo-j-a*, snowball-P-PARTIT specifies internal perspective (i.e., imperfective aspect). What if there is no partitive-accusative distinction? Sentence 13 has an intransitive verb which precludes any partitive-accusative contrast. The telic aktionsart of the verb is sufficient to move the story line forward.

Sentence 14 represents a type of sentence which is problematic in all three languages. It contains a mismatch of a lexical sequencer with the aspectual configuration of a prototypical backgrounding clause, i.e., the verb is marked for progressive aspect and the direct object is in the partititve case. Our argument is that the lexical sequencer overrides the aspectual configuration, and in this particular example, the child meant to express the idea that the old man put down his umbrella before the children started throwing snowballs.[3]

[3] The coding was as follows:
A/ACCUS – Accusative, ACC – Accomplishment, ACH – Achievement, ACT – Activity, ADESS – Adessive, ALLAT – Allative, BACK – Backgrounding, DIM – Diminutive, ESS – Essive, EX – External perspective, F – Feminine, FORG –Foregrounding, G/GEN – Genetive, I/INST – Instrumental, INESS – Inessive, INF – Infinitive, INF3 – Third infinitive, IPFV – Imerfective, M – Masculine, L/LOC – Locative, LS – Lexical Sequencer, N/NOM –Nominative, NEU – Neuter, NAPAST –Nonpast, NV – NON – virile, P – Plural, PARTIT – Partitive, PAST – Past, PAST PART – Past Participle, PFV – Perfective, PRES – Present, PROG – Progressive, PROMPT – Prompting, REFL – Reflexive.

9. P 4;8 A on patrzy-ø,patrzy-ø,
   And he:N:M:S watch:IPFV:NPAST-3:S, watch:IPFV:NPAST-3:S
   And he is watching, watching
   a później przyszedł-ø-ø ten pan-ø
   and then come:PFV-PAST-M-3:S this man-N:M:S
   and then this man came
10. P 4;6 Pan-ø patrzy-ø tutaj
    Man-N:M:S watch:IPFV:NPAST-3:S here
    The man is watching here
    a ten pies-ek-ø ø-stoi-ø
    and this dog-DIM-N:M:S IPFV-stand:NPAST-3:S
    and this doggie is standing
11. F 6;6 Koira pompp-i-ø tie-ø-llä
    dog jump-PAST-3:S road-S-ADESS
    Dog jumped on the road
    Sitten se ukko heitt-i-ø lumipallo-ø-n
    then it old-man throw-PAST-3:S snowball-S-ACCUS
    Then the old man threw a snowball
12. F 5;6 Koira juokse-ø-e laps-i-a kohti
    dog run-NPAST-3:S child-P-PARTIT toward
    The dog runs toward the children
    Ja toinen poj-i-sta on justii teke-mä-ssä lumipallo-j-a
    and one:of:the:two boy-P-ELAT be:3:S
    just make-3INF-INESS snowball-P-PARTIT
    and one of the two boys is just making snowballs
13. F 5;6 Se tul-i-ø sama-ø-sta
    he come-PAST-3:S same-S-ELAT
    he came from the same (corner)
    nuo lapse-t-kin lähti (läht-i-vät)
    sama-ø-sta nurka-ø-sta
    Those child-P:NOM-too leave-PAST-3:P
    same-S-ELAT corner-S-ELAT
    Those children left from the same corner
14. F 5;6 Uko-ø-lla ol-i-ø sateenvarjo
    Old man-S-ADESS be-PAST-3:S umbrella
    The old man had an umbrella
    Sit ne heitteli (heitte-l-i-vät) lumipallo-j-a
    then they throw-PROG-PAST-3:P snowball-P-PARTIT
    Then they were throwing snowballs

In summary, the examples reveal that the application of the CS rule for foregrounding produces some clear and some unclear cases. The combination of external perspective and telic aktionsart, with or without lexical sequencers,

clearly moves the story line forward. It creates a sense of a chronological sequence. The combination of internal perspective and non-telic aktionsart with no lexical sequencer maintains the story line in one temporal location. The dynamic or static force of the other combinations varies. The most clumsy transition contains a lexical sequencer which has a dynamic force combined with internal perspective and non-telic aktionsart both having a static force.

2.5. Story structure

In the last section, we discussed transitions which may or may not move a story line forward, but what is a story? In our opinion, it would not be wise to start with a definition of a story, and then to evaluate foregrounding and backgrounding only in those narratives which meet that definition. With such an approach, one could not detect the developments at the microstructural level which might support the evolution from "heaps" to "true narratives" at the macrostructural level. Hence, we worked relatively independently at the micro- and macrostructural levels of analysis. We tried to adopt a definition of a story which would fit the mainstream claims about such structures. Hence, a segment of narration was defined as a story if it had three elements – a setting, an episode, and a conclusion where: 1) a setting establishes a state of affairs which serves as a point of departure for the narrative and it may include a location in time and/or space, an introduction of characters, or a description of ongoing activities, 2) an episode contains some goal-directed action, and 3) a conclusion contains a resolution (cf. Stein & Glenn, 1979). A story was further defined as dynamic if the narrator entered the episode and the conclusion with foregrounding transitions.

