Aspect, tense and modality: theory, typology, acquisition
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Chapter 9

Functions of TMA in Child English

9.1 INTRODUCTION

As was discussed in the introduction to Part III, it is often reported that there are strong associations in child language between tense or aspect morphology on the one hand and situation type on the other hand. The following associations are reported for different languages:

- Imperfective or progressive with activities, [+dynamic, -telic]
- Perfective or past tense with telic events, [+dynamic, +telic]2
- Imperfective or present tense with states, [-dynamic].

Associations in first language acquisition between tense/aspect morphology and situation type appear to hold across languages, e.g. in Mandarin (Erbaugh 1978), Turkish (Aksu 1978), Greek (Stephany 1981, 1997), Japanese (Shirai 1998) and English (Shirai & Andersen 1995), but they are not as strong in every language. The associations have also been shown to hold in the input (e.g. Aksu-Koç 1998; Andersen & Shirai 1996; Stephany 1981). However, the distribution in adult-adult interaction has not been examined in most studies, with the exception of Stephany’s study on Greek (1981) who found close similarities between patterns in adult and child language.

Various explanations have been proposed for the correlations found in child language, for example that the grammatical markers encode situation type rather than grammatical aspect or tense (e.g. Antinucci & Miller 1976; L. Bloom et al. 1980; Bronckart & Sinclair 1973). This deviating use of the morphemes would stem from a cognitive limitation to mark temporal deixis. This is referred to as the Aspect Before Tense or the Aspect First Hypothesis. A related explanation is the Prototype Account (P. Li & Shirai 2000; Shirai 1991, 1994; Shirai & Andersen 1995). On the basis of distributional analysis, children would

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1 An earlier version of this chapter appeared as Boland (2003).

2 Some studies report that the association holds for punctual telic verbs (e.g. Shirai & Anderson 1995), while others report an association with telic verbs in general (e.g. Tomasello 1992, Clark 1996).
create semantic representations of tense/aspect morphology that are restricted to the prototypical situation type of the morphological category. The semantic representation thus excludes the combination of morphology with non-prototypical members.

If these explanations are correct, then this has important consequences for testing the predictions of the Scope Hierarchy. The Scope Hierarchy predicts that there are no languages that do not linguistically encode the modification of the predication (function of \( \pi_2 \)-operators) if they do not also linguistically encode the modification of the predicate (function of \( \pi_1 \)-operators). However, if the TA forms in early child English denote situation type, then they do not serve as modifiers of the predication or the predicate. Children, then, would not use the TA forms for expressing the semantic functions of tense and aspect and these forms should not be considered operators.

In this chapter part of the data on English language acquisition will be re-examined to find out whether there are grounds for interpreting the early tense and aspect forms as marking situation type. This is done by comparing the distributions of unmarked and marked combinations in child data, input language and adult-adult interaction.

In most studies on the acquisition of aspect, there are no data presented on the association between tense/aspect morphology and situation type of that specific language in adult-adult conversation. It is however necessary to know how ‘natural’ the association is between tense/aspect encoding and situation type, to make sure that the association is specific for child language, in other words that there is indeed a phenomenon to explain. The first question to be addressed here is: what is the distribution of different combinations of tense/aspect morphology and situation type in adult English? This will be discussed in 9.3.1. The second question that will be examined in this chapter is whether the association between tense/aspect morphology and situation type in child language differs from that found in adult language. Only if children behave differently from the target pattern, is it meaningful to investigate the factors that influence the distributional patterns in child language. The development in child language will therefore be investigated in 9.3.2. Thirdly, a possible correlation between the distribution in the input and in child language is explored. It was shown in the previous chapter that language directed to children differs from what adults do when they converse among themselves and it might be the case that the distribution of situation types over morphology in input to children differs from adult-adult interaction. The patterns found in child language might be a reflection of the distribution in the input. Whether input language differs from adult-adult language and whether child language indeed reflects input language is examined in 9.3.3.
The next step will be to evaluate the explanations for the associations in child language between tense-aspect morphology and event type (9.4). The distribution patterns of prototypical and non-prototypical combinations in the different types of data give reason to propose an alternative explanation for the associations in child language, the Discourse Topic Hypothesis (9.4.3). This hypothesis states that there is a close relation between discourse topics and the use of specific linguistic forms. It includes the cognitive and communicative development of children and accounts for the patterns found in child language, input language and adult-adult language. The Discourse Topic is tested in 9.5 by analyzing the linguistic contexts in which the associations do and do not occur and by exploring the discourse topics in the different data sets.

9.2 Methodology

9.2.1 Data selection

The data used for examining the distribution of tense-aspect morphology over situation type are a selection of the data that were used for the analysis in Chapter 8 and discussed in 8.3.2. The distribution in adult speech is investigated in the adult-adult data of the SBCSAE (Dubois 2000), consisting of the spontaneous conversations of eight adult speakers. The distribution in child language is investigated in the samples of Naomi (Sachs 1983), Nina (Suppes 1973) and Abe (Kuczaj 1976). Of Naomi, the samples at age 1;6, 1;9, 2;0, 2;3, 2;6 and 3;0 are examined. Nina’s samples are examined at 2;0, 2;3, 2;6 and 3;0 and Abe’s samples at 2;6, 3;0, 3;6, 4;0, 4;6 and 5;0. Each child sample consists of 750 child utterances. Finally, the input data to two of the three children, Nina and Abe, is used to examine the distribution of tense-aspect morphemes over situation type in the input language. The input to Nina is investigated at 2;0, 2;6, and 3;0 and for the progressive also at 2;3. The input to Abe is investigated at 2;6, 3;0, 3;6 and 4;6. All adult utterances addressed to the child in these samples are included in the study.

9.2.2 Coding

In the samples, all finite verbs with simple present, progressive or simple past (regular and irregular) inflection were coded for form and situation type. Simple present tense forms include forms with third person singular –s and zero forms that correctly occur with a non-third person singular subject. Every targetlike combination of a subject and a present tense form, such as I want, he has, it looks like … etcetera, was encoded as simple present. For the progressive and the simple past, only the inflection (not the presence of a subject) was taken as a
criterion for inclusion, since here, the choice of the inflection is not dependent on the type of subject.

The coding of situation types in this study is restricted to the oppositions between [-dynamic] and [+dynamic] situations and then, within the category of [+dynamic] situations, between [-telic] and [+telic] situations. See Figure 9-1 for a schematic representation of the different event types distinguished in this study. In 3.2 situation types have been discussed in detail. The term state is used for all [-dynamic] situations. The term activity is used for all [+dynamic / -telic] situations, including the category of semelfactives (C. S. Smith 1991) and the term telic event is used for all telic events, including both the accomplishments and achievements of Vendler’s verb classification (1967).

![Figure 9-1. Classification of event types](image)

Since the internal structure of a situation does not depend on the verb alone (see 3.2) the analysis of situation types is based on the situation described by the bare verb (without tense and aspect marking), its arguments and adjuncts. Note that the classification of situations is a classification of the inherent semantics of a verb and its arguments and not a classification of “real” situations. Real situations can be viewed in various ways, even within one language: *John was very scared of the dog* or *the dog scared John enormously* both express that John was very afraid of the dog (Dik 1997a: 125), but in the first example this is described as a state and in the second example as a telic event. It is language-specific how real world events are described linguistically and it is also dependent on the individual speaker how a specific real world event is presented.

A situation is classified as a state, when it is static and stable, when it lacks ‘shifts in variation’ and ‘consist of an undifferentiated period’ (C. S. Smith 1991: 37). Moreover, the criterion of input of energy is used:

With a state, unless something happens to change that state, then the state will continue (...). With a dynamic situation, on the other hand, the situation will only continue if it is continually subject to a new input of energy. (Comrie 1976: 49)
Although there is considerable agreement in the literature on the definitions of states and non-states, no linguistic test is available that unequivocally distinguishes states from non-states. Clear examples of activities are run in the park, take pictures, cry, and read and clear examples of states are know John, feel sorry, own a house and live in Florida. The former situations have internal dynamics and require input of energy to last in time. The latter situations, in contrast, have no internal variation and do not require an input of energy to continue. Although most situations can be classified unproblematically, there are some situations such as wear (a sweater), hold (a basket), wait (for the train), sleep, dream, position verbs like stand and sit, and perception verbs like see, hear or listen, of which it is less clear how they should be classified. These verbs are all rather common in child language. For these situations it is disputable whether they have internal dynamics and whether they require an input of energy. Shirai & Andersen (1995) in their research on English have classified each verb as an activity that yields a habitual reading in the simple present tense (as opposed to its use in the progressive), thus including position verbs. I, however, agree with Smith (1991: 250) and Comrie (1976: 37) that position verbs like stand, sit and lie describe a state even though they often occur in the progressive. With progressive marking, these verbs refer to a state that is temporary, whereas in the simple present they refer to a permanent state. It is, however, in both cases a state that is referred to, and not an activity. Only when verbs refer to a particular stance—for example Mary was sitting up as straight as she could (from C. S. Smith 1991: 250)—is the situation classified as an activity. Other verbs that occur in the progressive but seem to lack any internal variation are wait, hold, live (somewhere) and wear (clothes). They are all classified as states. Two other problematic cases are sleep and dream. In this study they are both analyzed as an activity, as opposed to be asleep, or have a dream that are analyzed as states. Finally, perception verbs are classified as state if they describe an non-controlled event, such as see or hear, and as activities if they describe a controlled event, such as look or listen.

