

and focus on distinct areas for analysis, combine to underline themes reiterated across our study. There is a complex interaction between form and function across development; language-specific factors and language typology impinge on the particular forms favored for expressing certain functions; and these diverse factors in turn are affected by the development of general discourse abilities, on the one hand, and specifically narrative competence, on the other, and by the gradual emergence of the ability to integrate the telling of the frog story, like other types of connected discourse, from a narrowly local level to a hierarchically motivated global level of organization.

Chapter IVA

TEMPORAL RELATIONS IN NARRATIVE: SIMULTANEITY

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1. AIMS OF THE STUDY

The general research question of this project, of which the following chapter is a part, can be described as follows: "How does the ability develop to conceptualize, organize, and express complex temporal structures in discourse?" This involves questions of general cognitive development and of linguistic development, as well as the interrelation of these two domains. In order to tackle these questions, a crosslinguistic perspective was chosen,

because "only through the study of discourse across various languages, and across the entire developmental periods, can we sort out the role of various types of linguistic devices in the development of temporal cognition and its expression" (Slobin, 1985b, p. 14). To present the problem in these terms calls for an analytical frame which takes a concept (notions such as "simultaneity" or functions such as "background/foreground") as the starting point for the analyses. On this basis, different language systems can be made comparable.

In selecting a concept or function, the following aspects must be taken into account:

- The concept must be **basic** in the sense that it represents a core notion of a conceptual domain. It should not be compound in nature, because complex conceptual clusters could already be language specific.
- The concept should also be basic in another sense: It should be accessible and manageable for children at a fairly young age.

Both conditions are met by the concept analyzed in this chapter. **Simultaneity** is a basic element in our concept of time. It is one of the three "basic relations," or *Grundrelationen* (*Grundzüge einer deutschen Grammatik*, 1981), the other two being the temporal relations of 'before' and 'after'. Simultaneity of events is also perceptually accessible to children from very early on.

In pursuing the general aims of the project in one specific domain, we will be concerned with the following questions:

- How do children at different ages, and also adults, express the temporal relation of simultaneity across languages?
- What are the functions of the expression of simultaneity within the complex temporal structure of narrative discourse?
- How does the ability to conceptualize and express simultaneous relations of different types develop?

We start by discussing theoretical aspects of the temporal concept of simultaneity and its multilayered function in discourse.

2. THE TEMPORAL RELATION OF "SIMULTANEITY"

2.1. Theoretical Background

Although there is a vast literature in linguistics on the expression of temporal categories, there is, to the best of our knowledge, not a single study devoted specifically to the concept of simultaneity.¹ There is thus no prior

¹ One exception is an unpublished article by Hicks (1986).

investigation which could provide an immediate basis for our study. Much of the previous work on temporal concepts is, however, indirectly relevant. First, the domain of theoretical linguistics provides analyses of the semantics of expressive devices for time reference — mainly tense/aspect systems and lexical items like adverbials, conjunctions, and particles — which include reference to simultaneity (e.g., Kamp & Rohrer, 1982; Löbner, 1989; Partee, 1984; Smith, 1983).

Research on discourse structure, in particular narrative discourse, also provides relevant insights (e.g., Givón, 1982; Hopper, 1982; Klein, 1981; Labov, 1972). In these studies, simultaneity is analyzed as a temporal relation which signals a particular function within the overall discourse structure. The dominant temporal relation between utterances in narrative discourse is defined by the *after*-relation which constitutes the chain of foregrounded events. In contrast, the relation of simultaneity (henceforth *sim*) can be taken as an indicator for all kinds of supplementary background material. These distinctions will be critical for our analysis.

Language acquisition is, of course, another branch of linguistic research relevant for our study. The development of temporal concepts has been a major topic in the study of semantics in child language. Much of this work has focused on the two concepts of 'before' and 'after' (e.g., Clark, 1971; Cromer, 1968; Flores d'Arcais, 1978). This is probably because these relations are expressed at a stage where children do not as yet produce coherently organized pieces of text, when temporal relations are deictically anchored. Simultaneity, on the other hand, is usually not expressed overtly when deictically anchored. Explicit reference to the *sim*-relation is, rather, typical of complex temporal structure in discourse. And although there has been an upsurge in interest in children's discourse in recent years, little of this work has been undertaken from a temporal perspective.

Language acquisition studies have shown that the first marking of temporal notions in children's speech is typically through the verb inflectional system. Children in different languages have been shown to first acquire inflections used for marking the present (and/or progressive) and the past in the adult language (Aksu-Koç, 1988; Antinucci & Miller, 1976; Berman & Dromi, 1984; Bloom, Lifter, & Hafitz, 1980; Brown, 1973; Clark, 1985; de Lemos, 1981; Fletcher, 1979; Jacobsen, 1981; Sachs, 1983; Stephany, 1986; Szagun, 1977; Weist, 1986). The commonly noted observation is that these inflections occur only with certain types of verbs in restricted environments where scope of reference is limited to the present moment. This has led to the interpretation of their function as aspectual rather than temporal. During this period there is also some marking of modal notions such as willingness or ability, with auxiliaries or inflections, depending on the language. The next

development, around age 2;6, is characterized by an increase in the number of auxiliaries and/or inflections, which come to be used in more varied contexts, and by the emergence of temporal adverbials. Deictic adverbs such as 'yesterday', 'tomorrow', and 'when'-constructions are typically reported to precede the use of the nondeictic terms 'before' and 'after' used prepositionally or as subordinating conjunctions (Aksu, 1978; Clancy, Jacobsen, & Silva, 1976; Clark, 1985; Fletcher, 1979; Weist, Wysocka, Witkowska-Stadnik, Buczowska, & Konieczna, 1984). The aspectual and tense functions of the inflections are now differentiated in utterances which refer to past or future. That is, children can order events on a time line that has the moment of speech as the anchoring point. Finally, children start expressing the more complex relations of "anterior," "posterior," or "simultaneous" between events, an achievement which requires the coordination of different temporal points such as event time, reference time, and speech time. To this end, they use complex tense-aspect marking and temporal adverbs (Amidon & Carey, 1972; Barrie-Blackley, 1973; Berman & Dromi, 1984; Clark, 1970, 1985; Cromer, 1974; Ferreiro & Sinclair, 1971; Fletcher, 1981; Stephany, 1981; Szagun, 1976, 1979). These studies have suggested that in constructing the nondeictic relations of temporal reference, children progress from juxtaposing two independent clauses which express events in their order of occurrence, to sequentially relating two clauses with adverbials that preserve order of occurrence to, finally, free use of conjunctions or adverbials without attention to correspondence between order of occurrence and of mention. These developments eventually lead to the coordination of the deictic temporal axis of events with the nondeictic time axis of discourse, around the age of 3;0-3;6 — the age of the youngest children in our sample.

2.2. The Concept of Simultaneity

So far we have talked about simultaneity as if it were a clear-cut concept, but this is not in fact the case. Let us first consider a narrow definition of this temporal relation:

Two events, processes, or states are simultaneous if they have identical values on the time axis. This means that their respective right and left temporal boundaries must coincide.

If we were to adopt this definition, then we would find hardly any cases of simultaneity in our data, first, because simultaneity in this narrow sense very rarely holds between two situations in reality² and second, because we often

² Following Comrie (1976), we use the term "situation" as a temporally neutral expression that can refer to activities, states, or events.

cannot tell whether two situations referred to in discourse were actually simultaneous. Information given linguistically usually does not have this level of precision.

Therefore, we will take a somewhat looser definition of simultaneity as our starting point:

Two events, processes, or states are simultaneous if they share a value on the time axis. Temporal boundaries need not coincide.

This definition extends the concept of simultaneity to all kinds of temporal overlap and inclusion. These include, for example, where *e* stands for events and *s* for states and the numerals 1 and 2 indicate two distinct events or states, situations such as the following: (a) *e1* and *e2* have identical values on the time axis; (b) *e1* and *s2* share a value on the time axis, but the left and right temporal boundaries of *s2* extend beyond *e1*, that is, *s2* begins prior to *e1* and continues after it; (c) *s1* and *s2* share a value on the time axis, but the temporal boundaries of *s1* extend beyond those of *s2* to both left and right; (d) *s1* and *s2* have identical values on the time axis; (e) *e1* and *s2* share a value on the time axis, but *s2* extends beyond *e1* to the right, that is, it continues after it; etc. Language in general does not provide specific means to distinguish these and other conceivable subcategories of simultaneity explicitly; and only a handful of these options are reflected in the linguistic systems of the five languages of this study.

2.3. Simultaneity as Part of a General Concept of Time

If two situations are conceptualized and verbally presented as being simultaneous, then more is involved than the perception of the mere facts in the referential world. The speaker has to have an abstract concept of a timeline, to which both situations can be related.³ That is, in order to refer to two situations as being simultaneous, a concept of time is required which includes a number of basic notions:⁴

- the deictically given speech-time (S)

³ This may sound trivial, but it is not, if we look at how children talk about temporal relations. Precisely this general concept of a time continuum seems not to exist for 3-year-olds (see Piaget, 1960, pp. 99ff, where he discusses the specific difficulties children have with the concept of simultaneity).

⁴ The categories are taken from Reichenbach's (1947a, 1947b) work on tense logic. Although many suggestions have been made for modifying Reichenbach's system, his basic categories — S, R, E — can still be taken as common ground for those working on problems of temporal reference.

- a reference time (R)
- the event time (E)

These notions are crucial for distinguishing different "levels" of simultaneity which can be found in discourse. They complicate the picture and add another dimension of diversity to the different types of simultaneity which can be identified.