3. RESULTS AND DISCUSSION

3.1. Foregrounding & Backgrounding

Table 1 contains the frequency of transitions classified according to the presence (LEX-SEQ) or absence (NLEX-SEQ) of lexical sequencer, external (Ex) or internal (In) viewpoint aspect, and telic (T) versus non-telic (NT) aktionsart. In Finnish, clauses were classified as bound (B) versus not bound (NB). In this research, the experimenter was relatively free to prompt the children in order to motivate them to continue their stories or event descriptions. Since prompting could affect the pattern of results; e. g., a 'What happened?' question could produce external perspective and a 'What doing?' question could produce internal perspective, prompted transitions were omitted. This effectively eliminates the two-year-olds who seldom produced multiple clauses unless prompted.

TABLE 1

The number of Transitions* producing foregrounding and backgrounding: Backgrounding transitions are signified by parentheses.

		Snowball Stories				Event descriptions			
		ENGLISH							
		LEX-SEQ		NLEX-SEQ		LEX-SEQ		NLEX-SEQ	
AGE	ASPECT	T	NT	T	NT	T	NT	T	NT
	Ex	0	0	0	(0)	1	0	1	(0)
2;6	In	0	1	(2)	(2)	0	0	(0)	(3)
	Ex	3	0	8	(3)	6	0	7	(3)
3;6	In	4	0	(12)	(11)	0	0	(0)	(5)
	Ex	8	0	21	(4)	9	1	27	(17)
4;6	In	3	2	(7)	(21)	0	0	(0)	(23)
	Ex	15	2	12	(6)	6	0	35	(10)
5;6	In	1	2	(7)	(24)	0	0	(1)	(16)
	Ex	10	0	9	(2)	13	0	14	(5)
6;6	In	4	8	(22)	(37)	0	2	(1)	(6)
		POLISH							
	Ex	0	0	3	(0)	0	0	0	(0)
2;6	In	1	6	(3)	(9)	0	0	(0)	(4)
	Ex	1	0	1	(0)	1	0	7	(0)
3;6	In	0	3	(3)	(23)	0	0	(0)	(15)
	Ex	6	0	11	(0)	18	0	18	(0)
4;6	In	3	19	(7)	(35)	1	9	(4)	(29)
	Ex	11	0	22	(0)	10	0	15	(0)
5;6	In	2	8	(7)	(35)	0	0	(6)	(15)
	Ex	13	0	17	(0)	9	0	13	(0)
6;6	In	2	12	(6)	(38)	0	1	(2)	(24)
		FINNISH							
	B	2	0	2	(0)	2	0	0	(0)
2;6	NB	0	1	(0)	(17)	0	0	(0)	(4)
	B	5	0	5	(0)	4	0	0	(0)
3;6	NB	1	2	(0)	(9)	0	0	(1)	(4)
	B	14	0	9	(0)	8	0	5	(0)
4;6	NB	2	3	(1)	(28)	0	0	(2)	(23)
	B	27	0	28	(2)	23	0	5	(0)
5;6	NB	2	7	(3)	(32)	0	2	(0)	(27)
	B	26	0	19	(0)	10	0	5	(0)
6;6	NB	6	3	(0)	(21)	0	9	(2)	(6)

*Experimenter prompted transitions were not included.

TABLE 2

The percentage of transitions producing foregrounding and backgrounding* in the 5;6 age groups summed over languages

	LEX-SEQ		NLEX-SEQ		LEX-SEQ		NLEX-SEQ	
ASPECT	T	NT	T	NT	T	NT	T	NT
Ex	17	2	23	(3)	23	0	2	(6)
In	2	6	(5)	(42)	0	1	(4)	(34)

*Backgrounding transitions are in parentheses.

Other than the fact that there are more transitions as children grow older, the distribution of the transitions is relatively similar across age levels and languages. The pattern can be best seen in Table 2. Table 2 shows the percentage of foregrounding and backgrounding transitions for the children in the 5;6 age groups. Prototypical foregrounding occurs with the combination of external perspective and telic aktionsart, regardless of lexical sequencers, and prototypical backgrounding occurs when the aspectual perspective is internal (or neutral), the aktionsart is not telic, and lexical sequencers are absent. Children are likely to use these categories in story telling and event descriptions.