Dynamic situation types can be divided into atelic and telic: telic events involve a certain change of state, whereas atelic events (activities) do not. Telic events describe ‘a process that leads up to a well-defined terminal point, beyond which the process cannot continue.’ (Comrie 1976: 45). As discussed in 3.2 the best test to distinguish telic from atelic events is to use the question in (1):

(1) If X is interrupted in the course of V-ing, has he then V-ed?

If the answer to this question is ‘yes’, the situation is encoded as atelic. If the answer is ‘no’ it is classified as telic. For example, the answer to the following question is positive: If Mary is interrupted in the course of searching for a
stamp, has she then searched for a stamp? Searching for a stamp is therefore classified as an activity. In contrast, the answer to If Mary is interrupted in the course of writing a letter, has she then written a letter? is negative and writing a letter is classified as a telic event. Most samples were first coded by a research assistant and completely checked by me. In order to test inter-coder reliability, two samples were independently coded by both. Cohen’s kappa was calculated and the score was >.95. The reliability of the coding was thus satisfactory.

9.3 RESULTS

9.3.1 Distribution in adult-adult language

In the adult conversations, there were in total 995 tokens of a simple present, progressive or simple past that were all coded for situation type. The distribution of situation type over tense/aspect morphology was analyzed at first for each adult individually. The distributions presented in Figure 9-2 are the weighted means of these distributions.

![Figure 9-2. Proportions of event types for simple present (N =569), progressive (N =121), and simple past (N =305) in American English adult-adult conversation](image)

The conversational data of adults show a strong association between simple present and states (mean 75%), between progressive and activities (mean 60%) and between simple past and telic events (mean 59%). Hereafter, these combinations will be referred to as the unmarked combinations. Of all the

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3 In fact, in an earlier stage of the research, not only the predicates that were marked for present, past and progressive were coded for situation type, but all predicates in the sample. Cohen’s Kappa is based on all these codings of situation type.
simple present tokens only 8% combines with activities and 17% with telic events. The progressive combines with states in 19% of all cases and with telic events in 21% of all cases. Of all the past tokens 29% combines with states and 12% with activities. All these combinations will be referred to as marked.

To conclude, there is a level of association between tense/aspect morphology and situation type that is perfectly natural in conversational adult English: about 60% association between progressive and activities and past and telic events and 75% between present and states. The question is whether children differ from this pattern of associations in their production. Only in so far as the associations in English child language are stronger or weaker than the adult-adult level or different altogether, is there a phenomenon specific for child language that needs explaining. Therefore, the distribution in the child samples will be investigated.

9.3.2 Distribution in child language

In the literature on the acquisition of tense/aspect morphology in English (L. Bloom et al. 1980; Clark 1996; Shirai 1991; Shirai & Andersen 1995; Tomasello 1992) there is agreement that the progressive in early child language is overwhelmingly used with activities and the past with telic events, figures running up to 90 or 100%. The study of the simple present is restricted to the acquisition of third person singular –s and here the results are not very consistent or not reported at all. These studies suggest that there is indeed a difference between adults and children. Whether this is indeed the case can only be examined when child and adult data are analyzed in the same way, as was done in this study. The \( \chi^2 \)-test was applied in order to find out whether the distribution in the child samples is significantly different from the distribution in the adult sample. Like in Chapter 8, the \( \chi^2 \)-test is applied when fewer than 20 percent of the cells have an expected frequency less than 5 and if no cell has an expected frequency less than 1 (Siegel & Castellan 1988: 123). Whenever the \( \chi^2 \)-test could not be applied on the three separate categories because the expected frequencies were too low, the two categories that form a marked combination with the morphology were combined for the analysis and the Fisher’s Exact test is used to calculate p, if possible: this is always described in the text. The significance level was again set at \( \alpha = .01 \), like in 8.5.2, as the number of analyses is quite large. The results are presented separately for each morpheme: first the use of the progressive is discussed, then the use of the simple past and finally the use of the simple present. The distributions for each child are presented in figures, showing the relative frequencies. The rightmost column presents the distribution in the adult sample. All samples that contain the relevant morphemes are presented in the columns.
9.3.2.1 **Progressive**

Figure 9-3 to Figure 9-5 display the proportion of situation types in the progressive in child language for each child. The rightmost column in each figure presents the distribution of situation types in the progressive in the adult conversations, which was also presented in Figure 9-2. In this sample, 21% combines with telic events, 60% with activities (unmarked combination) and 19% with states.

At 1;9, 2;3 and 2;6, Naomi’s distribution of situation types in the progressive (Figure 9-3) is not different from what adults do (at 1;9, $\chi^2 = 3.3$, $p = 0.19$; at 2;3, $\chi^2 = 3.88$, $p = 0.14$; at 2;6, $\chi^2 = 7.99$, $p = 0.02$). At 2;0, the marked combinations (states and telic events) had to be added up in order to apply a statistical test. Although this yielded a non-significant difference with Fisher’s Exact test ($p = 0.12$), it is remarkable that there are no states in Naomi’s data. The sample at 3;0 is significantly different from the adult sample, mainly due to a far greater proportion of telic events (63%) in the progressive ($\chi^2 = 20.47$, $p < .001$).

The results for Nina are presented in Figure 9-4. At age 2;0 the marked combinations (with states and telic events) had to be combined in order to be able to apply a statistical test: Fisher’s Exact test did not yield a significant difference with the adults ($p = 0.81$). It is however remarkable that Nina does not use the progressive with telic events at all. At 2;3 the distribution in Nina’s progressives is significantly different from the adult sample ($\chi^2 = 34.38$, $p < .001$) in that her proportion of telic events is larger (74%) and of activities and states smaller. At 2;6 states and telic event were taken as one category; then, there was no significant difference ($p = 0.77$) with the adult-adult distribution. At 3;0 there was no significant difference either ($\chi^2 = 3.13$, $p = 0.20$).

Figure 9-5 provides the results for Abe. At 2;6 the unmarked categories had to be combined which yielded a significant difference from what adults do (Fisher’s Exact, $p < .001$): the proportion of telic events is larger (80%) and there are fewer states (none at all) and activities. From age 3;0 the proportions of situation types in Abe’s progressives are similar to the adult sample.

To summarize, these data show that the association between activities and the progressive in child language is never stronger than in adult language. Where children, however, do differ from adult language is that there is at least one sample for each child in which telic events form the largest part. Furthermore, the samples of Naomi at 2;0, Nina at 2;3 and Abe at 2;6 contain no or hardly any states and the language of Nina at 2;0 does not contain a single telic situation.
Figure 9-3. Naomi’s use of progressive: proportions of different situation types (at 1;6, N =0; at 1;9, N =37; at 2;0, N =32; at 2;3, N =37; at 2;6, N =39; at 3;0, N =30)

Figure 9-4. Nina’s use of progressive: proportions of different situation types (at 2;0, N =11; at 2;3, N = 35; at 2;6, N =16; at 3;0, N = 30)

Figure 9-5. Abe’s use of progressive: proportions of different situation types (at 2;6, N = 25; at 3;0, N = 34; at 3;6, N = 41; at 4;0, N = 29; at 3;6, N = 42; at 5;0, N = 49)
9.3.2.2 **Simple past**

In Figure 9-6 to Figure 9-8 the proportions of situation types in the past tense are presented. The column on the right presents the distribution in the adults’ conversations, already presented in Figure 9-2. The distribution at the adult stage is 59% with telic events, 12% with activities and 29% with states. The unmarked use of the past tense is thus with telic events.

Naomi’s use of the simple past is presented in Figure 9-6. At 2;0 the expected cell frequencies were too low to apply a statistical test, but the proportion of telic events is large (80%, N = 10). For all the other samples Fisher’s Exact test could be applied when the marked situation types (states and activities) were taken as one category. Contrary to expectations based on the literature, there were no significant differences found between Naomi’s distribution and the adult distribution: the association between past tense and telic events is strong, but not stronger than in the adult sample. However, within the group of marked combinations, the proportion of states of Naomi’s past tense forms is always small.

Nina’s use of past forms is presented in Figure 9-7. At age 2;0 and 2;3 no statistical test could be applied because of the low expected frequencies. There were no states and activities at all. The association between past and telic events is here thus 100%, which is in accordance with results reported in the literature. It should be noted, however, that at 2;0, the only past forms that Nina used was eleven times *gave*, at 2;3 Nina uses only two tokens: *mashed* and *fell down*. This suggests that the past tense is by no means productive at these ages. At 2;6, states and activities had to be combined in order to apply the Fisher’s Exact test. This yields a near significant difference (p = 0.01): the proportion of telic events in Nina’s language (93%) is larger than in the adult sample. At age 3;0 there is no significant difference ($\chi^2 = 5.44, p < .07$).

Abe’s use of the past is presented in Figure 9-8. At 2;6 the proportion of states is smaller and of telic events larger (82%) than in the adult sample ($\chi^2 = 9.86, p < .01$), which is in accordance with the literature. At 3;0 there is no significant difference. Contrary to expectations, at 3;6 the proportion of activities is larger (27%) and of telic events smaller (57%) than in the adult sample ($\chi^2 = 17.22, p < .001$) and also at 4;0, the proportion of activities (24%) is larger than in the adult sample ($\chi^2 = 9.31, p < .01$). This was not expected on the basis of the literature. At 4;6 and 5;0 there are no differences between Abe’s speech and the adult sample.