Three levels of simultaneity are pertinent to our database: the time axes of (1) events, (2) discourse, and (3) perception.

(1) The standard case is simultaneity of two or more "event-times." The situations are located on the time axis by means of the same S and R parameters and the time intervals referred to are either identical or overlap. An example would be a sequence of two clauses such as in example (1).

(1) The frog was in the jar

and the boy was looking at him.

Here the time intervals overlap (from the point of view of the pictures, in reality the boy's looking is contained within the longer stretch of time).

(2) The "time axis of discourse" is another level on which simultaneity might occur. This is the line which speakers take for the presentation of the events. It may follow the actual temporal location of the events, in which case it is identical with the time axis in (1). But it may also deviate from the real time structure by introducing a subjective perspective on the events. In that case, a particular relation between the Es no longer implies the same relation between the Rs. Thus, a constellation becomes possible in which the Rs of two situations fall temporally together — and can thus be regarded as simultaneous — whereas the Es are sequential in time, as in the example in (2).

(2) **e1** *Er wacht auf.* 'He wakes up.'

e2 *Inzwischen hat sie das Zimmer betreten.* 'In the meantime she has come into the room.'

Here, the second event **e2** is related to the temporal reference of the first event, in that the result of **e2** is presented as being simultaneous with **e1**. The present perfect is the typical device for introducing this type of temporal relationship in German (as well as English and Spanish). The temporal structure in this case is complex since on the axis of **events**, we get a relation of **retrospection** implying a sequential relation such that **e2** precedes **e1**, while on the axis of **discourse** we get a relation of **simultaneity** between the two reference points involved, that is, $R1=R2$.

(3) A third, distinct level on which simultaneity can occur is the "time axis of perception." This concept is relevant to the particular discourse type

dealt with in our database. A description of a picture-story differs greatly from, for example, a real-world story, a fantasy, or recounting of a film, in that a story must be developed on the basis of a series of static scenes in which different activities are presented as simultaneous. The more closely a speaker follows the pictures, the more descriptive the task becomes. As a result, the co-presence of situations in one picture, which implies simultaneity of perception, will be a structuring factor in the temporal organization of the text. We will see that this is the "temporal approach" taken by the 3-year-old children, and that it can also play a role in adult narrations, where we find sentences such as example (3).

(3) *Man sieht den Jungen lachen und den Hund in Witterungshaltung.*

'One sees the boy laugh and the dog standing in sniffing position.'
[G20b]

In sum, several levels of temporal structure are involved in considering temporally related situations. The most important for our study is the **time axis of events**, but we also need to take account of the **time axis of discourse**, which results from a particular perspective taken on events, and the **time axis of perception**, which is relevant to the picture-description nature of our task. Most importantly from our point of view, the *sim*-relation can be established on all three levels.

2.4. Simultaneity in Discourse

The contribution that an utterance of the *sim*-type can make to the informational structure of a text is by no means uniform. It depends on the type of discourse, on the one hand, and on the particular function of the utterance within that discourse, on the other. Both factors have an impact on whether, and how, the temporal relation will be expressed. Below we consider the status of utterances expressing the *sim*-relation in the two types of text elicited by our study: narrative and description.

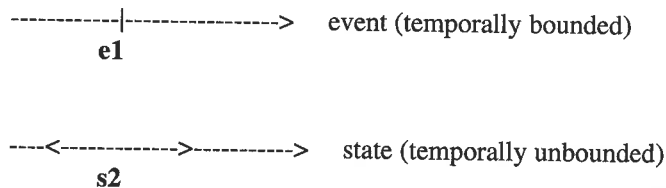
2.4.1. Narrative discourse

Temporality is a critically important factor, some would say the most basic element, in the organization of narrative structure. Following from this, the central distinction between **foreground** and **background** in much contemporary research has been based on temporal categories (e.g., Hatav, 1985; Hopper, 1979; Reinhart, 1984). According to these definitions, foregrounded utterances can be characterized as (a) referring to an event (with the crucial property being temporal boundedness), and (b) standing in a shift-in-time-relation. A principle of chronological order applies as the "default case" for foregrounded clauses, which constitute the temporal skeleton of the narrative.

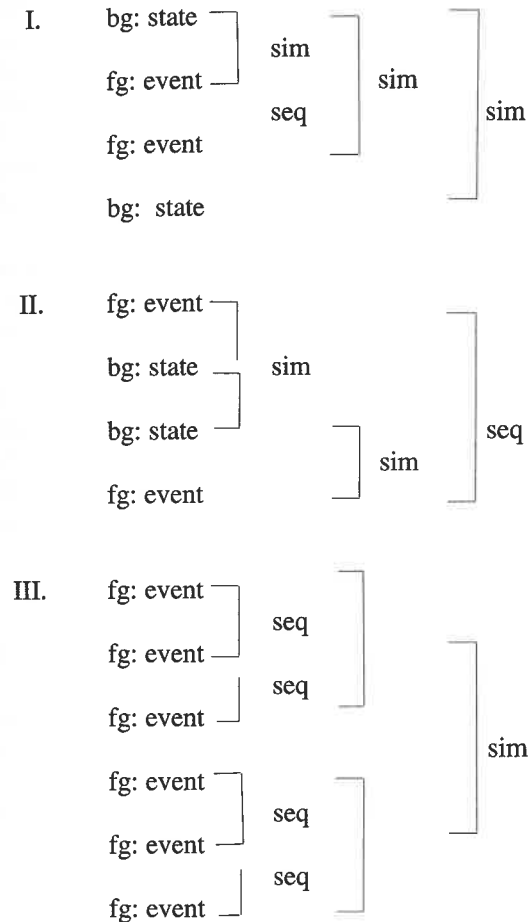
Background material, in contrast, is not part of the advancing plotline; one main way in which it can be related to foregrounded utterances is by the temporal relation of simultaneity.

But simultaneity is not necessarily always an indicator of backgrounding. Rather, we need to distinguish between two types of simultaneity in narratives: (a) simultaneity of events in the foreground, and (b) simultaneity of events and states within the background, or across foreground and background. A typical context for (a) arises when several participants are involved in a story, acting simultaneously at different places, as is clearly true of the frog story. Such contexts often demand explicit marking of the temporal relations between events. Otherwise the events would be interpreted as sequential, according to the default case for structuring a narrative.

With regard to (b), utterances which refer to temporally unbounded states cannot be part of the storyline. If they do not leave the temporal frame of the story — as in the case of personal comments by the speaker which shift time reference to the deictically given speech-time — the states will temporally overlap with one or more events in the foreground. Utterances of this kind are typical instances of background material. They may contain information about situational circumstances (temporal and spatial); or they may provide explanations or comments from the point of view of the speaker or the protagonist. Thus, the basic type of discourse relief shows the following pattern:



These basic patterns will not suffice to account for all the cases of simultaneity in our database. Complications result from the fact that (a) simultaneity of reference can hold between utterances which are not adjacent, and (b) simultaneity can be established between chunks of events which are internally sequentially ordered. The following examples illustrate some possible patterns of this kind (bg = background, fg = foreground, seq = sequential).



The different configurations in I to III above show that simultaneity in narrative discourse needs to be analyzed beyond adjacent pairs of utterances, taking into account a wider discourse context.

2.4.2. Descriptive discourse⁵

⁵ Descriptions do not form a homogeneous class. In terms of temporal organization, there are two basic types: "dynamic descriptions," such as processes, which follow the same temporal pattern as narratives, and "static descriptions," such as picture-descriptions. Only the latter category is relevant to our particular database. (A detailed discussion of these text types is provided in von Stutterheim & Klein, 1989.)

In picture descriptions, the function of utterances expressing simultaneity can be characterized as the reverse of what we have said about narratives. Those utterances which form the backbone of the text, and as such constitute the foreground in a description, stand in the relation of simultaneity. All the information given in one picture is frozen into a static simultaneity of events, processes, and states. Verbalization of such a situation must somehow convey that all the information given in the sequential utterances remains within the same temporal frame.

Background material can also be inserted in a descriptive text, but then it has a different character and function (Giora, 1990). Narrative discourse, of the kind which concerns us here, has two main kinds of background material. (1) Comments by the speaker — personal opinion, evaluation, etc. — are temporally anchored in speech time, and so depart from the temporal frame of the foregrounded utterances. (2) Utterances providing information not given in the pictures need to have some temporal reference of their own, in order to be integrated into the temporal structure of the text. They may be linked to the temporal frame in a shift-in-time relation, or they may introduce their own independent temporal reference. It follows that in **descriptive** texts, a temporal relation which is **not** simultaneous is an indicator of background material.

Crucial to the context of our particular database is the fact that the task of narrating a picturebook is essentially ambiguous. The text types elicited by this procedure yield a hybrid of description and narration. Speakers can either choose to produce a number of descriptions following the picture frames, or they can transform the static pictures into a continuous story, in which the pictures are no more than clues to an advancing plotline. A third possibility is a mixture of these two text types — which turns out to be quite common in our sample, and not easily given to analysis.

3. THE EXPRESSION OF SIMULTANEITY IN GERMAN AND TURKISH

The bulk of this chapter presents a systematic comparison of German and Turkish, followed by brief comparisons with developments in Spanish, Hebrew, and English (Section 5.2). Below is an overview of how the *sim*-relation is expressed in German (Section 3.1) and Turkish (3.2).