Sentences 4 and 5 in Section 2.4 demonstrate the combination of external perspective and telic aktionsart (i.e., prototypical foregrounding). In Table 2, this combination accounts for 40 percent (17 & 23) of the transitions in the snowball stories and 55 percent (23 & 32) of the transitions in the event descriptions. Sentence 6 is typical of the combination of internal perspective and non-telic aktionsart in the absence of a lexical sequencer (i.e., prototypical backgrounding). In Table 2, this combination accounts for 42 percent of the transitions for snowball stories and 34 percent for event descriptions. Together these prototypical aspectual configurations account for 82 and 89 percent of the transitions. Sentences 9-12 provide example for Polish and Finnish. Backgrounding was also judged to occur when there was no lexical sequencer (NLEX-SEQ) and the aspectual configuration lacked the combination of external perspective and telic aktionsart (i.e., the In-T & Ex-NT cells). These are exemplified by Sentences 7 and 8. The combination of external perspective and non-telic aktionsart was rarely found in Finnish and never in Polish.[4]

[4] Timberlake (1982) has argued that "Lexically atelic processes (typically expressed by unprefixed verbs in Russian) necessarily belong to the imperfective category..." (p. 312). Our findings are consistent with this argument; Table 1 has no observations in the category external & nontelic. Howewer, we would argue that atelic aktionsart can combine with perfective aspect, typically meaning that the activity has extended for a limited period of time.

The final type of transition which has not yet been discussed involves the use of a lexical sequencer like 'then' which has a dynamic force with internal perspective and non-telic aktionsart both of which have a static force. These transitions were consistently found in storytelling although they were relatively infrequent. Children sometimes use 'then' as part of the introduction of new characters into their narratives. A good example of this can be seen in Appendix B in Sarah's story. In clauses 9 & 10, Sarah said, *and then there's a lady, and she has a snowball on her head.* This is a prototypical introduction of a new character as the individual is referred to first with a noun, with an indefinite article, and within an existential clause. In the second and subsequent references, the lady is referred to with a pronoun (see Hickman, von Crevel & Liang, 1989). In this case, the link between the micro- and macrostructural levels is clear. Clause 9 establishes a new setting and the word 'then' contributes to the introduction of a new character. Hence, the transition from clause 8 to 9 should be viewed as a well formed static (i.e., backgrounding) transition. Another example of this kind can be seen in Heikki's story, clause 3, Appendix B.

The problem is that the link between levels is seldom so clear and it is often difficult to discriminate a clumsy attempt to foreground with 'then' plus internal perspective and non-telic aktionsart from a fluent introduction of a new character. The contrast can be seen in Sarah's story in Appendix B when comparing the transition from clause 4 to 5 with the transition from clause 8 to 9. While clause 5 contains the initial reference to the dog, it is done with a definite article as it is throughout the story. It appears that Sarah is not introducing the dog. She is trying to integrate the dog's activity into her story, but she has not yet gained control over the adequate event packing mechanisms.

3.2. Story structure

Table 3 shows that about half of the children at 4;6 tell stories. By 6;6 two-thirds of the children tell stories with dynamic transitions into the episode and conclusion. A comparison reveals that story tellers do not appear to hold more closely to the prototypical foregrounding and backgrounding transitions. Hence, we were not able to find a straightforward connection from the macro- to the microstructural level of analysis (see Bamberg, 1989).

In Finnish, *vähän* 'a little' binds the clause, e.g., *Ukko käveli vähän* 'The old man walked a little'. The clause binding puts external perspective on a clause which is neutral with regard to aspect. *Käyellä vähän* 'to walk a little' was coded as an accomplishment, but the argument can be made that this should be classified as an activity.

TABLE 3

The number of children who told stories and the subset with dynamic transitions into the episode and conclusion, max=12

	LANGUAGE					
	Story	Dynamic	Story	Dynamic	Story	Dynamic
2;6	0	0	0	0	0	0
3;6	3	3	9	9	1	1
4;6	6	3	6	3	5	3
5;6	7	6	6	2	6	3
6;6	11	9	9	8	10	8

TABLE 4

Backgrounding transitions with external perspective and telic aktionsart

	LANGUAGE						
AGE	ENG	POL	FIN	ENG	POL	FIN	Σ X
2;6	0	0	0	6	1	3	10
3;6	2	4	3	6	1	2	18
4;6	1	2	7	7	10	21	48
5;6	3	7	11	7	9	13	50
6;6	1	7	2	0	6	8	24

3.3. Backgrounding with external perspective and telic aktionsart

Complex sentence structure can create anomalies for the CS rule. Not all transitions which have a target clause with external perspective and telic aktionsart produce foregrounding, as shown in Table 4. Some of these anomalies are not very interesting, including repetitions and clarifications. In contrast, subordination and shifts to relative tense are quite interesting. Concerning subordination, the CS rule only takes into consideration the aspectual configurations of clauses. It does not account for the syntactic structure of clauses. As long as the discourse contains an independent set of clauses or a coordinated set, the CS rule does a relatively good job of discriminating dynamic from static transitions. However, as children develop their narrative skills, they begin to use more complex event packing including subordination. Sentences 15-17 all contain temporal adverbial clauses. The subordinate clauses all have telic aktionsart and external perspective. In spite of the fact that these clauses all have dynamic aspectual force, they do not move the story line forward. They establish reference time for the main clause which may or may not move the story line forward.