To sum up, the data show that the associations between past tense and telic events is not specific for child language, but the association in child language seems to be stronger for all children up to age 2;6. This confirms earlier findings. Note, however, that the number of tokens and types is small which suggests that the past inflection is not yet productively used. Finally, there are a
Figure 9-6. Naomi’s use of simple past: proportions of different situation types (at 1;6, N = 0; at 1;9, N = 0; at 2;0, N = 10; at 2;3, N = 20; at 2;6, N = 25; at 3;0, N = 31)

Figure 9-7. Nina’s use of simple past: proportions of different situation types (at 2;0, N = 11; at 2;3, N = 2; at 2;6, N = 14; at 3;0, N = 42)

Figure 9-8. Abe’s use of simple past: proportions of different situation types (at 2;6, N = 49; at 3;0, N = 100; at 3;6, N = 129; at 4;0, N = 128; at 3;6, N = 158; at 5;0, N = 129)
few samples (Abe at 3;6 and 4;0 and the samples of Naomi) in which the proportion of activities is remarkably large. In all child samples the proportion of states is smaller than in the adult sample.

9.3.2.3 Simple present

In Figure 9-9 to Figure 9-11 the proportions of situation type for the simple present are presented. The column on the right presents the distribution in the adult sample. In the adult data, the present tense combines with telic events in 17% of the cases, with activities in 8% and with states in 75% of all cases.

For Naomi’s data at 1;9 (N = 3) and 2;0, (N = 1) (Figure 9-9) no statistical test could be applied, since the expected frequencies are too small. At 2;3, when marked situation types are combined, Fisher’s Exact yields a significant difference (p < .001): the proportion of states is larger than in the adult sample (98%). At 2;6 there is no significant difference ($\chi^2 = 3.34, p = 0.19$). At 3;0 the difference is significant ($\chi^2 = 12.05, p < .01$) in that Naomi’s proportion of states is larger and of telic events smaller than in the adult sample.

At age 2;0, Nina does not use a single form of the simple present (Figure 9-10). At 2;3, activities and telic events have to be combined. Fisher’s Exact test does not yield a significant difference between Nina and the adult sample (p = .05). At age 2;6 Nina’s language differs significantly ($\chi^2 = 10.04, p < .01$) from the adult sample in that her proportions of activities and telic events are smaller and of states larger (92%). At 3;0, there is no significant difference.

At 2;6, Abe’s data (to Figure 9-11) are significantly different from the adult sample ($\chi^2 = 19.03, p < .001$): Abe’s proportion of states is larger (95%) and of activities and telic events smaller. There is also a significant difference between Abe 4;0 and the adult sample ($\chi^2 = 9.73, p < .01$): once more Abe uses more states (88%) and fewer activities and telic events than the adults. The other samples (3;0, 3;6, 4;6, 5;0) do not differ from the adults.

In sum, the data show that the association between simple present and states is in general stronger in early child language than in adult language. Between the ages of 2;6 and 4;0 the association gets weaker and reaches the adult level.
Figure 9-9. Naomi’s use of simple present: proportions of different situation types
(at 1;6, N = 0; at 1;9, N = 3; at 2;0, N = 1; at 2;3, N = 50; at 2;6, N = 64; at 3;0, N = 83)

Figure 9-10. Nina’s use of simple present: proportions of different situation types
(at 2;0, N = 0; at 2;3, N = 25; at 2;6, N = 65; at 3;0, N = 46)

Figure 9-11. Abe’s use of simple present: proportions of different situation types
(at 2;6, N = 88; at 3;0, N = 100; at 3;6, N = 145; at 4;0, N = 128; at 4;6, N = 121;
at 5;0, N = 44)
9.3.2.4 Conclusion

The results from the children’s data show that there is a difference between the associations of morphology and situation types in adult and child English. The earliest samples on the association between progressive and activities is not significantly stronger than in adult-adult language. However, the children’s usage differs on one count: in at least one sample of each child the association between the progressive and telic events is strong. This result is unexpected from the reports in the literature. Furthermore the association between progressive and states is very weak in at least one sample of each child. Secondly, the association in early child language between past and telic events is stronger in child language than in adult English, which is in accordance with the reports in the literature. Furthermore, the proportion of states in the simple past is remarkably small and the proportion of activities is sometimes larger than in the adult samples. Thirdly, the association between present and states is stronger in child than in adult language and only gradually weakens. The question thus arises why children differ from adults on these points: why are there differences in distribution?

9.3.3 Distribution in the input

In this section the association between situation types and progressive aspect and past and present tense will be examined in the input language to Nina and Abe. Is the distribution in the input different from the distribution in adult language and does it account for the patterns found in child language, more specifically: a strong association between progressive aspect and telic events in a few samples, a strong association between past tense and telic events and between present tense and states? The distribution in the input samples is compared to the adult distribution by using the $\chi^2$-test, or, if the expected cell frequencies are too low, the Fisher’s Exact test. In those cases the marked categories are combined into one category. The input is studied with larger intervals than the child samples.

9.3.3.1 Progressive

Figure 9-12 and Figure 9-13 present the results for the progressive. The results for the child and the input in one sample are presented in columns next to each other at each age. The rightmost column displays the distribution in the adult-adult conversations.

First, the distributions in the input and in the adult sample are compared. The input to Nina at age 2;0 is similar to the distribution in the adult sample (Figure 9-12). At 2;3 the input is significantly different from the adult sample ($\chi^2 = 15.46, p < .001$) in that the proportion of telic events is larger (34%) and
of states smaller (3%). In the other samples the input is comparable to the adult sample. Second, the distributions in the input and in Nina’s samples are compared. The difference between the use of the progressive in the input and in Nina’s language at 2;0 and at 2;3 could only be computed when the marked combinations (states and telic events) are added up. At 2;0 there is no significant difference. At 2;3 there is a significant difference (p < .001), in that the proportion of activities in the input is larger than in Nina’s speech and the combined proportion of telic events and states is smaller than in Nina’s speech. This difference can be explained by the mother’s frequent use of the questions: what are you doing? and who are you hammering?, that are analyzed as activities. In the other samples, input and child language are comparable.

Figure 9-12. Input to Nina: proportion of situation types in progressive (input at 2;0, N =52; at 2;3, N =102; at 2;6, N = 15; at 3;0, N =64)

Figure 9-13. Input to Abe: proportion of situation types in progressive (input at 2;6, N = 33; At 3;0, N = 34; At 3;6, N = 19; at 4;6, N = 16)
For Abe, the distribution in the input and in the adult-adult sample are first compared. The input to Abe at 2;6 (Figure 9-13) differs significantly from the adult sample ($\chi^2 = 24.11, p < .001$) at 2;6 in that the proportion of telic events is larger in the input (64%) than in the adult sample and there are no states at all. The difference between the input at 3;0 and the adult sample is near significance$^4$ ($\chi^2 = 8.96, p = 0.011$) because of a larger proportion of telic events in the input (47%). There are no further differences between the input and the adult sample. Second, the distribution in the input and in Abe’s speech is compared. It appears that there are no significant differences between Abe’s language and the input.

In sum, the distribution in the input can to a large extent account for the patterns of use of the progressive in the child samples. The input differs in similar ways from the adult-adult conversation as the child language does: the association between telic events and the progressive is stronger in the input than in adult-adult language and the association between states and the progressive is in a few samples weaker. The correlation between input and child language is high: for Abe there are no differences at all and for Nina only in the beginning. At 2;3 the proportion of telic events in Nina’s language is larger and of activities smaller than in the input, but this can be explained by the repeated questions of the mother.

### 9.3.3.2 Simple past

Figure 9-14 and Figure 9-15 present the distributions of situation types in the simple past. First, the distributions in the input samples to Nina (Figure 9-14) are compared to the adult sample. At age 2;0 the proportion of telic events in the input is larger and of states smaller than in the adult sample, but the distinction is not significant$^3$ ($\chi^2 = 8.37, p = 0.015$). At age 2;6 and 3;0 the distributions are significantly different ($\chi^2 = 20.33, p < .001; \chi^2 = 27.16, p < .001$), in that in the input the proportions of activities are larger (28%, 25%) than in the adult sample (12%) and the proportions of states smaller (10%, 18%) than in the adult sample (29%).

Secondly, the distribution in the input and in Nina’s speech was compared. At 2;0 and 2;6, the difference could not be calculated as the expected frequencies were too low for Nina’s speech. The previous section showed that in the sample at 2;6, Nina’s proportion of telic events is very high compared to the adult-adult sample. The same pattern appears in the input at 2;6, but has disappeared in the input at 2;6 and 3;0. At 3;0, the states and activities were

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$^4$ As discussed in 9.3.2, $\alpha = 0.01$. 

$^3$ As discussed in 9.3.2, $\alpha = 0.01$. 

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Figure 9-14. Input to Nina: proportions of situation types in simple past
(input at 2;0, N = 78; at 2;6, N = 89; at 3;0, N = 184)

Figure 9-15. Input to Abe: proportions of situation types in simple past
(input at 2;6, N = 57; at 3;0, N = 92; at 3;6, N = 72; at 4;6, N = 68)

combined; Fisher’s Exact test did not yield a significant difference between
input and child language (p = 0.19).

When the input to Abe is compared to the adult-adult distribution (Figure
9-15), there is a significant difference at 3;6 ($\chi^2 = 18.84$, p < .001) in that the
proportion of activities is larger in the input (33%) than in the adult sample
(12%). The other samples show no differences. When the input is compared to
Abe’s language, there are no significant differences between Abe’s language and
the input language.

To sum up, the distribution in the input can account partly for the
distribution in child language. The association between past tense and telic
events is stronger in the early input (Nina at 2;0). In many input samples the
proportion of states is smaller and/or the proportion of activities larger than in the adult sample (Nina at 2;6 and 3;0, Abe at 2;6 and 3;6). This was also the case in child language (although not always in the same samples). The correlation between input and child language is high: for the samples for which it could be calculated, there are no significant differences between the child’s speech and the input.