3.1. German

The means available in German for reference to simultaneity are — compared to other languages — rather poor. In most cases, the *sim*-relation is not overtly expressed at all, particularly in the case of the relation between a backgrounded state and a foregrounded event. Most of the *sim*-utterances in

the adult German frog stories are not overtly marked for their temporal relation. Instead, the relevant meaning is conveyed by the inherent temporal properties of the situations referred to — most crucially information concerning temporal boundedness and unboundedness.⁶

German has no morphological means, and uses two types of lexical items for expressing simultaneity: (1) sentence-modifying adverbs and adverbial phrases such as *währenddessen* 'meanwhile', *gleichzeitig* 'at the same time', *mittlerweile* 'in the meanwhile' and *in der Zwischenzeit* 'in the meantime', *in dem Moment* 'at the moment', *zur gleichen Zeit* 'at the same time'; and (2) subordinating conjunctions such as *als* 'when', *wenn* 'as, when', *während* 'while', *wie* 'how'. Nominalization provides a further, syntactic means for integrating two simultaneous situations within one utterance, where a nominalized verb is combined with a preposition which indicates simultaneity, e.g., *bei* 'at, with' + NOMINALIZED INF; *während* 'during' + NOMINALIZED INF.

The lexical inventory of German reflects the following conceptual sub-categories of the notion of simultaneity:

- Devices for referring to an **event-event** relation — e.g., *in dem Moment*, *als* 'at the moment, when' — in contrast to a **state-event** or **state-state** relation — e.g., *währenddessen*, *während* 'meanwhile, while'.
- Devices for expressing simultaneity between an episode (more than one event) and an event/state or another episode — e.g. *in der Zwischenzeit* 'in the meantime' in contrast to the *sim*-relation between two single situations — e.g., *gleichzeitig* 'at the same time'.
- Different means for expressing the *sim*-relation between two foregrounded situations — e.g. *dabei* 'in doing this' — compared with the relation between a foregrounded and a backgrounded situation — e.g., *als* 'when'.
- The device of clause ordering can be used to mark the distinction between topic and focus — particularly in subordinating constructions, where the order of two clauses will reflect topic-focus structure.
- Other distinctions which can in theory be made with respect to simultaneity are not overtly marked, and need to be inferred from the semantics of the specific utterances.

⁶ Inferences about temporal relations can be derived from other sources than the temporal properties of a situation — including reference to other conceptual domains, such as space or person.

Other means contribute to the interpretation of two situations as simultaneous without marking them explicitly as such. For example, expressions which have a durative, imperfective meaning make an utterance temporally unbounded. If such an utterance is preceded or followed by one with no specific temporal reference, then the two utterances will be interpreted as simultaneous. Devices of this sort are: *immer* 'always', *gerade* 'just (now)', *immer noch* 'still', *am* + NOMINALIZED INF 'in the process of V-ing', etc. In addition, complement and adverbial clauses of reason are also consistent with an interpretation of simultaneity in the absence of any other explicitly marked temporal relation marked explicitly (e.g., by tense shifting), as in (4) and (5).

(4) *Er sieht, daß der Hund schläft.*

'He sees that the dog sleeps.'

(5) *Er läuft, weil die Bienen ihn verfolgen.*

'He runs because the bees follow him.'

Finally, a form that figures as a compensatory device in young children's usage is the adverb *auch* 'also', which can also imply simultaneity in certain contexts.

3.2. Turkish

The relation of simultaneity between two single situations (event-event, ongoing process-event, and state-event) is expressed by means of verbal morphology in Turkish. The morphological devices are adverbial clauses formed by converbs (also called gerunds) and nominalized forms of the verb.

The **converbs** are nonfinite verb forms which form adverbial clauses that take their tense specification from the clause-final main verb. The following sections consider the properties of converbs relevant to simultaneity and grounding. (See Chapter III E, Section 2, for definitions and a more comprehensive treatment.)

V+ince 'when' and *V+ken* 'while' function within the temporal paradigm and present the time of the event referred to in the adverbial clause as reference time (R) for the event referred to in the main clause. *V+ken* presents an event in its extension, i.e., as an ongoing process, and expresses simultaneity alone, whereas *V+ince* denotes point or partial overlap between bounded events and may carry a causal or temporal meaning. These converbs add an aspectual coloring to the verbs they are attached to: Inherent to the meaning of *-ken* are notions of duration and progression, and inherent to the meaning of *-ince* is the notion of completion. *V+ip* 'and (then)' and *V+erek* 'in/by V-ing', on the other hand, are discourse-level operators, subject to coreferentiality constraints. They lie outside of the temporal paradigm and serve to closely integrate two situations, as immediately successive or as

simultaneous, depending on context.

The **nominalized verb**, which is marked for person and number, either takes a postposition or is inflected with a case marker, to form a unit that functions as an adverbial clause. Such clauses can set R and mark simultaneity between a state and an event when the postposition is the noun *zaman* 'time', or the case marker is the locative inflection *-de*. The morphemes are arrayed as follows, where *dik* represents a deverbal nominalizer: *V+dik+PERSON/NUMBER zaman*; *V+dik+PERSON/NUMBER+de* (*-dik* appears as *-diğ* if a vowel follows, as in the examples below). An adverbial clause which is formed in this way with a past participle presents the situation as a bounded state. The construction *V+diği zaman* 'at the time of V-ing' implies perfectivity and at times causality or condition; *V+diğinde* 'at V-ing' presents the situation from a stative perspective. In sum, between two situations, event-event relations are typically referred to by *V+ince* and *V+ip*, ongoing process-event relations by *V+ken* and *V+erek*, and state-event relations by *V+diğinde* and *V+diği zaman*.

Turkish uses **adverbial phrases** for expressing the simultaneity between an episode (more than one event) and an event/state or a second episode — *bu/o arada* 'meanwhile', *bu/o sırada* 'in the meantime', *öte yandan/öbür tarafta* 'on the other side/hand', as against phrases used to express a simultaneous relation between two isolated situations — *tam o sırada* 'right at that moment', *o zaman* 'at that time', *aynı anda* 'at the same time'. The first type indicate full or partial overlap of event/state sequences over a time interval: *bu arada* 'meanwhile' presents the event or sequence of events from an imperfective perspective implying their progress or duration during the interval; *bu sırada* 'in the meantime' localizes the subsequent event at some temporal value within the interval; *öte yandan* 'on the other side', implies simultaneity by analogy through spatial opposition. The second group of adverbials imply a full overlap between bounded situations. The adverbial *o zaman* 'at that time, then' expresses either simultaneity or more so, logical consequence. Such expressions function in switching perspective to simultaneous but independent activities of different actors, while the bound forms serve to connect situations that are causally or temporally contingent on one another.

Furthermore, different options will be used to express *sim*-relations between two foregrounded situations as compared to the *sim*-relations between a foregrounded and a backgrounded situation. The converbs *V+ip* and *V+erek* can mark simultaneity between two foregrounded or a background and a foreground event, while *V+ken* and the subordinating constructions *V+diğinde* and *V+diği zaman* present the situation they refer to as backgrounded. These morphological devices connecting adjacent utterances function to make grounding distinctions at the **local** level. Adverbial phrases, on

the other hand, effect grounding distinctions at a more **global** level: They typically mark a topic shift and present the situation they introduce as foregrounded.

The distinction between topic and focus is signaled by the order of the clauses in complex sentences. In Turkish, the subordinate clause preceding the main clause — in line with the canonical SOV order — reflects topic-focus structure. This means that *V+ince* and *V+ken* clauses typically introduce information that is already given or is easily inferrable, i.e., the topic, which is backgrounded relative to the information in the main clause. However, it is also possible for these converbs to present new information, in which case they serve to establish a temporal relation between two foreground events.⁷

Turkish thus has a far richer set of devices than German. The pervasiveness of these devices in the verb morphology as well as the availability of adverbial phrases allows for the expression of different types of *sim*-relations (event-event, state-event, process-event), and for finer foreground/background distinctions between pairs or chunks of situations. However, as in German, the kind of *sim*-relation that is typically left unmarked in Turkish or expressed implicitly (e.g., by nominal constructions or by tense-aspect alternations), will be between background states and foreground events, where temporal boundedness/unboundedness plays a role in the inferencing of the nature of the temporal relation. Since tense-aspect shifts play a role in the expression of simultaneity, the relevant distinctions in the inflectional system of Turkish are briefly noted here. (See, further, Chapter III E, Section 1.)

Turkish makes a temporal distinction between the past and the nonpast, and a modal distinction between direct experience and inference/hearsay. The inflection *-iyor* is a present tense form contrasting with *-er*, which is used for habitual or generic statements. In the past tense, however, *-iyor* combines with a past-tense suffix to indicate past progressive. There are two such past-tense markers: the direct experience form *-di*, contrasting with *-miş* for various kinds of nondirect experience, as described in Chapter III E. Aspectual distinctions in the past are made by appending *-iyor* or *-er* to the verb, before *-di* or *miş*.

Various forms of expression which are not explicit markers of simultaneity but whose meaning contributes to the interpretation of two situations

⁷ If the order of clauses is reversed, then the subordinate clause occupies the postverbal position, where it carries reduced informational value, and is therefore further backgrounded. The preverbal position in Turkish is the focus position; whatever occurs in the postverbal position functions like an afterthought.

as simultaneous are similar to those in German. Thus, utterances which contain expressions with a durative, imperfective meaning will, if preceded or followed by an utterance which does not contain a specific temporal reference, yield the interpretation of simultaneity. Devices of this sort are: *hala* 'still', *hemen* 'immediately', *tam* 'just', NOMINALIZED INF+LOC (*V+mekte*) 'in the process of V-ing', locative phrases, etc. Also, as in German, complement and causal clauses yield an interpretation of simultaneity if there is no other temporal relation marked explicitly, as in (6) and (7).