15. E 5;6 They stop, when they see (or notice) her.
16. P 6;6 ... jak pan ø im rzuci-ł-ø-ø to uciek-l-i-ø
when man-N:M:S them throw: PAFV-PAST-M-3:S
escape PFV-PAST-V-3:P
'when the man threw (the snowball) at them, they ran away'

17. F 6;6 ja kun me lähettiin (lähd-i-mme) sitten pois
and when we leave-PAST-1:P then away
'and when we left
nii vähän pelott-i-ø
so little scare-PAST-3:S
so we were a little scared'.

We did not find many examples of shifts to relative tenses, but the few examples which were found strongly support Bamberg's (1987) relocation argument. When the perfect tense involves a shift from an anchor tense, e. g., from present in Sentence 18 or from past in Sentence 19, the perfect tense creates a relocation in the narrative. Here, the relocations were retrospective. In Sentence 18, the man had dropped his umbrella before he held up his umbrella, and in Sentence 19, Mother got the car before the people were at their location. Since perfect and perfective are sometimes confused, it is interesting to emphasize that at the discourse level, these two concepts have the opposite effect, with perfect moving the story line backward and perfective moving it forward (see also Slobin & Bocaz, 1989).

18. E;4;5 This is the one that the guy holding up a rock, and that has he dropped his umbrella (c.f., he has), and he and his dog's trying to chase two little boys.
19. F 6;6 Ei, me oltiin (ol-i-mme) kaks päivä-ä meijän (meidän) äiti-ø ol-i-ø juuri
no, we be-PAST-1:P two day-PARTIT our mother-S:N be-PAST-3:S 'no we were (there) two days, our mother had just pari päivä-ä itten saanu (saa-nut) se-n auto-n.
just few days-PARTIT before get-PAST PART that-ACC Car-ACC just got that car a few days before'.

3.4. Language particulars in foregrounding and backgrounding

In order to move the story line forward, Polish children use perfective aspect. However, this is not a simple matter concerning viewpoint only. Regarding English, Verkuyl (1972) and others have argued that aktionsart cannot be determined by considering the verb in isolation, e.g., 'drinking with colleagues' is an activity and 'drinking a liter of vodka' is an accomplishment. In Polish, the aktionsart for members of an aspectual pair can be different (see Miller, 1970 and Cochrane, 1977); e.g., in the pair *czytać/przeczytać* 'to read' the imperfective form is an activity and the perfective form is an accomplishment' or in the pair *denerwować się/zdenerwować się* 'to be/get nervous' the imperfective is a state and the perfective is an achievement. This fact has important implications for discourse, since the perfective form of these verbs is telic and the imperfective is non-telic. Our tests indicate the *uciec/uciekać* 'to escape' represents such a pair.

Thus, the choice of *uciekać* as shown in Sentence 20 combines the force of external perspective and telic aktionsart to move the story line forward.

20. P 4;6 ... Potem przyszed-ł-ø-ø jeden pan-ø,
then come: PFV-PAST-M-3:S one man-N:M:S
'then a man came,
i zobaczy-ł-ø-ø ich.
and see: PFV-PAST-M-3:S them,
and (he) saw (or noticed) them,
No, i oni szybko uciek-l-i-ø.
well, and they quickly escape: PFV-PAST-V-3:P
well, and they quickly escaped'.

In English, children use the simple past or the simple narrative present to code external perspective and to move the story line forward. The use of particles such as 'away' is relevant to aktionsart. The verb 'to run' is an activity, but 'to run away' is an accomplishment; i.e., if you are now running away (or stop running away), it does not imply that you have run away. With the aid of particles such as 'away' the American child combines telic aktionsart with external perspective to move the story line forward as shown in Sentence 21.

21. E 4;6 ... Now he's gonna throw a snowball at the kids, but they ran away fast.

In Finnish, in the most frequent clause, viewpoint aspect is neutral and the speaker relies on telic aktionsart or some other mechanism such as a locative goal to bind the clause. In Sentence 22, the Finnish child used the noun (escape) with the illative case.

22. F 5;6 Ja se ø pitä-ø-ä silm-i-ä kiinni,
and it-S:N keep-NPAST-3:S eye-P-PARTIT-closed,
'and he keeps (his) eyes closed,
Ja ne lapse-t juokse-ø-e (juoksevat) pako-ø-on,
and these child-P:N run-NPAST-3:P escape-S-ILLA,
and the children run into escape (run away)'.

In order to create backgrounding, Polish children use imperfective aspect (e.g., Sentence 23), American children use progressive aspect (e.g., Sentence 24), and Finnish children use a combination of mechanisms. In Sentence 25, the child's clause contains the progressive main verb with -1- and a partitive plural direct object. The verb 'to throw' with a plural direct object is an activity.