9.3.3.3 Simple present

The proportions of event types in the simple present are presented in Figure 9-16 for the input to Nina and Figure 9-17 for the input to Abe.

The input to Nina is first compared to the adult sample. In the input sample at 2;0 the proportions of activities (2%) and telic events (7%) are smaller than in the adult sample and the proportion of states is larger ($\chi^2 = 11.96, p < .01$). At 2;6 there are no significant differences between the distribution in the input and the adult sample ($\chi^2 = 0.46, p = 0.79$). At 3;0, although the proportion of activities is larger in the input than in the adult sample it does not lead to a significant difference ($\chi^2 = 0.46, p = 0.79$; at 3;0, $\chi^2 = 7.71, p = .02$).

The input to Nina is also compared to Nina’s speech. At 2;0, Nina does not yet use present tense forms. At 2;6, the proportion of states in Nina’s speech (92%) is a bit larger than in the input (77%), but this difference is not significant ($\chi^2 = 7.38, p = .025$). At 3;0 there is also no difference between input and child ($\chi^2 = 1.92, p = .38$).

The input to Abe is first compared to the adult sample. There appear to be no significant differences at all ages. When the input is compared to the speech of Abe, there is a significant difference only at 2;6. The activities and telic events had to be combined in order to apply Fisher’s Exact test ($p < .001$). The proportion of states is larger in Abe’s speech (95%) than in the input (79%): in contrast to the input, no present tenses are combined with activities in Abe’s speech and only a few telic events.

In sum, the distribution in the input partly accounts for the distribution in the child language. In the early sample (input to Nina at 2;0) the association between states and simple present is stronger in the input than in the adult sample. From age 2;6, both in the input to Nina and to Abe, the association between states and simple present is equal to the association in the adult sample. Child language and input are very similar, although Abe 2;6 differs from the input in that the association between states and simple present is stronger in child language than in the input. The same pattern is observable in the present tenses of Nina at 2;6, but this is not significantly different from the input.
9.3.3.4 Conclusion

The examination of the input data shows that parents adapt their speech when talking to young children. The associations between tense/aspect morphology and situation type differ from what adults do when they speak to adults. In the speech to young children there is a stronger association between progressive and telic events, a stronger association between past tense and telic events and a stronger association between present tense and states. Furthermore, the associations between progressives and states and between past tense and states are weaker than in adult-adult language, and the associations between past tense and activities are stronger in the input than in adult-adult language.
The distribution of situation types over morphology in the input is the language that children hear. It is the basis on which they build up their own language. The fact that the distribution of situation types in child language is skewed compared to adult-adult conversations is therefore not remarkable insofar as it is similar to the distribution in the input. The results show that the correlation between input and child language is strong, and that the distribution in the input can account to a large extent for the distribution in child language: the strong association between progressive and telic events in a few samples, the strong association between telic events and past tense, the small proportion of states and relatively large proportion of activities in the past tense. There are, however, a few differences that cannot be accounted for by the input: although the association in the input to young children between past and telic events and between present and states is stronger than in adult-adult language, these associations are even stronger in child language.

It seems a logical consequence that the distribution in child language will differ from adult language when the language addressed to children is also different. Nevertheless, the questions remain why parents adjust their language directed to children and why the patterns in child language are more different from the adult distribution than the patterns in the input.

9.4 EXPLANATIONS

Several explanations have been formulated as the basis for the strong associations in child language between tense/aspect morphology and situation type. One of the explanations is the distribution in the input. Section 9.3.3 has shown that the input can indeed account for the greater part for the distribution in child language. However, although the association between situations types and morphology in child directed speech is skewed compared to adult-adult speech, the association in child language is skewed even more. An explanation needs therefore to account for the differences between child-directed and adult-directed speech and between input and child language. First, the Aspect Before Tense Hypothesis and the Prototype Account will be evaluated. In 9.4.3 an alternative hypothesis is proposed, the Discourse Topic Hypothesis.

9.4.1 Aspect Before Tense Hypothesis

The Aspect Before Tense Hypothesis claims that tense and aspect morphology at the early stages do not encode tense or aspect, but rather situation type. The observed patterns are then a consequence of cognitive limitations of the child who does not yet have a concept of temporal relations. Inflection is thus
redundant in the early stage: it marks what is already inherently present in the semantics of the verb and its arguments.

If inflection indeed functions as a marker for situation type, the system in the child language should be consistent: one inflection for one class of situation types, one form for one function. However, as the child data show, the progressive is used from the start for different situation types and the same holds for the past in Naomi’s and Abe’s speech and the present in Nina’s and Abe’s speech. Furthermore, during development, there is never complete regularity. The same inflection can occur with different situation types and the same situation type can occur with different inflections. The findings go against an absolute version of the Aspect Before Tense Hypothesis.

Shirai & Andersen (1995: 746) state that the Aspect Before Tense Hypothesis could be viewed either as an absolute statement—only telic verbs receive past inflections—or as a tendency—past inflection is predominantly used with telic verbs. The less stringent version, however, entails that the child would apply different strategies at the same stage: whenever past inflection is used with telic verbs, the child encodes resultant state or telicity, but what does the child do whenever the inflection is used with atelic verbs? Would the child then apply a different strategy, for example: encode tense or encode nothing? In other words, if we accept a less stringent version of the Aspect Before Tense Hypothesis, we would also have to accept that a child might have different semantic representations for the same morpheme that are dependent on the class of verbs with which it combines: in combination with the unmarked situation type, the morpheme marks situation type, whereas in combination with the marked situation type, it marks something else. This position seems very undesirable. A further disadvantage of this hypothesis is that it does not answer the question how and why a child would start to reanalyze the morphemes as tense/aspect markers instead of situation type markers. And why would children grammatically encode situation type, although adult languages across the world in general lack grammatical encoding of situation types? What is more, the findings in the previous sections are consistent with alternative explanations: the inflection could be part of an unanalyzed item, or, even though it occurs predominantly with one situation type, the inflection could nevertheless mark tense and aspect. There is no independent motivation that favors the encoding of situation type. A final objection to the Aspect Before Tense Hypothesis is that it cannot account for the patterns in the input. The distribution in the input is also skewed and presumably not because of a non-normative use of the inflections so why would parents change their language in this way?
9.4.2 Prototype Account

The Prototype Account claims that children on the basis of distributional analysis create semantic representations of tense-aspect morphology that are restricted to the prototype of the morphological category. According to Li & Shirai (2000: 62-63) children acquire unanalyzed verbs during the first stage of language learning, on a verb-by-verb basis. Lexical representations during this stage consist of memories of past experiences. During the second stage, children notice repeated similarities in the form-function mapping. They become aware of the fact that there are ontologically distinct types of situations. In the third stage children learn to map linguistic forms to these different situations: since parents for the majority use -ing to comment on ongoing activities, the child will create a prototypical semantic representation for the morpheme -\textit{ing}, that is restricted to activities and semelfactive verbs, or in other words, to verbs that are characterized by the features [+dynamic, -telic]. The general meaning that -\textit{ing} denotes would be ‘Action in Progress’ (2000: 66). Li & Shirai assume that:

> children, on the basis of the comprehension of verb forms prior to active production, have already created a restricted semantic representation of morphological forms, even though their early morphology may appear as if it were entirely driven by lexical learning. (2000: 64)

The Prototype Account is, however, not in every respect compatible with the data. According to Li & Shirai’s prototype of the progressive children are expected to rarely use -\textit{ing} for telic events neither with durative (accomplishment) nor with punctual (achievement) situations. The proportion of telic events is, however, high in Nina at 2;3, Abe at 2;6, Naomi at 2;6 and 3;0 and also in the input to Nina at 2;3, and to Abe at 2;6 and 3;0.

Moreover, from a prototype view, the first inflected verbs in the input or the first inflected verbs used by the child must be prototypical examples of the situation types. However, in the earliest sample of Nina (2;0) and the input to Nina at this age, the progressives are not very prototypical. First, in the input, the verbs used with a progressive are not all prototypical activities. Of all the progressives used in the input, 54% of all tokens ($N = 52$) is classified as [+dynamic, -telic], but 46% it [+telic] or [-dynamic]. Of all the types used with a progressive in the input to Nina, eleven are classified as [+dynamic, -telic] whereas thirteen are either [-dynamic] or [+telic]. Second, in the speech of Nina, the first verbs with produced with the progressive do not all refer to “prototypical” activities, i.e., to events with clear internal variation that need a constant input of energy. The verbs that Nina uses with progressive inflection at 2;0 are \textit{hold} (something) ($N = 4$), \textit{sleep} ($N = 4$), \textit{move} (something) ($N = 1$), \textit{cry} ($N = 1$) and \textit{walk} ($N = 1$). Only \textit{move} and \textit{walk} would count as prototypical examples of activities. It is therefore highly implausible that the child works from a
(restricted) semantic representation ‘action in progress’ for the progressive when the first examples in her own production are not prototypically dynamic.