(6) *Köpeğin uyuduğunu görüyor.*

'He sees that the dog is sleeping.'

(7) *Arılar onu kovaladığı için kaçıyor.*

'He's running away because the bees are chasing him.'

Finally, the particle *de*, which means 'and' or 'also/too', depending on context, and which has the pragmatic force of focusing the element which it follows, implies simultaneity. It functions as a compensatory device in the children's speech, similar to the German *auch* 'also', as in the following 5-year-old example:

(8) *Çocuk da sesleniyor köpek de arıların yuvasındaki şeyi rahatsız ediyor*
'The boy *de* calls the dog *de* disturbs the thing in the bee's nest.' [T5e-6;0]

The explicit devices for expressing simultaneity in the two languages thus differ significantly, since German relies only on lexical means, whereas Turkish can make quite extensive use of morphological means as well. The range of devices in these two languages can be summed up as follows:

Adverbs:

German: *währenddessen, gleichzeitig, mittlerweile...*

'meanwhile, at the same time, in the meantime'

Adverbial Phrases:

German: *in der Zwischenzeit, in dem Moment, zur gleichen Zeit...*

'in the meantime, at the moment, at the same time'

Turkish: *bu/o svrada, bu/o arada, öbür tarafta, o zaman...*

'in the meantime, on the other side, at that time'

Connectives:

German: *als, wenn, während, wie...* 'when, while'

Turkish: converbs: *V+ince, V+ken, V+ip, V+erek*

'when, while, and (then), by doing'

Adverbial Clauses with Nominalized Verbs:

German: *bei*+NOMINALIZED INF, *während*+NOMINALIZED INF

Turkish: *V+diğinde*, *V+diği zaman*

4. DEVELOPMENTAL HYPOTHESES

Two developmental domains can be studied in interrelation through the concept of simultaneity: (1) development of discourse competence and narrative structure, and (2) development and use of expressive devices.

With regard to discourse competence, although even the younger speakers produce sustained pieces of discourse, they still have a long way to go before they reach the narrative proficiency of the adults. Prior research, coupled with findings from the present study, suggest the following developments along different but interrelated dimensions (see Chapters IIA and IIB).

- The type of discourse will change from picture-to-picture description to narration.
- This implies a change in the type of cohesion established in the texts from local (utterance by utterance, pairs of utterances) to global, text-level organization.
- This in turn implies development of the ability to conceptualize a number of single states and events as parts of one complex overall event on the basis of their temporal relations
- Once children are able to organize their speech output along a narrative thread, they are ready to move from mere juxtaposition of equally weighted pieces of information to hierarchical structures in discourse.
- Between the 5-year-old age group and the adults there is an elaboration of hierarchical structures in discourse (grounding, chunking, giving perspective, referring backwards and forwards, etc.).

These general observations about developing discourse abilities yield the following predictions for how the functions of simultaneity in narration can be expected to change. Initially, at the early phases of development, verbalization will be governed by simultaneity of perception (for each picture frame) and deictic orientation will provide the anchor for the different pieces of information. As children move on to developing a temporal structure in discourse, they learn to distinguish the different functions of simultaneity with respect to foregrounding and backgrounding. The first steps in this direction are characterized by a struggle for expressive devices making these distinctions. The course and speed of development in this as in other areas will be influenced by the verbal means available in the native language. The more elaborate the narrations become, the more *sim*-utterances of all different types

they will contain in quantitative terms, serving the narration function of adding background information to the events given in the pictures.

With respect to the linguistic devices available for expressing the concept of simultaneity, three different, but interrelated types of developmental changes can be predicted:

- New forms will be acquired and added to the available repertoire.
- The functions of available forms will change across time.
- Certain juvenile forms will be abandoned.

For the concept of simultaneity specifically, there will be a stepwise development of forms reflecting the complexity of types and functions of simultaneity (Section 2). The structural properties of the devices available in a language (morphological marking, lexical expressions, forms used in coordinate or subordinate constructions as outlined in Section 2) will also affect the developmental process. Yet it is not *a priori* obvious how the two factors of conceptual complexity and structural complexity interact to determine the developmental sequence of simultaneity marking in narrative discourse. To this end, we turn to an analysis of the form and function of simultaneity in our frog story sample.

5. DATA ANALYSIS

This analysis focuses on the data from German and Turkish (5.1) followed by a brief overview of findings for Spanish, Hebrew, and English (5.2).

5.1. The German and the Turkish Data

This section provides a quantitative overview of the linguistic devices used for the expression of simultaneity in German and Turkish followed by a discussion of each age group in turn under the three headings of: (A) discourse structure, (B) function and level of simultaneity in discourse, and (C) expression of simultaneity.⁸

5.1.1. Means for expressing simultaneity

Table 1 presents the quantitative breakdown for the German, and Table 2 for the Turkish data. The first part of each table lists all lexical items (Ia — conjunctions, Ib — adverbs) used for referring to simultaneity; part II lists the devices which, in the given context, imply the simultaneity of two situations;

⁸ The first heading, "discourse structure," summarizes patterns for each age group, as presented in Chapter IIA, Section 4, where developmental profiles are given for the entire language sample, with examples from English and Hebrew.

part III lists "compensatory" devices, found mainly in the data of younger children. The first figure gives the absolute number of occurrences of a given form in a given age group, the second — following the slash — the number of speakers who use the form — e.g., 10/5 means the form was used 10 times, and occurred in 5 texts.

TABLE 1
Distribution of Expressions of Simultaneity in German, by Age

	3 yrs	5 yrs	9 yrs	Adult
Ia)				
CONJUNCTIONS:				
<i>als</i>		2/2	10/5	13/8
<i>wenn</i>			1/1	
<i>während</i>			1/1	18/6
<i>wie</i>	1/1		2/2	6/4
Ib)				
ADVERBS:				
<i>inzwischen</i>			2/1	9/6
<i>in der Zwischenzeit</i>			3/1	1/1
<i>mittlerweile</i>				3/1
<i>währenddessen</i>				3/1
<i>derweil</i>				1/1
<i>dabei</i>				8/6
<i>gleichzeitig</i>				1/1
II)				
<i>da</i>	1/1	5/3	14/7	13/7
<i>denn/weil</i>	3/2	2/1	9/5	12/6
<i>ob</i>	2/2	3/3	5/3	2/2
<i>gerade</i>	3/2		6/2	
<i>plötzlich</i>		1/1	8/5	6/6
<i>auf einmal</i>		1/1	4/2	4/2
<i>bei + INF</i>			1/1	
III)				
<i>auch</i>	2/2	11/7	20/7	4/3

TABLE 2
Distribution of Expressions of Simultaneity in Turkish, by Age^a

	3 yrs	5 yrs	9 yrs	Adult
Ia)				
CONVERBS:				
<i>V+ince</i>	2/1	6/3	4/3	13/6
<i>V+erken</i>	3/2	5/3	11/8	28/10
<i>V+ip</i>		5/6	1/1	11/7
<i>V+erek</i>		1/1	12/3	10/5
ADVERBIAL CLAUSES:				
<i>V+dik+de</i>		7/2	3/3	13/8
<i>V+diği zaman</i>		2/2	9/4	
Ib)				
ADVERBIALS:				
<i>o zaman</i>	6/3		3/2	
<i>bu/o sırada</i>		1/1	8/3 ^b	18/5 ^c
<i>bu/o arada</i>			2/3 ^b	27/7 ^c
<i>öte yandan</i>				6/3
<i>tam o sırada</i>				4/3
II)				
COMPLEMENT CLAUSES:				
<i>V+dik V</i>		2/2	1/1	14/9
<i>V+me V</i>				2/2
<i>V ki</i>		3/3	3/2	1/1
ADVERBIAL CLAUSES:				
<i>V+dik için</i>	1/1	4/2		6/5
<i>çünkü</i>		2/1	1/1	2/2
III)				
<i>de^d</i>	16/7	28/9	24/7	31/9

a. All occurrences in contexts where simultaneity is implicitly or explicitly expressed.

b. Same 3 children.

c. Total of 9 adults.

d. All occurrences in contexts where simultaneity is implicitly or explicitly expressed.

5.1.2. 3-year-olds

A. Discourse structure: 3-year-olds

The 3-year-old children produce descriptions based on the picture frames.⁹ The following are indicators of a descriptive text-type. First, most of the utterances are introduced by, or contain a deictic adverb referring to the spatial arrangements in the pictures (*da/hier, burda/orda* 'here, there'). That is, the children describe what they see in the picture without relating the different situations to each other — either across pictures or within one picture. This results in a discourse structure in which the utterances are added to each other as "equal" pieces of information. There is no differentiation between foregrounded and backgrounded clauses. Second, no distinction is made between situations of different types (events, states). The children take the spatio-temporal frame of a picture as given (both for the interlocutor and the speaker), and this allows them to present the information piece by piece, without marking internal relations explicitly.¹⁰ A third kind of evidence for this strictly descriptive mode derives from the fact that the children "count" the events or states if they occur in subsequent pictures (*nochmal, wieder* 'once more, again', *burda da* 'and here, here again'). This shows that they do not conceive of the pictures as part of one overall story, but as separate items.