23. P 5;3 I taki jeden wystawi-ł-ø-ø rękę
and such a one stick:out:PFV-PAST-M-3:S hand-A:F:S
'and this one stuck out a hand,
a on dopiero rzuca-ø
and he so late throw:IPFV:NPAST-3:S
and so late he is throwing,
a pies-ek-ø szczeka-ø na t-ę rękę
and dog-DIM-N:M:S bark:IPFV:NPAST-3:S at this-A:F:S hand-A:F:S
and the little dog is barking at his hand.'

24. E 6;5 It's winter and a man and two children are throwing snowballs, and the one, the children just threw one, and the man is trying to make one.

25. F 5;6 Ja sitten nuo on (ovat) pallosot-a-a
and then those be: NPAST:3:P ball:war-S-PARTIT
'and then those are in a snowball fight'.
Mies-ø ja koir-a-ø heitte-le-ø-e (heittelevät)
man-S:N and dog-S-N throw-PROG-NPAST-3:P
no-i-ta pallo-j-a
those-P-PARTIT ball-P-PARTIT
'the man and the dog are throwing those balls'.

3.5 Perspective taking

Slobin and Bocaz (1989, p. 6) make the following claim about the relationship between aktionsart and aspect: "... preschool children seem to be guided by aktionsart in their choice of aspectual form. However, by age 5, Spanish-speaking children are able to take different perspectives on events described by the same verbs, choosing aspectual forms not on the basis of aktionsart, but rather on the basis of how the event is conceived of by the child". To test this idea, we looked at the 'escape situations' in the snowball story. The snowball story has two situations where someone escapes. The two boys run away from the old man, and the old man and his dog run away from an old lady.

We found that 3 1/2- and 4 1/2-year-old children demonstrate the kind of flexibility that Slobin and Bocaz found in 5-year-olds. The best examples are those where the same child uses the same predicate with contrasting viewpoint aspect, as shown in Sentences 26-28. In Sentence 26, the child used the activity predicate *to run* and in Sentence 27, the child used the accomplishment *to run away*. First, they used external perspective, and second, they used internal perspective. In Sentence 28 the child used both the imperfective *uciekać* and the perfective *uciec*. In Polish, we judged *uciekać* to be an activity and *uciec* to be an accomplishment. In our research, the viewpoint aspect of three- and four-year-olds was not restricted by the choice of aktionsart or by the nature of the pictures, one picture showing a result and the other an ongoing action (see Figure 1).

26. E 3;7 But there's an angry guy who's coming in the next one, and they ran.
They're running from that guy.

27. E 4;6 But they ran away fast. And now he's running away cause an old lady's coming to hit him.
28. P 4;6 On chcia-ł-ø-ø rzuci-ć w nich
he:N:M:S want: IPFV-PAST-M-3:S throw: PFV-INF at they:L:M:P
he wanted to throw at them,
A oni ucieka-l-i-ø
and they:N:M:P run:away:IPFV-PAST-V-3:P
and they were running away'.
Potem przyszedł-i-ø-ø jeden pan-ø
then come:PFV-PAST-M-3:S one man-N:M:S
'then a man came,
i zobaczy-ł-ø-ø ich
and notice:PFV-PAST-M-3:S they:A:M:P
and he noticed them,
i oni szybko uciek-l-i-ø
and they:N:M:P quickly run:away:PFV-PAST-V-3:P
and they ran away quickly'.

4. CONCLUSION

In one of the early reports concerning the Berkeley narrative project, Berman (1986) contrasted the compensation with the availability hypothesis. This contrast provides a good background against which the crosslinguistic differences in the development of aspectual configurations can be discussed. According to the compensation hypothesis, "If the grammar does not encode a given distinction, then other, periphrastic or lexically-based, alternatives will be sought to meet the same communicative function" (p. 14), and the availability hypothesis states, "If forms are available, kids use them a lot, early. If not, ... they will simply not be sought-out, and the semantic distinction they encode, as well as the discourse functions which they perform, may remain quite 'neglected' in terms of overt linguistic expression..." (p. 17). When the discourse function is as important as the movement of the story line through time and space, it can not be neglected. We have found that the answer is somewhere between these alternatives.

The major crosslinguistic differences that we found in this research concerned the use of viewpoint aspect. Children learning English and Polish use aspectual contrasts early and extensively, while the children learning Finnish integrate aspectual mechanisms into their language slowly. Considering all of the data, i.e., event descriptions and stories, 11 of 12 Polish children contrasted internal with external perspective at 2;6, and 12 of 12 American children did so. Only five of 12 Finnish children produced both accusative and partitive forms

which might be construed as coding an aspectual contrast. (The problem is that partitive has a number of functions). It was not until 6;6 that all of the Finnish children in an age sample produced a potential aspectual contrast based on the case of the direct object. In the meantime, two-year-old Finnish children failed comprehension tests based on a partitive/accusative minimal pair (see Weist, Wysocka, and Lyytinen, in press), while Polish and American two-year-olds passed the related contrast between internal and external perspective in their languages.