The main objection to the Prototype Account, however, lies in the following assumption:

If children’s semantic representation is restricted to this characterization, then whatever does not fit this characterization will not be given progressive marking at the early stage. (P. Li & Shirai 2000: 67, emphasis mine)

And, with respect to the prototype of the past, which is [+telic, +punctual, +result] according to Shirai & Andersen (1995):

As is typical of the prototype to non-prototype development, the restriction to prototype past (...) was gradually relaxed and at a later stage children started using the past tense for verbs lacking one of these features. (P. Li & Shirai 2000: 68, emphasis mine)

Both citations suggest that children might want to encode a certain verb with the progressive or the past, but do not do so because their semantic representations exclude the possibility of that specific combination. This implies that the semantic representations of children are rigid, and that the boundaries are immovable. Nevertheless, the Prototype Account explicitly does not claim that the prototypical semantic representation leads to absolute skewing, but only to tendencies. The question then remains why children use non-prototypical combinations from early on. Like the Defective Tense Hypothesis, the Prototype Account does not explain why parents would adjust their association between morphology and situation type when talking to children.

9.4.3 Discourse Topic Hypothesis

9.4.3.1 Introduction

Neither the Aspect Before Tense Hypothesis nor the Prototype Account explains why parents change the way they talk when they talk to their children. Nor can they account for the findings in child language, that is that associations between morphology and situation type appear to be less regular or prototypical than would be expected on the basis of either hypothesis.

I propose an alternative approach, the Discourse Topic Hypothesis, that relies on the communicative and cognitive development of children. It can account for the differences between the distribution in adult language, in child language and in input to children.

First of all I assume that the acquisition of verbs and their inflection is lexically based. It proceeds on a verb-by-verb basis, by learning which constructions are appropriate for which contexts (Lieven et al. 1997; Pine,
Lieven, & Rowland 1998; Tomasello 1992). Children will acquire first what are the most frequent uses of specific verb-morpheme combinations. As soon as children start using finite or inflected forms, the more experience children have with certain forms, either in production or in reception, the earlier these forms will be acquired. For example, when children more often hear you are naughty than you are being naughty, they will first acquire are naughty and not being naughty. Similarly, when children more often hear I’m running in the context of the speaker running than I run (the marathon) in the context of the speaker describing his hobby, they will first acquire running to refer to an ongoing event and not run to refer to a habit or hobby. Finally, when children more often hear broken than breaking they will first acquire broken to refer to a resultant state and not breaking to refer to the ongoing event of breaking something. What children will gradually grasp is the effect one creates when adding different inflections to a verb stem. For example, when the ending -ing is used the situation is understood as ongoing, without its boundaries being entailed. The progressive does not mean ‘action in progress’; it effectuates the presentation of an event as in progress. The same verb without this ending -ing, in the simple present form, yields a different interpretation, namely, reference to a habitual activity.

Although I agree with the Prototype Account to a certain extent, I differ from this approach in that according to my view there are no prototypical meanings of a morpheme (= semantic representations) such as there are prototypical members of classes, but there are prototypical uses of morphemes (= contexts of use)⁵. The unmarked uses are the combinations that are most relevant and frequent in communication, the “natural combinations” as described in the introduction to Part III. In English, it is for example relevant to present a dynamic situation or a temporary state as ongoing, because it can also be non-ongoing. With respect to a state, it is less relevant to mark ongoingness since a state is inherently without boundaries and the addressee can infer that it is ongoing at speech time when only a present tense is used. It is only relevant to present a state as ongoing by using a progressive when the speaker wants to stress that the state is temporary and controlled, for example being mean vs. be mean (C. S. Smith 1991). Events that are punctual are more likely to have already ended at the moment when one comments on it, so that it will be combined with a present tense or progressive only occasionally. Furthermore, when a change of state has occurred in the real world, this may be very relevant to language users: the natural combination to comment on this is then a past tense and a telic event. Therefore, a combination very relevant to

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⁵ This does not mean that a morpheme has no semantics, only that it has no prototypical semantics. The semantics of a form are similar in each context, but the resultant interpretation, the implications of the form, may be determined by the context and may occur more or less frequently for this form.
communication is between telic events and past tenses, since it not only indicates that the event was actual at a period in time prior to utterance time, but it also entails that the end-state has been reached and that a certain change in the real world has taken place. In contrast, if states and activities are marked by a past, it indicates that the specific state or activity held at a moment in the past, but no resultant effect is implied. These combinations often serve as background information, when talking about events that did involve changes of states.

Certain combinations of morphology and situation type are thus unmarked, i.e., they occur frequently, whereas other combinations are more marked or even semantically odd. This is determined, on the one hand, by the conceptual representation of the real world situation that a verb and its arguments refer to and, on the other hand, by the conceptual representation of the effect produced by grammatical elements. The relevance of particular combinations between morphology and situation type is, however, dependent on the general discourse topic. I will argue that for the discourse topics that young children talk about, the unmarked combinations of tense/aspect morphology and situation type are particularly relevant.

9.4.3.2 Relevant combinations

Which combinations of tense/aspect and situation type are relevant for which discourse topics? For the point I want to make, it suffices to discuss the use of the progressive, simple past, and simple present in relation to the following general discourse topics:

- Talking about the here-and-now
- Describing past events
- Giving general comments on the world, such as generic and habitual statements, social rules, laws etcetera.

Firstly, when speakers of English wish to talk about the here-and-now, to describe observable events or states, whether visible, audible or sensible, they need the following combinations (see 6.2):

- Simple present tense for describing permanent states;
- Progressive for describing temporary states (position verbs, hold, wait, etc.), activities and telic events that have not yet ended;
- Simple past tense for describing a situation that has just ended (immediate past).
With respect to the last point, situations that have just ended are mostly relevant to communication when they have created a change in the world that is relevant to the here-and-now: these are described by telic events. Furthermore, eye-catching events may take place that only last a moment in time so that they have already ended before one can talk about it. These events could be considered as belonging to the topic time of the here-and-now, as they are very salient and interesting to the speaker just before the moment of speaking, but the shortness of duration makes that they can only be referred to by a past tense. They took place before the moment of speaking. Notice that both these combinations result in the combination of a past tense with a telic event, either non-punctual but with a result relevant to the moment of speaking or punctual, with or without a clear result. Talking about the here-and-now thus makes use above all of unmarked combinations of tense/aspect morphology and situation type.

Secondly, when speakers of English want to describe an event that took place in the (more remote) past, the following combinations are relevant:

- Simple past tense for describing a permanent state;
- Simple past tense for describing temporary states (position verbs, wear, hold etc.), activities and telic events that are included in topic time;
- Past progressive for temporary states (position verbs, wear, hold etc.), activities and telic events that overlap topic time.

The speaker needs a sophisticated use of simple and progressive past in order to construct the order of events that he wants, to indicate simultaneity, anteriority or posteriority between different (parts of) events of the past. Of course other forms, like the past, present and future perfect, play a part in describing past events, but they are not needed to make my point. The use of present tense forms for describing past events to create a vivid narrative style is also not pursued further here.

Thirdly, when speakers of English want to give general comments on the world as it is, they need:

- Simple present tense for states, activities and telic events.

Conditional clauses are also an important means to formulate a general statement about the world, but they are not included in this discussion.

To sum up, in the setting of talking about the here-and-now, a speaker of English needs the unmarked combinations of tense/aspect morphology and

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6 Topic time is the time span about which the speaker asserts something (cf. 3.4.2).
situation type and the progressive for telic events that have not yet ended. In the settings of talking about past events and talking about the world as it is, a speaker of English not only needs the unmarked, but also the marked combinations of tense/aspect morphology and situation type.

9.4.3.3 Children’s development

Assuming that children at first either mainly wish or are able to communicate about the here-and-now (R. Brown & Bellugi 1964), they will at first only or mainly make use of the unmarked combinations of tense/aspect morphology and situation type, the combinations that also predominate adult-adult speech (cf. 9.3.1). Those are the only forms they need for talking about the here-and-now and therefore the only forms they acquire. Depending on their general cognitive development children will increasingly be able, need or wish to talk about past events that they remember and they will increasingly contemplate about and comment on the world. It is a chicken and egg question whether cognitive development is responsible for the topics that children talk about with their parents or whether the experience with and communication about different topics influences cognitive development. They are probably strongly intertwined (Bowerman & Levinson 2001b; J. R. Johnston 1985).

Children do not exclude marked combinations on semantic grounds or because of grammatical rules. Because of the discourse topics children talk about—which is related to their cognitive development—children less often need to use marked combinations. Unmarked combinations cover the concepts that the child wants to talk about. Since parents adapt the topics they talk about to the cognitive level of their children, the input language will show similar distributions as the child language: only the unmarked combinations are used. However, the communicative wishes of parents may be slightly ahead of the child’s capacities: they start to talk about past events, to make statements about the world as it is, before the child is actively doing so, hence using more marked combinations than the child.

9.5 Discourse topics

In order to find out whether the discourse topics of children indeed develop from only talking about the here-and-now to talking about past events and talking about the world as it is, a qualitative analysis is carried out on the data of Nina and Abe and the input to them. Furthermore, the data of Sachs (1983) on

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Talking about objects or events not in the here-and-now is labeled “displacement” by Hockett (1960). The tendency of children to rely less and less on the here-and-now in speaking and understanding is called decontextualization by Bates (1979).
the use of past inflection by Naomi and her parents is used. In what contexts
do children use their progressives, past and present tense forms? What do the
parents do in the input? And what happens in adult-adult conversations?

9.5.1 Use of progressive

Speakers of English need the progressive when they want to talk about the
here-and-now about observable events that are temporary states, activities or
not-ended telic events (see 6.2.2). These are the unmarked uses of the
progressive. They also need the progressive when they want to describe past
events; the past progressive in combination with a temporary state, activity or
telic situation yields the reading that the situation overlaps topic time. This use
is marked. In what contexts do parents, children and adults use their
progressive forms?