Although none of the 3-year-olds constructs a coherent story based on a temporally advancing plotline, the first steps towards a temporal structure appear in groups of utterances referring to one picture, as reflected in the type of connector used in utterance-initial position. The German children vary between a deictic pointer (*da, hier* 'there, here'), *und* 'and' as a connector, and zero. Although the use of the different forms is not totally systematic, a clear tendency can be observed. If two or more pieces of information are conceptualized as belonging together — either as simultaneous activities or as temporally sequential actions of one or more protagonists — then the utterances will be connected by *und* without an additional deictic adverb. The Turkish children also use the spatials *burda/orda* 'here/there' or sometimes the temporals *şimdi/sonra* 'now/then' as deictic pointers. If two or more situations are conceptualized as simultaneous, this is indicated by the absence

⁹ G3k, T3b, and T3i are exceptions in that they partly conceptualize an underlying temporal structure.

¹⁰ Pronoun usage supports this interpretation. The children do not use pronouns anaphorically, but deictically, pointing to the pictures. What seems to be a wrong use of a pronoun under discourse perspective is perfectly acceptable if interpreted as deictic reference, e.g. *und da kuckt der Junge und da leckt der* 'and there the boy looks and there he [=dog] licks' [G3f-3;3]. This is also characteristic of Turkish 3-year-olds.

of deictics and by the use of the focus particle *de* 'and/too/also' in the second clause. Use of a DEICTIC POINTER + *de* simply indicates movement to the next frame and, occasionally, sequence.

As summarized in Chapter IIA, at this age children "produce deictically related descriptions in which spatial co-presence, and not temporal sequence, is the major structuring factor."

B. Simultaneity in discourse: 3-year-olds

If it is the case, as we assume, that children at this age do not yet have a concept of a timeline which allows the integration of separate events or states into one overall conceptual representation, then their concept of simultaneity must differ essentially from a fully developed concept. The concept of an abstract time axis would be a precondition for relating situations internally to each other. Therefore, the children do not conceive of two situations as being simultaneous (or sequential) in the fictive temporal frame of the story. Simultaneity on the "time axis of events" does not exist for them.

This claim is well supported by the German data, where there is not a single occurrence of an expression referring to the relation of simultaneity in the 3-year-old texts. The Turkish data, on the other hand, present a few exceptions. Some of the children try to use an explicit marker, although few of these attempts are successful. Beyond these exceptions, what we find in the texts of both groups of 3-year-olds is simultaneity of a different type. The children follow what we have called "simultaneity of perception" in the organization of their discourse. All the information given in one picture frame is embedded into one temporal frame which is defined by the act of perception. In the examples which follow, German precedes Turkish. Examples are presented clause-by-clause, as in the transcripts, in order to highlight relations between events encoded in each clause.

(9) *und da hat der Angst*

'and here he is afraid'

da fliegen die ganzen Fliegen

'there fly all the flies'

und da ruft der nach

'and there he calls after them' [G3g-3;8]

(10) *köpek ağlıyor*

'(the) dog is crying'

kaçıyor

'(he)'s running away'

bu da onu yakalamak istiyor

'and this one wants to catch him' [T3h-3;11]

All utterances are independently anchored at the deictic center.

One could argue that this type of presentation does not involve any temporal concept at all. There is, however, clear evidence that these children have developed some concept of time, compared to the state of a 2-year-old pointing at a picturebook and saying something like, *Da ist die Kuh* 'there is the cow', *Da ist das Auto* 'there is the car'. This is shown by a string of clauses as in (11).

(11) *und daraus kommt gleich die Ente*

'and the duck comes out of there right away'

und da das Bienenhaus runtergefallen

'and there the beehive fallen down'

und da erschreckt sich der Hund

'and there the dog is scared' [G3c-3;11]

The use of the present perfect in the second clause, referring to a state which is the result of a temporally preceding event, shows that 3-year-olds may take the deictic center as a **reference point** which they maintain for all utterances related to one picture. For the German child, the shift from present to present perfect might be a trigger for conceptually separating the three time axes involved in discourse (event, reference point, and time of perception). At this point they cannot be handled separately. In presenting the information, reference point and time of perception always coincide. But this step seems to provide the basis for the formation of a temporal structure in discourse later on.

Turkish children also show alternations between tenses which are deictically anchored: the present *-iyor* for ongoing activities and the perfect *-miş* for resultant states.¹¹

(12) *arılar çıkmış*

'the bees (have) exited' [V+miş]

¹¹ The *-miş* form has several related functions, as discussed in Chapter III.E. Here, in alternation with the present, it serves as a sort of resultative, stative, or present perfect. In contrast, as the dominant tense of a story, *-miş* serves as the narrative tense. As a modality marker, it indicates indirect or non-witnessed source of information (inference, hearsay).

dala çıkmış

'(has) climbed the branch' [V+miş]

deliğe bakıyor çocuk

'and is looking into the hole, the boy' [V+iyor] [T3b-4;0]

Additionally, in the texts of three children we find occasional attempts to switch to a past anchoring point by more complex tense shifting, as in the excerpt from a 3-year-old text in (13), switching in the past from *-miş* to the past progressive V + *iyor+di*.

(13) *öyle çocuk da domuzun üstüne düşmüş*

'and the boy also fell on top of the pig like that' [V+miş]

sonra, sonra, şey yapmış

'then, then, he did something' [V+miş]

çocuk düşüyordu, düşüyordu düşüyordu

'the boy was falling, was falling was falling' [V+iyor+di]

az kalsın düşmüş

'he almost fell' [V+miş]

bak düsmüş yaa!

'look he fell!' [V+miş]

sonra, sonra şey yapmış

'then, then he did something' [V+miş]

böyle denizden çıkıyordu

'he was coming out of the sea like this' [V+iyor+di] [T3c-4;3]

It is evident from these examples, however, that the shifts are mainly aspectual and determined by how events are depicted in the pictures — as bounded events that can be viewed perfectly or as unbounded states/processes that can be viewed imperfectly. An utterance in the past progressive, for example, remains as much deictically anchored as one in the present since there is as yet no discourse-internal timeline that can provide an anchoring point. Nevertheless, such sporadic shifts of tense suggest that these children are at the beginning of the process of differentiating the temporal axis of events from that of perception. The fact that some of the 3-year-olds use explicit markers also supports this view.

The tense forms are not the only area in which the first signs of a time concept are manifested. Further contexts which seem to be especially important for the development of the concept of simultaneity are created by **combinations** of specific situations, as in the following three sets of different

temporal relations between the protagonists.

(14) **Protagonist 1 + verb of perception / Protagonist 2 + verb of action/state:**

(14a) *und kucken sie hinter*

'and they look behind'

und da sitzen zwei Frösche

'and there sit two frogs' [G3d-3;6]

(14b) *köpek de başına kavanozu geçiriyor*

'and the dog puts the jar on his head'

çocuk da bakıyor

'and the boy looks' [T3b-4;0]

(15) **Protagonist 1 + verb of mental/affective state / Protagonist 1 or 2 + verb of action/state:**

(15a) *der meint*

'he believes'

da is immer noch gerade

'that it is still flat there' [G3c-3;11]

(15b) *sonra ağacın üstüne konunca*

'then when it lands on the tree'

onlar korkuyorlar

'they are afraid' [T3i-3;11]

(16) **Protagonist 1 + verb of position / Protagonist 2 + verb of action/state:**

(16a) *der Hund, der sitzt da*

'the dog, he sits there'

und der hat die Augen zu

'and he [=boy] has his eyes closed' [G3k-3;7]

(16b) *bir tane baykuş çıkıyor*

'an owl comes out'

çocuk yere yatmış

'the boy is on the ground' [T3g-4;1]

Pairs of clauses like these provide the contexts in which early forms of *sim*-marking occur, as in the following use of *-ken* by a child of age 3;11.¹²

¹² These are also the contexts in which the first forms of subordination occur (complement

(16c) *uyurken de*

'and while.sleeping' [=boy and dog] [V+*ken*]

ordan çıkıyor uslu uslu

'it [=frog] comes out of there slowly slowly' [T3i-3;11]

In sum, these 3-year-olds have developed only part of the concept of simultaneity. **Simultaneity of perception** is the basis for their discourse organization. This implies that the temporal relation of simultaneity does not have a specific discourse function in opposition to other temporal relations. The first movement towards a conceptualization of temporal relations is made locally between adjacent clauses, and depends on the **content** of the specific clauses.

C. Expression of simultaneity: 3-year-olds

GERMAN

Explicit devices for expression of time relations are not used by German children of this age, in line with what has been said about conceptual development in this domain. Certain verbal patterns can be interpreted as incipient markings of simultaneity, all on the level of two adjacent utterances, thus:

- Use of deictic adverbs could be the basis for a rule which says that those clauses which do **not** contain a deictic adverb are to be interpreted as simultaneous with the one preceding.
- Elliptical clauses (subject or verb ellipsis) indicate a closer relation to the preceding utterance and often imply simultaneity.
- Parallel constructions and wording are used to refer to simultaneous activities of two or more protagonists — sometimes supported by the adverb *auch* 'also', as in *Der Junge kuckt und der Hund auch* 'the boy looks and the dog also' — two occurrences at age 3 (G3d-3;6, G3g-3;8).
- A few instances can be found of devices which imply simultaneity because of their lexical semantics — e.g., complement clauses with *daß* 'that' and causally connected clauses with words like *weil, ob* 'because, whether'; and also verbs like *zugucken* 'watch' or *hinterherlaufen* 'run.after' which presuppose two simultaneous situations.

None of these devices explicitly express simultaneity. Understanding of the temporal relation is always based on inference. Therefore we cannot be sure whether the child actually intends to establish a temporal relation or whether this is just the interpretation of an adult drawing upon a fully developed time concept.

clauses, adverbials of reason, and relative clauses).