However, by 4;6 Finnish children use a combination of aspectual devices; 10 of 12 produce the partitive/accusative contrast, 7 of 12 use the derivational morpheme *-l-*, and 11 of 12 use the third infinitive.

In Sentence 29, the child used the progressive verb form to establish the simultaneous activities of walking and watching. The story line is held constant and the two clauses form the background for the apple falling event. The *-l-* verb form typically creates backgrounding.

29. F 4;6 Progressive *-l*
No, toi mies kävele-ø-e, koira kattelee (cf. katse-le-ø-e),
omena puto-ø-o,
well, that man walk-NPAST-3:S, dog watch-PROG-NPAST-3:S,
apple fall-NPAST-3:S
'well, that man is walking, the dog is watching,
the apple falls',

At 4;6, the Finnish children were likely to show the capacity to use compound verb constructions which contain some verb like *ruveta* 'to begin' *kä* 'to go', *tulla* 'to come' or *menä* 'to go' together with the third infinitive inflected with the illative or inessive case. The construction often has the meaning 'start into doing something'. The finite verb is usually an achievement, e.g., *ruveta*, and the nonfinite verb is usually an activity, e.g., *leikkiä* 'to play' as shown in Sentence 30. In the narrative context, the construction moves the story line forward. There is a less frequent construction involving the combination of *olla* 'to be' and the third infinitive inflected with the inessive case as shown in Sentence 31. The narrative force is static, creating backgrounding.

30. F 4;6 Third infinitive illative
Rupeen (cf. rupea-ø-n) leikki-mä-än
begin-NPAST-1:S play-INF3-ILLAT
'(I) (will) begin to play'.
31. F 4;6 Third infinitive inessive
Oli (cf. ol-i-vat) otta-ma-ssa
be-PAST-3:P take-INF3-INESS
'(they) were taking'.

The American children also use compound verbs with *try to, start to, begin to*, etc. These verbs have an aspectual function as they do in Finnish (see also

Slobin & Bocaz's 1989 discussion of "event phrases" in Spanish). We looked at the number of American children who used these aspectual compounds (note that this does not include modal compounds with *want to, got to, have to,* etc.). There was a big jump from 4;6 where 4 of 12 children used aspectual compound verb phrases to 11 of 12 at 5;6. In contrast to Finnish and English, children learning Polish were consistently unlikely to use these aspectual compounds.

Children learning English and Polish find a solid basis for expressing the contrast between internal and external perspective at a very early phase in their development. The contrast is obligatory and the morphological coding is transparent for the child's operating principles (e.g., Slobin, 1985). While Finnish children rapidly code case contrasts in semantic domains such as location (e.g., Toivainen, 1980), the relationship between the accusative/ /partitive contrast and aspect is opaque.The Finnish child learns how to utilize the derivational morphology and nonfinite verb forms in order to express aspectual configurations in more detail, meanwhile aktionsart has the discourse functional load. The Finnish children are about a year ahead of the American children in their development of aspectual verb phrases. Since aspect is conspicuous in Polish, the children do not need the additional aspectual force. Hence, there is some compensation in Finnish, but the complexity of coding delays the acquisition.

Appendix A

In Appendix A and B the English translation is followed by an analysis of the viewpoint aspect and aktionsart. The aspectual configuration is followed by the discourse implication, i.e., foregrounding (FORG) or backgrounding (BACK). Viewpoint aspect is coded external (EX), internal (IN), or neutral (NEUT), and aktionsart is coded state (ST), activity (ACT), accomplishment (ACC), or achievement (ACH). If a lexical sequencer created foregrounding with a clause having a static aspectual configuration, it is coded LS.

Examples of event description

Finish: Anti Ville (4;6):

1) Me oltiin (ol-i-mme) Rauma-lla.
We be-PAST-1:P Rauma-ADESS
'We were on (in) Rauma'. NEUT-ST=BACK
2) Me saa-t-i-in (sa-i-mme) mehu-ø-a matka-ø-lla.
We get-PAST-1:P juice-S-PARTIT way-S-ADESS
'We got (some) juice on the way'. NEUT-ACH=FORG
Adult: Minkälaista Raumalla oli?
'How was it in Rauna?'
3) Mä leik-i-n siellä palo-ø-lla
I play-PLAST-1:S there ball-S-ADESS
'I played there with a ball'. NEUT-ACT=BACK