9.5.1.1 Progressive for talking about the here-and-now

The children and their parents very frequently use the progressive for talking
about the here-and-now: they continuously describe what the child is doing
herself or what a sibling, a pet, a toy figure, or a figure on a picture is doing. In
the input, the progressive is in the beginning only used for talking about the
here-and-now. It is used with all the appropriate situation types, depending on
the activities the child is involved in. See the examples from the input language
to Nina at 2;0 in (2):

(2) He’s holding something in his hand     (state)
What is the king wearing on his head?    (state)
Who’s sleeping?                        (activity)
You’re drawing with your finger?        (activity)
Are you closing the door?               (telic)
You’re turning his head around?         (telic)
What are you drawing?                   (telic)
Are you putting the stethoscope on your ear? (telic)

(Input to Nina at 2;0)

The children also use the progressive for talking about the here-and-now from
the start. They use the progressive spontaneously in all relevant combinations,
depending on their activities with temporary states, with activities and with telic
events that have not yet ended (3):

(3) Little girl waiting         (state: picture)
Her not eating                (activity: picture)
Her drinking (activity: picture)
I making train for you (telic: own action)
bear going San Francisco. (telic: playing)
I putting it in the plate. (telic: own action)
Climbing up on the tree. (telic: picture) (Nina, 2;3)

The main difference between the child’s speech and the input to Nina are not the types of combinations that occur, but the fact that Nina mainly uses declarative utterances, whereas the mother mainly uses interrogatives. This difference is not further relevant.

The frequency with which children and their parents use the progressive for talking about observable events contrasts strongly with the rare examples from adults talking among themselves. In the adult corpus, examples in which the progressive is used for talking about the here-and-now are hard to find. A few examples are presented in (4): 8

(4) But she must only -- What is m- ... blowing out of there?
   (Lynne, SBCSAE)
   What’s everybody waiting for? You guys are supposed to go home now.
   (Marilyn, SBCSAE)
   Oh, you’re kidding .
   (Lenore, SBCSAE)

As opposed to children and their parents, describing their own or other’s activities is something adults among themselves hardly ever do. The present progressives of adults are generally used to describe situations that are ongoing but not observable, such as habitual or general states, see (5) and (6), or they are used in narratives about past events that are told in the historic present, see (7):

(5) I mean I kinda hate to feel like I’m taking .. charge, but I guess that’s what I’m needing to do.
   (Phil, SBCSAE)

(6) WEN: She was there with the baby.
   MAR: What’s she doing? Is she working yet, or still at home?
   (Marci, SBCSAE)

(7) We’re pulling up and I see this girl, who I’d never seen before.
   (Marilyn, SBCSAE)

8 Examples taken from the SBCSAE are presented in a simplified way for matters of readability.
9.5.1.2 Progressive for describing past events

After the stage in child language and input language in which the progressive is only used for describing observable events in the here-and-now, the progressive is used for describing past events by using a past copula (8.4.2, 8.4.3). It does not only indicate that the situation took place prior to utterance time, but also that it overlaps topic time. This use of the progressive only comes in gradually. It occurs first in the input, but very infrequently. Only in the later samples the children use the progressive for describing past events, without their parents having initiated the topic. The first use of a progressive for describing a past event in Nina’s samples occurs in the input. Although Nina at first responds adequately to her mother’s initiation of the topic of the past event, she loses interest quickly. See (8):

(8) MOT:  You saw a big fish there?
CHI:   On me [/] on the water.
MOT:  In the water?
CHI:   Yup [= yes].
MOT:  What were they doing?
CHI:   Where’s my pot?      (Nina, 2;3)

Comments: Nina loses interest in talking about the aquarium. She goes over and looks in her box of doll house furnishings. She is looking for some pots and other equipment to cook and eat with.

MOT:  What were the fish doing?
CHI:   Where’s my pot?      (Nina, 2;3)

In the input, the progressive is already used for describing past events, while in the child speech it is not. Only several months later, at age 3;0, Nina uses a progressive for describing a past event for the first time. Twice, the mother takes the initiative of talking about a past event and twice Nina talks about a past event on her own initiative. See (9) and (10) for an example of each:

(9) Situation: Looking at photographs.
MOT:  What’s this on the floor?
CHI:   A mat.
MOT:  Oh # what were we doing on that mat?
CHI:   Eating?
MOT:  Oh.
MOT:  The grownups were eating on the table or on the floor?
CHI:   On the floor.
CHI:   And kids were eating on the table.
MOT:  I see.         (Nina, 3;0)
FUNCTIONS OF TMA IN CHILD ENGLISH

(10) CHI: The doggie’s sharing it.
    CHI: He bite his tongue while he was eating.
    CHI: And so he’s gonna have a little rest with his blanket on.
    (Nina, 3;0)

The same pattern occurs in Abe’s data. In the input to Abe at 2;6, the progressive is occasionally used for describing (immediate) past events, whereas Abe does not yet use it for this purpose:

(11) CHI: Mama # what happen?
    MOT: I was showing Dad my owie. (Abe, 2;6)

(12) CHI: Don’t go please please don’t go.
    FAT: I was just teasing. We’re not going anywhere. (Abe, 2;6)

Although Abe uses the progressive from the beginning (2;6) to talk about observable events, the first time that he uses the progressive for talking about (immediate) past events is at age 3;0. See (13) and (14):

(13) FAT: What did you say?
    CHI: Nothing, I was talking by myself. (Abe, 3;0)

(14) CHI: Pretty soon a big spaceship will crash on your head.
    FAT: On my head?
    FAT: I hope not. Oh # I’m so scared help!
    CHI: I was teasing. It will not crash on your head.
    FAT: Oh what a relief. (Abe, 3;0)

In the same sample, Abe uses the progressive and simple past in a sophisticated way for describing the sequence of more remote past events. See (15):

(15) Remember when a long time ago (...) while you were playing ball with a striped ball mommy maked ... cutted a hole out of that trash thing then then I was playing basketball and then the basketball got brokened. (Abe, 3;0)

Adults conversing among themselves rather often use the progressive for describing a past event. Some examples of adult use of past progressives are presented in (16), referring to more remote past, and in (17), referring to immediate past:
(16) And you know, he was trying to make it sound like, same old complaint, same old everything.  
(Phil, SBCSAE)  
When I was living there for the couple of years, it was [//] the rainy season was all off.  
(Pete, SBCSAE)  
And I said “well yeah, in fact I do mind” cause I thought the lemon tree was dying.  
(Marilyn, SBCSAE)

(17) MIL: Is there somebody downstairs, playing? [....]  
PET: It was out there, or kind of coming in from some place.  
(Pete, SBCSAE)

Of all the progressives in the adult sample, 28% is a past progressive. Of all the progressives that the children use and that are used in the input, the percentage of progressives used for describing a past event are much lower up to at least age 3;0, as shown in Table 9-1.

Table 9-1. Percentage of past progressives (of all progressives)

<table>
<thead>
<tr>
<th>Age</th>
<th>Naomi</th>
<th>Nina</th>
<th>Input</th>
<th>Abe</th>
<th>Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>1;6</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1;9</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2;0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2;3</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2;6</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>3;0</td>
<td>0</td>
<td>9</td>
<td>13</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>3;6</td>
<td></td>
<td></td>
<td></td>
<td>32</td>
<td>53</td>
</tr>
<tr>
<td>4;0</td>
<td></td>
<td></td>
<td></td>
<td>17</td>
<td>-</td>
</tr>
<tr>
<td>4;6</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td>5;0</td>
<td></td>
<td></td>
<td></td>
<td>29</td>
<td>-</td>
</tr>
</tbody>
</table>

9.5.1.3 Summary

In child language and input to children, progressives are mainly used for describing observable events in the here-and-now. In adult-adult conversation on the contrary the progressive is only occasionally used for describing observable events. The combinations that are needed for talking about the here-and-now can account for the distribution of situation types over the progressive in the early child samples and the input. The favorite activities of children and their parents determine what they will speak about most. The large proportion of telic events in the child language and input is in fact a matter of
coincidence: in the particular samples the child or a third person is involved in many telic events, such as drawing, writing, building or making something; going somewhere; putting something somewhere; opening or closing things; climbing up on things, etcetera. Since everything the child does is mentioned in the early stages, many durative telic events are used with the progressive. Adults may also be involved in those type of activities, but they hardly ever describe what they are doing. When they use a present progressive, they are often describing events that are not observable.

When children grow older, they gradually use the progressive more often to describe past events. An increase in use is first noticeable in the input and is followed later by the child. Adults use the progressive for describing past events fairly frequently.

9.5.2 Use of simple past

A speaker of English needs the simple past in order to describe events that have just happened in the immediate past or that have a clear result in the present (6.2.3.1). These contexts are considered as belonging to the here-and-now: either the event itself is observed, but ended at the moment one may comment on it or the result of the event is observable.

The past is furthermore used frequently to describe more remote past events, not in the here-and-now. For the first purpose, the past is most relevant in combination with telic events that have just been completed. In particular telic, punctual situations happen so quickly that one can only talk about them when they have already ended. Moreover, telic events lead to a change of state, the result of which may be very relevant to the present. For the purpose of talking about past time, the past tense form can be combined with all situation types, but also predominates with telic events.