TURKISH

In contrast to the total absence of explicit markers in the German data, half of the Turkish children use an explicit form to indicate simultaneity. Although this seems to make them ahead of their German peers, their narratives show a similar lack of abstract temporal organization. For most of the 3-year-old Turkish texts, like those in German, simultaneity must be inferred from typical verbal patterns and some compensatory devices that operate on the level of two adjacent clauses:

- The reference of those clauses which do **not** contain a spatial or temporal deictic adverb is to be interpreted as simultaneous with that of the preceding one, frequently supported with the particle *da* 'and/also'.
- Elliptical clauses typically imply simultaneity.
- Use of parallel constructions and wording to refer to simultaneous activities of two or more protagonists, frequently supported with the particle *de* 'also/too', as in *Çocuk uyuyor; hav hav da uyuyor* 'The boy is sleeping; the dog is sleeping too' [T3f-4;0].
- Devices which imply simultaneity because of their lexical semantics include verbs like *bakmak*, *seyretmek* 'watch' and *yakalamak istemek* 'want to catch', which presuppose two simultaneous situations.

Explicit markers of simultaneity found in the Turkish 3-year-old texts are adverbial clauses with the converbs *V+ince* 'when', and *V+ken* 'while', and the adverbial *o zaman* 'at that time/then'. About half of these occurrences (5/11) are infelicitous, however, because they are redundant, involve a grammatical error, or occur in fictive statements with confused content. The few meaningful examples are successful in setting up the time of event 1 as reference time for event 2, but refer to situations that are part of the same picture frame, described in deictically anchored clauses, as in the Turkish 3-year-old examples in (17) and (18).

(17) *burda köpek düşmüş aşağıya*

'here the dog has fallen down'

camdan bakarken

'while looking out the window' [V+ken] [T3a-3;6]

(18) *arılar çıkıyor*

'the bees come out'

o zaman birşey görüyor

'at that time he sees something' [o zaman]

onun içinde arı varmış

'there are/were bees in it' [T3i-3;11]

In sum, most of the Turkish 3-year-olds make use of devices which imply simultaneity, while a few try out explicit forms — but half of the clauses so paired cannot really be interpreted as making reference to simultaneity. In other words, the presence of a surface form does not necessarily indicate that a meaningful temporal relation has been established. Thus, in both German and Turkish, 3-year-old narrations seem to rely largely on context for the inference of a temporal relation.

5.1.3. 5-year-olds

A. Discourse structure: 5-year-olds

The 5-year-old children do not form a homogeneous group in either German or Turkish. Rather, they are at an intermediate stage between description and narration. Some of their texts still look very much like the descriptions given by the 3-year-old children (G5d, G5g, G5j, G5k; T5b, T5c, T5g, T5j), though with a difference, in that they make more reference to the events or processes that protagonists are engaged in. And the majority of their texts show clear signs of temporal organization. These children use a number of different temporal expressions (German: *erstmal*, *am nächsten Morgen*, *schon*, *noch*, *jetzt*, *zuerst*, *und dann*, etc. 'first of all, the next morning, already, still, now, at first, and then'; Turkish: *şimdi*, *sonra*, *birgün*, *V+ken*, *V+ip*, *V+diğinde*, *V+diği zaman*, etc. 'now, then, one day, while, and (then), when'). Most of these serve to establish temporal relations between adjacent clauses. Interestingly, some of the German and most of the Turkish 5-year-old texts forego spatial deictic adverbs (*hier/da*, *burda/orda* 'here/there') in favor of temporal adverbs (*jetzt*, *şimdi* 'now', or *dann*, *sonra* 'then') which fulfill the same function: anchoring separate situations or introducing new frames. Compared to the younger children, the underlying principle structuring their texts has progressed from spatial to temporal (or combined) organization, implying the development of different temporal categories, such as sequence and simultaneity.

In terms of discourse organization, the 5-year-olds are to some extent similar to the 3-year-olds. They construct their texts utterance by utterance, without indicating any functional differences between them. The beginning of their narrations provide good evidence for this strategy, since they fail to make a functional distinction between scene-setting and the beginning of the actual story (event-line).¹³ And there are hardly any indications signaling

¹³ Exceptions are G5a and G5j, where the onset of the plotline is indicated by *auf einmal*

larger units of discourse beyond the two-clause level, such as narrative chunks based on specific types of referential continuity. The most important step which has been taken by the 5-year-olds is the development of a time concept. But this is not yet used as a basis for a hierarchical organization of discourse, with a few isolated exceptions. Thus, a few of their texts show initial, still rather chaotic, signs of functional differentiation by means of tense shifting. And two Turkish 5-year-olds show the beginnings of chunking through use of converbs, resulting in discourse units of three clauses long.

B. Simultaneity in discourse: 5-year-olds

In developing an abstract concept of time, a new dimension emerges: In our terms, simultaneity between situations in the story on the axis of events. The 5-year-olds make a distinction between a **sequence** of events and **simultaneous** events or states, reflected in German by the motivated use of *dann* 'then' in contrast to other nontemporal connectors and the pattern of tense shifting, and in Turkish by the use of *sonra* 'then', by morphological markers of simultaneity (V+ince, V+ken, V+diği zaman, V+diğinde) and by tense-aspect alternations.

It thus appears that the 5-year-olds have conceptually mastered all three types of simultaneity. But these are not yet integrated into one overall temporal structure. Just as the texts of these children alternate between descriptive and narrative modes, they may also vary types and functions of simultaneity within a single text. Some segments follow the pattern observed for the 3-year-olds, with simultaneity of perception supplying the structuring principle, whereas others show a narrative pattern with temporally sequential events as the backbone of the discourse. In the latter case, simultaneity is established between an unbounded state and an event, as in (19) and (20).

(19) *und der Hund steht da*

'and the dog stands there'

das Bienenhaus fällt runter

'the beehive falls down' [G5f:5;10]

(20) *burda da bu çocuk uyuyor*

'and here this boy is sleeping'

köpek de yanında uyuyor

'all at once' in G5a, and a change from the spatial adverb *da* 'there/here' to the temporal adverb *dann* 'then' in G5j. Exceptions in the Turkish group are T5a and T5g. Both children make use of different temporal adverbs (*şimdi-sonra* 'now-then') and tense shifting for this type of demarcation.

'and the dog is sleeping next to him'

kurbağa çıkıyor şeyin içinden

'the frog is coming out of the thing' [T5b-5;0]

We also find two events related to different protagonists, as in the following example.

(21) *da rennt der Hund vor weg*

'there the dog runs away'

und der Junge fällt vom Baum runter

'and the boy falls down from the tree' [G5c-5;11]

(22) *baykuş geldi*

'the owl came'

çıkarken

'while.climbing' [=boy] [V+ken] [T5e-6;0]

These first steps towards grounding do not as yet result in a consistent temporal organization that would link the events/states to a continuous time axis (axis of discourse). The relations established are always local. As a result, simultaneity remains ambiguous with respect to its discourse function within the text as a whole.

C. Expression of simultaneity: 5-year-olds

The means used for referring to this temporal relation reflect the fact that the 5-year-olds are in the middle of a developmental process, with the Turkish group apparently ahead of the German.

GERMAN

On the one hand, all the forms that the youngest children use are present among the 5-year-olds as well: deictic and anaphoric connectors for expressing the difference between shift and maintenance of temporal reference, elliptical clauses, and parallel wording and constructions. The reinforcing *auch* 'also' is used more frequently by the 5-year-olds, as shown in examples (23) and (24).¹⁴

(23) *da lief der Hund*

'here the dog ran'

¹⁴ Sometimes *auch* 'also' is used inappropriately with different verbs, suggesting that it carries a mainly temporal meaning.

und da lief das Reh auch

'and here the deer ran too' [G5a-5;7]

(24) *der rennt ganz, der rennt weg*

'he runs far, he runs away'

und der Junge ist auch vom Baum runtergefallen

'and the boy has also fallen down from the tree' [G5d-5;3]

The German 5-year-olds also use a few more subordinating constructions — complement clauses with *daß* 'that', and adverbials with *weil* 'because'. These occur in the same types of situations as those signifying the first conceptualizations of simultaneity in the 3-year-olds' texts, that is, co-occurrences of a state (affective, cognitive, or perceptual) with an event or state, as in (25) and (26).

(25) *und dann ist der Hund froh und der Junge*

'and then the dog is happy and the boy'

daß er jetzt ein [sic] Frosch hat, ein [sic] kleinen

'that he has a frog now, a little one' [G5e-5;0]

(26) *und jetzt sehen die da*

'and now they see there'

daß er raus ist

'that he is gone' [G5g-5;3]

Five-year-olds use a few new forms, especially the conjunction *als* 'when' to express simultaneity of an event and another situation (only two instances). There is also a change in tense usage. The incipient temporality signified by present/present-perfect alternations among 3-year-olds is restricted mainly to those 5-year-olds who still favor the descriptive mode of narration, as illustrated in (27) for German.

(27) *und die Bienen fliegen daher*

'and the bees fly from there'

und der Junge ist umgekippt

'and the boy has fallen over'

und da sind Steine...