4) ja me nuku-tt-i-in (nuku-i-me) lattia-ø-lla
and we sleep-PAST-1:P floor-S-ADESS
and we slept on the floor'. NEUT-ACT=BACK
Adult: Mikä paika se oli, jossa te nukuitte lattialla?
'What place was it, in which you slept on the floor?'
5) Se ol-i-ø kivinen hoteli-ø
It be-PAST-3:S made of stone:S:NOM hotel-S:NOM
'It was a stone hotel'. NEUT-ST=BACK
6) Ikkuna-ø-lla ol-i-ø paljon kuk-i-a.
Window-S-ADESS be-PAST-3:S a lot of flower-P-PARTIT
'On the window was a lot of flowers'. NEUT-ST=BACK
Polish: Agata (4;6)
Adult: Agata, czy opowiesz mi co robiłaś dziś rano?
Agata, will you tell me what you were doing today in the morning?
1) ø-spa-ł-a-m
IPFV-sleep-PAST-FEM-1:S
'(I) was sleeping'. IN-ACT=BACK
Adult: A przypomnij sobie jeszcze co było rano?
'And recall what more/else was in the morning?'
2) Potem po-sz-ł-a-m na podwórk-o.
Then PFV-go-PAST-F:1:S on yard-A:N:S
'Then (I) went to the yard'. EX-ACC=FORG
3) Potem babci-a za-woła-ł-a-ø mnie na obiad-ø.
Then grandma-N:F:S PFV-call-PAST-F-3:S I:A:S for dinner-A:M:S
'Then grandma called me for dinner'. EX-ACH=FORG
4) Potem przyszedł-ł-ø-ø do mnie Grzesi-u
Then come: PFV-M-3:S to I:A:S Grzesiu-N:M:S
'Then Grzesiu came to me'. EX-ACH=FORG
5) Potem ja do niego po-sz-ł-a-m.
Then I:N:S to he:A:M:S PFV-go-PAST-F:1:S
'Then I went to him'. EX-ACC=FORG
Adult: Ślicznie
'Very good'.
6) Potem się ø-bawi-l-i-śmy z Martynk-ą w błoci-e
Then REFL IPFV-play-PAST-V-1:P with Martyn-INST:F:S
in mud-Loc:N:S
'Then (we) were playing with Martyn in mud'. IN-ACT & LS=FORG
Adult: Udany dzień, co? Dużo się działo.
'A good day, right? A lot was going on'.
7) Tak i jeszcze babci-a mnie za-woła-ł-a-ø na obiad-ø
Yes and more grandma-N:F:S I:A:S PFV-call-PAST-F-3:S for
dinner-A:M:S
'Yes and more: grandma called me for dinner'. EX-ACH=FORG
8) a ja nie chcia-ł-a-m ø-iś-ć
and I:N:S not IPFV:want-PAST-F-1:S IPFV-go-INF
'and I didn't want to go'. IN-ST & ACT=BACK
English: Jessica (4;6)

Adult: Raggedy Ann and I want to know what happened on this trip to Toronto.
1) We went to Toronto Island. EX-ACC=FORG
2) We went on a log ride, EX-ACT=BACK
3) and then we got all splashed wet. EX-ACH=FORG
Adult: You did? Why?
4) Because we were going real, real fast, IN-ACT=BACK
5) so we turned. EX-ACH=FORG
6) I was screaming, IN-ACT=BACK
7) when we went shooo. EX-ACT=BACK
Adult: Oh, what were you on? Were you riding on something?
8) Yeap, we were riding on a log, IN-ACT=BACK
9) and then we, we was just going up, IN-ACT & LS=FORG
10) and then all of a sudden we went zzzzraff, EX-ACT & LS=FORG
11) and then we went into a tunnel, EX-ACC=FORG
12) and there was real scary. IN-ST=BACK
13) there was this light, IN-ST=BACK
14) and it just like a shooting star, just like, IN-ST=BACK
15) it scared me to death. EX-ACH=FORG
16) I just thought, EX-ACT=BACK
17) maybe I should get off of the ride, EX-ACC & Modal=BACK
18) but I couldn't, IN-ST=BACK
19) 'cause it was going real, real fast, IN-ACT=BACK
20) and it was scary to jump. IN-ST=BACK

Appendix B

Example of story production

Finnish: Heikki (5;6)

1) Täällä on sellanen ves-i,
Here be:NPAST-3:S such:S:NOM water-S:NOM
'Here is such water, NEUT-ST=BACK
2) ja tossa on tollane maa-ø,
and there be:NPAST-3:S such:S:NOM ground-S:NOM
and there is such ground, NEUT-ST=BACK
3) ja sitten täällä on koir-a-ø,
and then here be:NPAST-3:S dog-S-NOM,
and then here is a dog, NEUT-ST & LS=FORG
4) ja sit nuo on pallosot-a-a,
and then those be:NPAST-3:S ballwar-S-PARTIT,
and then those are (part of) a (snow) ball war'.
NEUT-ACT & LS=FORG
5) Mies-ø ja koir-a-ø heitt-elle-e no-i-ta pallo-j-a
Man-S:NOM and dog:S:NOM throw-PROG-3:P those ball-P-PARTIT
'Man and dog are throwing those balls' IN-ACT=BACK
nuo kaks poik-a-a.
those two boy-S-PARTIT.
'those two boys'.