9.5.2.1 Simple past for talking about the here-and-now

In child language and in the input, the past is in the beginning mainly used for talking about observable events. In the input, from the beginning, past forms are used for describing observable events in the immediate past. See (18)-(20):

(18) Situation: Nina bumps into her mother
    CHI: Sorry.
    MOT: Did you bump into me? (Input to Nina at 2;0)

(19) Situation: noise of toys falling off Nina’s chair
    CHI: A toys down.
    MOT: All the toys fell off the chair, didn’t they? (Input to Nina at 2;0)
(20) Situation: elastic string of Nina’s birthday hat snaps and hurts her. Nina cries.
   MOT: Oh, did the elastic hurt you?
   CHI: Yeah [= yes]. (Input to Nina at 2;0)

According to Sachs (1983), Naomi started using past tense forms at 1;10. Until 2;2, they were only used to refer to observable events of the immediate past. Examples are presented in (21):

(21) I throwed it          (Naomi, 2;0)
    Georgie fell down?          (Naomi, 2;0)

Abe also uses the past tense from his first available sample at 2;6 for describing observable events. See (22)-(25):

(22) FAT: Ok # hold on.
    CHI: I falled down.
    FAT: You sure did. You sure are a ticklish Batman.  (Abe, 2;6)

(23) Uhhuh Momma # come see this ladder # I made.  (Abe, 2;6)

(24) Oh Mom # my daddy doesn’t want to! He said no.  (Abe, 2;6)

(25) MOT: Abe # do you want to help me do dishes?
    FAT: Ok # hold on.
    CHI: Uhhuh # I'll put it in
    CHI: I got a thing in there
    CHI: It dropped!
    MOT: Uhhuh it fell into the water now I'll be able to wash it.
    (Abe, 2;6)

Nina’s use of past forms starts unexpectedly. The sample at 2;0 contains a short fragment in which Nina uses gave eleven times. It is the only past form she uses in the sample and it is only used in the context of talking about who gave which present to her at her birthday, the day before the recording. Mother and child talk about this, while looking at or playing with the presents. Part of this conversation is presented in (26):

(26) MOT: Who sent the picture of the lion to Nina?
    CHI: Miss # miss gave it.
    CHI: Mrs. Wood.
FUNCTIONS OF TMA IN CHILD ENGLISH

MOT: Not Mrs. Wood # nonna.
CHI: Nonna gave it.

Situation: Nina is looking at the picture of the horse.

CHI: Betta # Betta gave it.

MOT: Betta gave you the picture of the horse.
CHI: Nonna gave a horse.

MOT: No # Nonna gave the picture of the lion to Nina.
CHI: yeah [= yes].

(Nina, 2;0)

Although the ‘giving’ happened in the earlier past, the birthday presents are in the here-and-now and Nina only seems to classify the presents with respect to the giver, instead of referring to the past event of giving the present to Nina. This fragment is therefore not a clear example of talking about past events.

Despite the unexpected use of the past in the first sample, the other samples show that Nina mainly uses the past for describing the here-and-now and not for describing past events. In the sample at 2;3, both forms Nina uses describe events that have just happened. At 2;6, of all the past forms (N = 14), eight describe an observable event (mainly ‘falling’), four are used for describing a past event and two are unclear. At 3;0, the distribution is the other way around: of all the past forms (N = 43), only 12 are used for describing an observable event, while 27 are used for describing a past event and four are unclear.

As opposed to children and their parents, adults talking to adults hardly ever use past tenses for talking about observable events. There are some examples in the data, but they are scarce. See (27):

(27) Oops, sorry. ... Did I get you? (Marilyn, SBCSAE)
Did you notice the room got deathly silent when Kendie mentioned marriage? (Kevin, SBCSAE)
Bit your teeth, hunh? (Darryl, SBCSAE)

According to Sachs (1983: 17), adults mainly report something that has just happened to another adult because the addressee has not noticed the event, like you dropped your scarf, whereas in child directed speech the past is often used for commenting on or asking about an activity the child has just performed. The examples in the adult data of this study show that adults also use the past in order to check what has just happened.

9.5.2.2 Simple past for describing past events

From the beginning the past in the input is frequently used for talking about the here-and-now. However, from early on, parents use the simple past now
and then for talking about more remote past events. At first, the children often do not respond in a pragmatically adequate way. See (28):

(28)  

| CHI:   | Oh # poor lamb.         |
| MOT:   | What happened to the lamb? |
| CHI:   | Uh # take him.           |

Situation: hands the lamb to her mother.  (Nina, 2;0)

Sometimes children do respond in a pragmatically adequate way, but not in a formally adequate way. See (29):

(29)  

| MOT:   | And what happened to your dolly? |
| CHI:   | Bite that.                      |
| CHI:   | That.                           |
| MOT:   | Did the dog bite your dolly?    |
| CHI:   | Yeah [= yes].                   |
| MOT:   | And what happened to the dress?|
| CHI:   | Here.                           |
| MOT:   | Did the dress get torn by the dog? |
| CHI:   | Yeah [= yes].                   |
| MOT:   | Bad dog.                        |
| CHI:   | Bad dog.                        |

(Nina, 2;0)

These findings are in accordance with Sachs (1983: 18-20) who also reports talking about past events by Naomi’s parents to Naomi from 1;10. Often, Naomi responded to these initiatives with unrelated responses or with imitations. Naomi herself starts using the past to refer to events that have happened on the same day at 2;2. At 2;8 she begins to make spontaneous reference to past experiences. Until then Naomi hardly ever expressed the meaning “earlier past” on her own initiative (1983: 19). Of the 253 past references in Naomi’s speech up to 2;5, only twice, at 2;2 and at 2;5, does Naomi spontaneously mention an event in the past.

The same patterns can be found in Nina’s and Abe’s speech. Although they use past forms for describing past events from quite early on, they use it infrequently and mainly in response to their parents. See (30) for an example:

(30)  

| CHI:   | I have a band aid. |
| MOT:   | Why # what happened? |
| CHI:   | A hurt # hurt me.   |
| MOT:   | When did you hurt yourself? |
| CHI:   | When me hurt meself. |
FUNCTIONS OF TMA IN CHILD ENGLISH

MOT: When did you hurt yourself? yesterday?
CHI: Yup.
MOT: Who put the band aid on?
CHI: Gail did. (Nina, 2;6)

Only occasionally, the children talk about past events on their own initiative. See (31)-(33) for some illustrations:

(31) MOT: Oh # Gail has a swimming pool # doesn’t she?
Situation: Gail is a baby-sitter of Nina’s. Nina had fallen into her large swimming pool several months ago.
CHI: I fell in it.
MOT: Did you fall in Gail’s swimming pool?
CHI: Yup [= yes]. (Nina, 2;6)

(32) MOT: Uhhuh # the fingerpaint’s all dry
CHI: And it’s all dried out Daddy # we going Dick and Carol's house.
FAT: Uhhuh.
CHI: Amara broke my poster Daddy # Amara came here and broke my poster. (Abe, 2;6)

(33) Remember a long time ago when Mommy was also at school? We played with this and it got brokeded and then the top came and then the marble comed out and then we played with it right? (Abe, 3;0)

As opposed to children and their parents, adults among themselves mainly use the past tense forms for communicating about past events. They talk about past events frequently and extensively, as shown in (34) and (35):

(34) KVN: You guys won’t believe what happened to us in the parking lot of the mall the other day.
WEN: Oh, by the Goodwill store.
KVN: ...Some guy came out and he_ he was, he was trying to sell us cologne.
WEN: No, he wasn’t trying to sell us cologne,
KVN: Well it_ ___ No=, I guess he was trying to like, lure us to a place where they would sell, like, imitation cologne, but he said, it’s not imitation, because,
KVN: because it’s made by the same people, but it’s put in different bottles? (Kevin, SBCSAE)

(35) They’ve gone .. to a church down south, a little tiny one? And when Edna told me about it, it was because they sort of wanted to go to a smaller congregation. But when they announced it in church and we prayed for them it was because, they, um, they were gonna go out, because they felt called. So, I don’t know what the real story is, but, it sounded kinda neat. (Marci, SBCSAE)

9.5.2.3 Summary

At first, both in the input and in child language, past tense forms are mainly used for talking about the here-and-now, for describing events that have just ended. In this setting, the most relevant combination is with telic events, the unmarked combination. Parents also start rather early using the past for describing past events but in that stage, the responses of children are often not yet pragmatically or formally appropriate. Gradually, children start using the past inflection spontaneously and more correctly for describing past events. The distribution of the two contexts of use is however not the same as in adult-adult conversation. In adult-adult conversation the past is predominantly used to talk about past events, whereas in child language and in the input the past is for a long time mainly used to describe observable events.

The exploration of the contexts of use of past tense forms shows that the development of discourse topics can indeed account for the distribution of past tense morphology and situation type. Since it is most relevant to mark telic events that have just been completed in the setting of talking about the here-and-now, this combination highly prevails in the younger samples of children. Only when talking about past events becomes more frequent, there is more opportunity to use the unmarked combinations. Since parents already start mentioning past events before the children do, the skewing in the input data is less great than in the child data.

One point to note is that the proportion of past in combination with states in both child and input language was small compared to the adults. This could be explained by the fact that the fragments about past events in child language and input are not as elaborated as they are in adult-adult conversations. Since states often function as background information about the settings or emotional responses in describing past events, they might just be less relevant for the communication between children and their parents in the early stages (cf. Berman & Slobin 1994). In the beginning the past events are often shared memories about dynamic situations the child has participated in or state-
changes that have taken place. In contrast, adults also describe the mental states they were in.

9.5.3 Use of simple present
Speakers of English need the simple present when they want to describe a state that holds in the here-and-now and when they want to give general comments on the world as it is. The first use is unmarked and combines with states. The second use is marked, and combines also with activities and telic events.