'and there are rocks there...' [G5j-5;3]

Moreover, an age-related change in tense usage is the use of the simple past and sometimes even the pluperfect in addition to the present perfect and the present. Some 5-year-old texts even show an apparently unsystematic shifting of tenses across the board (e.g., G5a, G5e, G5h).¹⁵ The different tenses do not appear to have a clear functional import — for either time reference or discourse organization, so that these 5-year-olds can best be regarded as being at an "experimental" stage. There is, however, a tendency for the simple past to occur in the context of what would be backgrounded material in an adult narrative — mainly states, as in (28) and (29).¹⁶

(28) *und dann ruft er ganz laut*

'and then he calls really loudly'

aber er kam nicht, der Frosch

'but he didn't come, the frog' [G5e-5;0]

(29) *der ist runtergefallen*

'he has fallen down'

weil die Eule da war

'because the owl was there'

die beißt ja

'it bites, you know'

und die Eule fliegt weg

'and the owl flies away' [G5d-5;3]

These findings suggest that shifting of tenses between simple present, simple past, and present perfect constitutes an early device for expressing simultaneity as a temporal relation and also serves as an indicator of the discourse function of backgrounding. Note, finally, that even in clearly narrative passages, the temporal relation of simultaneity is never explicitly marked by adverbials in the German 5-year-old texts. Rather, it needs to be inferred from the inherent temporal properties of the situations or from world knowledge about situations with this property, as in (30).

(30) *schlafen die jetzt*

¹⁵ The 5-year-old German texts characterized by extensive shifting between tenses are also those which use a wider range of temporal forms, suggesting that these children rely particularly on temporal notions as a means for organizing their narrations.

¹⁶ The negative clause in (28) could be interpreted as a possible "event," although negatives are typically analyzed as background material in adult texts.

'they sleep now' [temporally unbounded state]

der Frosch geht aus das Wasser raus

'the frog goes out of the water' [event] [G5e-5;0]

TURKISH

The Turkish 5-year-olds use all the forms found in the 3-year-old texts, such as deictic and anaphoric connectives and elliptical clauses, together with increased use of *de* 'and/too' and of the converbs *V+ince* 'when' and *V+ken* 'while', the latter occurring with a wider variety of verbs rather than just statives of perception and cognition. Moreover, these forms appear to have a new discourse function: *V+ince*, to introduce new information and so relate two foreground events and *V+ken*, to present a background event, as in (31) and (32).

(31) *sonra cam kırılınca*

'then when the glass breaks' [V+ince]

köpek de içinden çıkıyor

'the dog comes out of it' [T5h-5;0]

(32) *sonra camdan bakarken*

'then while.looking out the window' [=boy or dog] [V+ken]

bir kavanozu alıp da

'and taking a jar' [V+ip]

köpek başına geçirmiş

'the dog put (it) on his head' [T5g-5;2]

The Turkish 5-year-olds also use a number of new devices to mark simultaneity, in contrast to their German peers. First, they use the converb *V+ip* 'and (then)', a connective which presents two events by the same protagonist as closely related either in immediate succession or simultaneity — equally for both meanings at this age. In the last example above, two closely connected events are integrated with *V+ip* and juxtaposed as simultaneous against a third situation presented with *V+ken*. This example of a three-clause chunking of events illustrates how converbs provide the early means for integrating events in discourse. Other forms which occur for the first time in our 5-year-old Turkish sample are subordinating constructions *V+diğinde* 'at doing' and *V+diği zaman* 'at time of doing', which set reference time — mainly with perception/mental state verbs, as in the examples (33) and (34).

(33) *sonra bakıyor çocuk,*

'then the boy looks,'

uyandıığında

'at.his.waking.up' [V+diğiinde]

kurbağa yok

'the frog isn't there' [T5a-5;4]

(34) *kurbağayı orda göremedikleri zaman*

'at.the.time they.cannot.see the frog there' [V+diği zaman]

her yere bakıyorlar

'they look everywhere' [T5b-5;0]

These constructions typically serve to stativize an event and introduce it as background — at this age, only at the local level. A third device which comes in occasionally (only three instances) is use of complement clauses for implying the *sim*-relation — again in the same contexts, as in (35) and (36).

(35) *bir hayvanın birşeyini gördüler*

'they saw some thing of an animal'

ne olduğunu bilmiyorlardı

'they didn't know what it was' [T5a-5;4]

(36) *sonra çocuk "sus" diyor*

'then the boy says "quiet"'

köpek ne olduğunu farkında yok

'the dog isn't aware of what's happening' [T5e-6;0]

There are also a few instances of the causal conjunction *çünkü* 'because' or *V+diği için* 'because of its V-ing' introducing a coterporal state as a reason for another state or event, as in (37).

(37) *sonra köpek de şeyin içine baktı*

'then the dog looked into (that) thing'

çünkü köpek pek göremiyordu

'because the dog couldn't see much' [T5a-5;4]

Use of tense markers shows a varied development: alternation of tense-aspect forms differentiates between events and unbounded situations, yielding the interpretation that they are simultaneous, as in (38) and (39).

(38) *çocuk düştü*

'the boy fell' [V+di]

arılar da köpeği yakalıyorlar

'and the bees are catching the dog' [V+iyor]

baykuş da seyerediyor

'and the owl is watching' [V+iyor] [T5e-6;0]

(39) *sonra da çocuk ona kızdı*

'and then the boy got mad at it' [V+di]

köpek hala seviyor

'the dog still loves (him)' [V+iyor] [T5e-6;0]

A more significant change, observed in a few 5-year-old texts (and hinted at in a few by age 3), is marking of progressive aspect in past tense, contrasting it either with the past of direct experience (-di versus -iyor+di) or with the narrative past (-miş versus -iyor+miş). This yields a clear marking of unbounded situations as backgrounds relative to plot-advancing events, as in (40).

(40) *sonra bir ara geyiğin üstünde çocuk*

'then for a while the boy is on the deer' [V+Ø]

bir küçük kurbağa yakalamak istiyorlardı

'they were wanting to catch a little frog' [V+iyor+di]

burda çocuk ve köpeği düşüyor

'here the boy and his dog fall' [V+iyor] [T5e-6;0]

Now, tense switches are motivated by factors internal to discourse (such as the tense of the previous clause) rather than by event properties depicted in pictures. A shift from past to past progressive may serve to present background information through a retrospective switch as in the example from T5e above, or through establishing a new spatio-temporal framework for subsequent events, as in the rather unusual example excerpted in (41).

(41) *kurbağa daha uzaklaştığında*

'at the frog's being.further.away' [V+diğinde]

kurbağa diye bağıyorlar

'they call "frog"' [V+iyor]

ormanlara girdiğinde

'at.its.entering [=frog's] the woods' [V+diğinde]

yine kurbağa diye bağıyordu

'again he was calling "frog"' [V+iyor+di]

ondan sonra bir delik buldular

'then they found a hole' [V+di] [T5a-5;4]

In contrast to the 3-year-olds' deictically anchored alternations between -iyor and -miş, 5-year-olds' use of such shifts within the past or nonpresent/irrealis, combined with temporal connectives, show that children are no longer tied to the temporal axis of perception, but are trying to differentiate between the time axis of events and the time axis of discourse. This points to a noticeable move away from the descriptive towards the narrative mode in certain segments of the 5-year-old Turkish texts.

These observations, together with the finding that most Turkish 5-year-olds use at least some explicit marker of simultaneity, indicate that, at this age, the Turkish children display a richer repertoire than their German counterparts. They are thus in a more advantageous position for discovering the various semantic and discourse functions of these devices. This, we suggest, may in turn lead to earlier achievements in the differentiation and integration of temporal relations at a local level.

5.1.4. 9-year-olds

A. Discourse structure: 9-year-olds

The 9-year-old texts reflect a narrative pattern in their basic structure, adopting the time axis of events as the organizing factor. The sequence of pictures has been transformed into an abstract representation of a temporally sequential chain of events, embedded in particular situational contexts. This means that the children conceptualize a twofold temporal structure, consisting of the time axis of events, on the one hand, and the time axis of discourse on the other. These two coincide most of the time, with the reference time moving along with the sequence of events.

An important progression in this age group is that the temporal thread of discourse has become independent from the time axis of perception. This is manifested in the frequent use of *dann* or *sonra* 'then' and other temporal connectives and adverbials within and across pictures. Temporal expressions now frame short episodes moving across three to four pictures within which events are related to one another as sequential or as simultaneous. This is particularly evident in some of the Turkish texts (T9a, T9c, T9d, T9g, T9i, T9j) where, typically, new episodes are marked with adverbs such as *daha sonra* 'later on', *şimdi* 'now', *birgün* 'one.day', and episode-internal events are related temporally by converbs and subordinating constructions. Nonetheless, there are still switches into the descriptive mode, such as the examples in (42) and (43) from German and Turkish 9-year-olds.

(42) *da ruft der*

'here he calls'

und da ist ein Geweih von dem Hirsch

'and here are the deer's antlers'

da ist der Hund

'here is the dog'

und da rennt der Hirsch so los

'and here the deer is running away' [G9g-9;10]

(43) *tosbağa ordan çıkıyor*

'the frog comes out of there'

çocuk da orda bir delik görmüş

'and the boy saw a hole there'

orda ağaca çıkmış

'there he climbed a tree' [T9f-10;1]

None of the 9-year-old texts, however, rely on this as the only way of presenting information. They all contain narrative passages, and most are predominantly narrative in content and organization.

Does this mean that by this age, children have achieved adult-like discourse competence? Even a superficial glance at the adult texts shows that this is not the case. Constructing a text along a temporal thread is not the whole story. Nine-year-olds do not integrate the individual events into a temporal and thematic whole; rather, they present event after event, often separated by the temporal shifter *dann/sonra* 'then' without attributing different informational weight to the various parts. This implies that temporal organization in terms of foregrounding/backgrounding or chunking into episodes cannot be found on a global discourse level. This clearly does not mean that the overall discourse structure of the 9-year-olds is the same as that of the younger groups. As noted in Chapter IIA, 9-year-olds refer to the global search theme, particularly in contexts where the boy and the dog are depicted as calling out to the frog. But such reinstatements do not serve as a thematic background, since the subsequent events are presented as if they were independent happenings, as in example (44) from a Turkish 9-year-old.