6) ja sitten tuolla ne poja-t lähte-e karku-ø-un,
and then there those boy-P:NOM leave:PRES-3:P escape-S-ILLAT,
and then there those boys leave into escape, NEUT-ACC=FORG
7) kun tuo heittä-ä yhd-e-n lumipallo-ø-n,
when/because that throw:PRES-3:S one-S-ACC snowball-S-ACC
when/because that throws one snowball, EX-ACC & When=BACK
8) ja koir-a-ø lähte-e per-ä-än,
and dog-S-NOM leave PRES-3:S behind-S-ILLAT,
and dog leaves into behind NEUT-ACH=FORG
9) ja sit tuolta tule-e nii-tten äit-i-ø,
and then from there come:PRES-3:S they-GEN mom-S-NOM,
and then from there comes their mother, NEUT-ACC=FORG
10) ja nuo lähte-e karku-ø-un,
and those leave:PRES-3:P escape-S-ILLAT,
and those leave into escape'. NEUT-ACH=FORG
Adult: Ketkläs lähti karkuun?
'Who left into escape?'
11) Tuo mies-ø ja tuo koir-a-ø,
Those man-S:NOM and that dog-S-NOM,
'Those man and that dog',
12) kun tuo äit-i-ø tul-i-ø,
when/because that mother-S-NOM come-PAST-3:S,
'when/because that mother came'. NEUT-ACC & When=BACK

Polish: Marysia (5;7)

By-ł-a-ø zim-a,
Be:IPFV-F-3:S winter-N:F:S,
'(it) was winter', IN-ST=BACK
2) i tam chłopc-y rzuci-l-i-ø,
and there boy-N:M:P throw:PFV-PAST-V-3:P,
and there boys threw,
w pan-a Filutk-a kul-ą śniegow-ą,
at man-A:M:S Filutek-A:M:S ball-INST:F:S snow-INST:F:S,
a snowball at Mr. Filutek, EX-ACC=FORG
3) i potem pan-ø Filutek-ø ich rzuci-ł-ø-ø kul-ą śniegow-ą
and then man-N:M:S Filutek-N:M:S they:A:M:P throw:PFV-PAST-M-3:S
ball-INST:F:S snow-INST:F:S,
and then Mr. Filutek threw a snowball at them, EX-ACC=FORG
4) i potem ucieka-ł-ø-ø
and then run away:IPFV-PAST-M-3:S,
and then (he) was running away, IN-ACT & LS=FORG
5) bo ø-szed-ł-ø-ø inny pan-ø,
because IPFV-go-PAST-MASC-3:S another man,
'because another man was coming'. IN-ACT=BACK

English: Sarah (6;6)

1) It's snowing outside. IN-ACT
2) And there's some boys and a man. IN-ST=BACK
3) And the boys are throwing a snowball at the man. IN-ACC=BACK
4) But he ducked. EX-ACH=FORG

5) And then the dog is barking. IN-ACT & LS=FORG
6) And then the man is going to throw a snowball.
IN-ACC & LS=FORG
7) And the boys are running away. IN-ACH=BACK
8) And the dog is following them a little. IN-ACT=BACK
9) And then there's a lady. IN-ST & LS=FORG
10) And she has a snowball on her head, IN-ST=BACK
11) 'cause the man hitted her, hit her with the snow. EX-ACH & Because=BACK
12 And the man and the dog are running away. IN-ACH=BACK

Appendix C

Finnish

Situational aspect decision rules. This is a truncated version of the rule system showing two examples for each predicate type.

STATES

1. Do not occur in the progressive or durative
   * Lumi on peittä-mä-ssä maan.
   * Lumi on peitt-elle-mä-ssä maan.
   * ? Lumi peitt-ele-e maan.
   Snow is covering the ground.
2. Do not occur as complements of "pakottaa" (force) and "suostuttaa" (persuade)
   * Maija pakotti minut ymmärtämään sen.
   Maija forced me to understand it.
   * Matti suostutti Maijan tietämään sen.
   Mathew persuaded Maija into knowing it.

ACTIVITIES

1. Do not take "tunnissa" (in an hour) like complements.
   * Pekka juoksi tunnissa.
   Pekka ran in an hour.
2. "Pekka on juoksemassta" (Pekka is running) or „Pekka lakkasi juoksemasta" (Pekka stopped running) entails that "Pekka on juossut" (Pekka has run) is true.

ACCOMPLISHMENT

1. Do not take "viikon" (for a week) like complements.
   * Pekka rakensi talon viikon.
   Pekka built a house for a week.
2. "Pekka lakkasi rakentamasta taloa" (Pekka stopped building a/the house) does not entail that "Pekka on rakentanut talon" (Pekka has built a/the house) is true.

ACHIEVEMENTS

1. "Pekka huomasi taulun sekunnissa" (Pekka noticed the painting in a second) does not entail that Pekka was noticing the painting during this second.
2. Cannot be a complement of "lopettaa" (Finnish)
   * Pekka lopetti taulun huomaamisen.
   Pekka finished noticing the painting.

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