9.5.3.1 Simple present for talking about the here-and-now
In the input, the simple present is from the beginning used for talking about the here-and-now. See (36) and (37):

(36) MOT: He’s a nice little lamb.
    CHI: Got one ear.
    CHI: Got one ear.
    MOT: He has one ear? (Input to Nina at 2;0)

(37) You want Mommy to have the chair on her hand?
    I think he’s a dog. (Input to Nina at 2;0)
    That looks like cereal to me. (Input to Nina at 2;0)

The first forms of the simple present in Nina’s speech are attested in her sample at 2;3. All forms are used for talking about the here-and-now. The examples in (38) are all spontaneously used by Nina:

(38) I want applesauce
    You want more?
    I need the bottle
    I think dolly’s thirsty.
    I’ve a honey book. (Nina, 2;3)

Abe and his parents show a similar pattern: the simple present forms are from the start used to describe states that hold in the here-and-now.

Adults talking to adults also use the simple present for describing the here-and-now, but less frequently than children and their parents. See (39) for some examples in the adult-adult conversations:
No I I don’t want to hear anything out of a book with, .. chapter called heaven and hell. (Darryl, SBCSAE)
I have the ideal makings for garlic bread. Right here, right... Well actually I have Trader Joe's, <VOX whipped garlic bread spread VOX>. (Marilyn, SBCSAE)
I got fishy hands. (Marilyn, SBCSAE)

9.5.3.2 Simple present for commenting on the world

The simple present can also be used for making general statements about the world. For this purpose, besides the combinations with states, combinations with activities and telic events are relevant. In the input the simple present is from the beginning occasionally used for making general statements about the world. The child does not respond to it in a pragmatically adequate way (40):

(40) MOT: Want me to make the nurse sit down?
CHI: Yeah.
MOT: How do I make the nurse sit down?
Situation: Nina looking at the book “sleeping beauty”. She calls sleeping beauty “goldy.”
CHI: Goldy. (Nina, 2;0)

It is at 2;6, in the context of scaffolding, that Nina produces a simple present for the first time that is used for making a general statement about the world (41):

(41) MOT: What do you do when you swim? Do you splash a lot?
CHI: Yeah
MOT: You do? Do you get wet?
CHI: yup, I get ... I don’t. (Nina, 2;6)

Only at 3;0 Nina herself takes the initiative to make a general statement about the world by using a simple present (42).

(42) CHI: Don’t you make the dog fall down.
MOT: I didn’t mean to knock him over.
CHI: Cause he cries every day when you push him down. (Nina, 3;0)

Abe also uses the simple present for making a general statement for the first time at age 3;0 (43).
(43) I didn’t know grandmas smoke cigarettes. (Abe, 3;0)

In the later samples there are many examples in which the present is used for making general statements about the world (44).

(44) How do bees grow their babies? (Abe, 3;6)
   Mommy # I have a good thing to catch mosquitoes. You get a pin, a sharp pin and then you put it in the mosquitoes then you kill the mosquitoes. (Abe, 3;6)

Adults as opposed to young children and parents talking to young children, frequently use the simple present to make claims about the world as it is. Therefore, they need the marked combinations more often than children and their parents. These remarks are often constructed in a conditional clause. See (45).

(45) Sometimes if you get one that’s been thawed out a little bit, they start really stinking and stuff. Oh, it’s the grossest thing. (Lynn, SBCSAE)
   Why do these cans, .. get so warped. Only the --.. Only the Sam’s Club cans .. get so warped. (Marilyn, SBCSAE)
   You know, you ask someone why they’re interested in electronics, and they can probably tell you. (Darryl, SBCSAE)

9.5.3.3 Summary

At first, children only use the present tense for talking about the here-and-now. Only later on, children start commenting on the world and only in this context, the marked combinations of tense and situation type appear. Parents adjust their language to the children’s cognitive level, thus showing at first a stronger association between states and present tense than in adult-adult conversation. Parents start using the present tense for commenting on the world when talking to their children before their children use the present tense for this purpose. As a result, the association between present tense and states in the input is weaker than in child language. Adults talking among themselves use the present tense much more often for making general comments on the world than children and their parents do, so that the association with states in adult-adult language is the least strong.
9.5.4 Conclusion

The qualitative analysis of the discourse topics in child language, input and adult-adult data supports the Discourse Topic Hypothesis. At first, children and their parents mainly converse about the here-and-now, about observable events and events that have just happened. As a consequence they only use unmarked combinations of tense/aspect morphology and situation types. The activities the children are involved in determine which combinations are used.

Talking about past events develops later on. Although a few past forms in the early samples are already used by the child for describing past events, the frequency is low and in most cases it is the parent who takes the initiative and helps the child to talk about the earlier past by way of scaffolding. Only later on, the child starts talking about past events more frequently and spontaneously. The description of past events is often short and concerns shared memories. This makes the use of states in the past for presenting background information less relevant. Furthermore, young children have not yet mastered the sophisticated sequencing of (parts of) events in the past. This explains the late appearance of the past progressive: activities and temporary states in the past progressive are often used for describing simultaneity between different situations in the past. Children’s descriptions of past events are, however, not so elaborate in the beginning.

Finally, children start making general statements about the world as it is. Only then are the marked combinations of present inflection with activities and telic events needed. In the beginning it is the parent who takes the initiative to talk about the world in general statements and by way of scaffolding, the child is able to respond adequately. Around age 3;0 children start commenting on the world spontaneously.

In contrast to children and their parents, adults among themselves only occasionally talk about the here-and-now. They mainly converse about past events or the world as it is. This explains why they need the marked combinations more often than the children and their parents. However, even in the more sophisticated contexts of use, the unmarked combinations prevail, so that also in the adult stage of English, there is a strong association between certain situation types and tense/aspect.

9.6 Discussion and Conclusion

With respect to the semantic interpretation of the early tense and aspect forms in child English, it was necessary to investigate whether these forms perhaps mark situation type, instead of tense or aspect, such as suggested in the literature. If this were the case, then the early grammatical expressions could not be interpreted as operators. A detailed study of the associations between
situation type and progressive, past tense and present tense, revealed that there is no evidence that supports the interpretation of these morphemes as expressing situation type.

On the basis of a comparison between adult-adult language, child language and input to the children it was established that in general the association between past and telic events and between present and states was stronger in the input and even stronger in child language than in adult English. For the progressive it was found that the association between progressive and activities was not stronger in the input and in child language than in adult-adult language but the association between progressive and telic events was remarkably high in the input and in child language at certain points.

Both the Aspect Before Tense Hypothesis and the Prototype Account predict that children would have a regular system in the beginning, but the findings are not compatible with this expectation. From the start, children do not restrict their use of tense/aspect morphology to certain situation types: they immediately make different combinations that are also possible in adult English, however, these combinations occur less often. There is thus no need to assume that children work from a different semantic representation or rule for tense/aspect morphology. The distribution in the input seems to account to a large extent for the distribution of tense/aspect morphology and situation type in child language. A lexically-based development in the beginning can best explain the irregularities found in the combinations of tense-aspect morphology and situation type in child language. A further argument against the Aspect Before Tense Hypothesis and the Prototype Account is that neither of these hypotheses explains why the distribution in the input is skewed compared to adult-adult conversation but less skewed than the distribution in child language.

The Discourse Topic Hypothesis claims that the discourse topic is of influence to the distribution of tense/aspect morphology and situation type. When talking about observable events, the unmarked combinations—progressive and temporal states / activities / not ended telic events; present tense and states; past tense and telic events—are most relevant. When talking about past events or when commenting on the world, marked combinations are also relevant, although the unmarked combinations still dominate. Assuming that children and their parents at first mainly converse about the here-and-now, they at first only need the unmarked combinations.

Independent evidence for the Discourse Topic Hypothesis was collected by a qualitative analysis of what children talk about on their own initiative, what parents talk about to their children and what adults talk about among themselves. It was shown that children in the early samples mainly or only talk about the here-and-now, about observable events. Their parents do so equally, but they also talk about past events now and then and sometimes about the
world as it is. They bring up conversation topics that are slightly ahead of the
topics their children talk about themselves. By contrast, adults in interaction
with adults rarely talk about observable events: they mainly talk about past
events or about the world as it is. Accordingly, different distributions of
tense/aspect morphology and situation types are needed and used by children,
parents talking to their children and adults talking to adults. When they grow
older, children and their parents increasingly talk about past events and about
the world as it is. As a consequence, they need more marked combinations and
thus the patterns of association between tense-aspect morphology and situation
type gradually become adultlike.

I assume that the different distributions of discourse topics in child and adult
conversations are a direct result of the cognitive capacities of children
compared to adults: their knowledge of the world, their theory of mind, their
memory, their understanding of the concept of time, etcetera. However, since
to date the development of these capacities is still only marginally understood,
(Kuhn & Siegler 2000) a study of the exact relations between cognitive
capacities and discourse topics is beyond the scope of this thesis.

This study showed the importance of investigating not only child language or
input, but also the final stage (adult-adult conversation). First, the markedness
of certain combinations of morphology and situation type appeared to be
specific for child English only to a small extent. Furthermore, it appears to be
useful to investigate which linguistic constructions and combinations are
needed for what discourse topics. On the basis of the development of discourse
topics of children and their parents, the distributional patterns in child language
and input can be accounted for.

Whether the early tense/aspect forms can be interpreted as having adultlike
semantics, such as claimed by some in the literature (e.g. Behrens 1993; C. S.
Smith 1980; Smoczynska 1985; Weist et al. 1984), will be evaluated in Chapter
10. There, on the basis of crosslinguistic data on the acquisition of grammatical
TMA expressions it will be possible to abstract away from language-specific
patterns and make more general claims about the functions of TMA forms in
child languages.