(44) *sonra köpeğiyle beraber aramaya çıkıyor*

'then he goes out to search with his dog'

ondan sonra üstünü giyiyor,

'then he puts on his clothes'

sonra köpek burdan aşağı düşüyor

'then the dog falls down from here' [T9c-9;1]

A few 9-year-old texts (e.g., T9i, T9j) do, however, illustrate the beginnings of a more adult-like thematic integration. Compare, for instance, example (45) from T9i, who relates the dog's fall explicitly to searching for the frog, to the example (44).

(45) *dışarda seslenmişler kurbağaya*

'outside, they called out to the frog'

o zaman da bulamamışlar

'at that time they couldn't find it either'

köpek de bağıırırken

'the dog, while calling'

düşmüş

'fell' [T9i-9;5]

Nonetheless, for most of the 9-year-olds, the first elements of discourse-level organization are confined to the **local** level, usually in connection with a single picture frame — in the form of elaborations on the situation or the mental states of the protagonists, comments on the story, etc. In such contexts, we can expect changes in the function of simultaneity.

B. Simultaneity in discourse: 9-year-olds

The narratives of the 9-year-olds contain all the levels of simultaneity found in the texts of the 5-year-old children, but with a change in frequency. Simultaneity on the axis of perception is now rare. Another difference concerns the types and functions of simultaneity which are expressed: Besides the basic concept of simultaneity as a relation between an unbounded state/ongoing process and an event, some 9-year-olds express the specific concept of two event-chains encoded by a number of clauses (*in der Zwischenzeit* 'in the meantime', *inzwischen* 'meanwhile'; *bulo sırada* 'meanwhile', *bulo arada* 'in the meantime'). This shows that they are able to make a distinction between simultaneous **chunks** of events, as foregrounded parallel activities of two or more protagonists, and **pairs** of simultaneous situations. They differ from adults in this respect, however, in generally being unable to chunk more than two events at a time.

The function of simultaneity as a relation shaping foreground and background in discourse finds expression in most of the 9-year-old texts. However, these children do not as yet control a full range of linguistic options with respect to this function. For example, the distinction between simultaneous states versus simultaneous events, is not linguistically reflected by the 9-year-old German children. For them, the two types seem to form a single category, expressed by the temporal conjunction *als*.¹⁷ The Turkish children, on the

¹⁷ It is interesting that the first *als* clauses occur in the same scene (Picture 3) in most of the texts. The formulation sounds almost stereotypical: *als der Junge aufwacht...* 'when the

other hand, express this distinction as early as age 5, by use of *V+diğinde* compared with *V+ince*.

C. Expression of simultaneity: 9-year-olds

GERMAN

As shown in Table 1, the 9-year-olds do not add many devices to the repertoire of the younger groups. Very few adverbials (group Ib) are used for referring explicitly to the relation of simultaneity (*inzwischen* 'meanwhile', *in der Zwischenzeit* 'in the meantime' in G9a and G9f are the only items). In most cases, the temporal relation needs to be inferred, either from the inherent temporal properties of the situations, or from the absence of a temporal shifter such as *dann* 'then'. Yet the same expressive devices as occur among the younger children here show a change in function based on the change in discourse structure. For example, the adverb *gerade* 'just, exactly', used as a deictic temporal expression by some of the 3-year-olds, is now used as a temporal adverb, relating two situations on the time axis of discourse, for example:

(46) *da kommt grad 'n Maulwurf aus dem Loch raus*

'here a gopher comes **just** out of the hole'

wo der Junge reingekuckt hat

'where the boy has looked in' [G9i-9;11]

The same change is found in the tense shift between present and present perfect. The reference point no longer relates to the time of perception, but to the internal timeline of the discourse, as in (47).

(47) *und morgens ist der Junge aufgestanden*

'and in the morning the boy has gotten up'

und dann sieht er

'and then he sees'

daß der Frosch verschwunden ist

'that the frog has disappeared' [G9b-9;0]

An expansion of meaning is also evident with respect to the adverbial *da* 'there'. For the 3- and 5-year-olds, the word has a deictic spatial meaning, whereas the 9-year-olds use it as a temporal anaphor indicating simultaneity, as in (48).

(48) *und der Hund war auf der Bettdecke*

boy wakes up...' and is closely parallel to the Hebrew 9-year-olds' description of this scene.

'and the dog was on the bedspread'

da schlüpfte der Frosch aus dem Glase heraus

'**there** [=then] the frog sneaked out of the glass' [G9l-9;5]

Another detail to note is the frequent use of *auch* 'also' to refer to simultaneous events or states. This increase could be due to the fact that these older children have become sensitive to temporal relations of different types, and therefore feel the need to express not only sequentiality by *dann* 'then', but also simultaneity, as in (49).

(49) *und dann rufen sie den Frosch hier*

'and **then** they call for the frog here'

und der Hund der bellt auch

'and the dog he barks too' [G9f-9;9]

Overall, then, development of temporality in German between ages 5 and 9 is manifested not so much by an increase in the lexical inventory as in a change in the functions of the same expressive devices — a change based on the development of discourse organization.

TURKISH

As in German, few devices have been added to the repertoire of the Turkish 9-year-olds: the adverbials *bu/o sırada* and *bu/o arada* 'meanwhile, in the meantime' (in only three texts) and the converb *V+erek* 'by doing' (see Table 2). However, both the frequency of existing forms and the number of children using them show an increase in this age group. Thus, most 9-year-old narratives mark simultaneity explicitly, by converbs, subordinating constructions, or adverbials, or else indicate it implicitly by tense-aspect shifts. There is no change in the use of complement or relative clauses for the expression of simultaneity.

The adverbials *bu sırada/o sırada* 'in the meantime', *bu/o arada* 'meanwhile', which indicate simultaneity between **chunks** of events in the adult texts, are used for interweaving **individual** parallel activities of two protagonists within a sequence of plot-advancing events. Thus they connect a pair of simultaneous situations rather than a chunk, as in (50).

(50) *çocuk hemen üstünü giyiyor*

'the boy immediately puts on his clothes'

bu arada köpek de kafasını kavanoza sokuyor

'**meanwhile** the dog inserts its head in the jar' [T9f-10;1]

The foregrounding function of *bu arada* 'meanwhile' derives from its clause-initial position.¹⁸ When coupled with other devices that function for local

¹⁸ When the adverb is non-initial, it tends to mark background information or to assign secondary status to the activity of the other protagonist.

backgrounding (such as converbs or other subordinating constructions), adverbs meaning 'meanwhile, in the meantime' may serve the more global function of signaling topic shift. Such interplay between grounding distinctions at the global versus the local levels is observed in the text of one 9-year-old, as illustrated by (51).

(51) *her yeri arıyorlar*

'they search everywhere'

bu sırada köpek ararken

'**meanwhile** while the dog is searching' [*bu sırada* = topic shift; *V+ken* = local backgrounding]

cam kavanoz köpeğin başına geçiyor

'the glass jar gets on the dog's head'

köpeklerle çocuk camdan beraber bakınıyorlar

'the dog and the boy are looking out of the window together'

o sırada köpek yere düşüyor

'**at that moment/meanwhile** the dog falls down' [*o sırada* = local foregrounding] [T9d-9;11]

The other new form is the converb *V+erek* 'by V+ing', used by only three narrators, in some cases erroneously. *V+erek* implies simultaneity by virtue of presenting two situations involving a single actor as very closely related, almost a single situation (Slobin, 1993a; Chapter IVC). This is illustrated in (52) and (53).

(52) *göle düşmüşler*

'they fell into the lake'

bir ağaç kovununa tutunarak

'holding on to a tree trunk' [*V+erek*]

çıkılmışlar

'they came out' [T9c-9;1]

(53) *ve ondan sonra bu hayvan da kızarak*

'and after that, this animal [=deer], getting-angry' [*V+erek*]

çocukla köpeği beraber

'the boy and the dog together'

sonu boşluk olan biryere getirerek

'bringing to a place which is empty at the end' [*V+erek*]

ordan göl, yani su birikintisine atıyor

'throws from there to the lake - that is, to the water pool'

[= And after that, this animal, getting angry, bringing the boy and the dog to a place where it's empty at the end, throws them from there to the water pool.] [T9d-9;11]

With the entry of *V+erek*, a corresponding change occurs in the semantic function of *V+ip* 'and (then)': It becomes restricted to indicating sequence, while *V+erek* takes over the function of implying simultaneity.¹⁹

The other developments involve changes in the discourse-structuring functions of already existing forms. The subordinating constructions *V+diğinde* and *V+diği zaman* are now used to present a situation as a background for a subsequent pair of sequential or simultaneous events marked with converbs or with the conjunction *ve* 'and', as in (54).

(54) *daha sonra bunlar gece uyuduğu zaman*

'later on at the time they sleep at night' [*V+diği zaman*]

kurbağa kavanozun içinden çıkıyor

'the frog goes out of the jar'

ve kaçıyor

'and escapes' [T9a-9;3]

Again, similar to German, spatial deictics assume a discourse-internal function and are used as means of indicating simultaneity, as in example (55).

(55) *ormanda arıyorlar*

'they search in the woods'

orda bir arı yuvası buluyorlar

'there they find a beehive' [T9a-9;3]

In contrast, there is a decrease in use of *de* 'also' as a simultaneity marker and it is used more as a focus particle. Given the availability of numerous explicit markers of simultaneity to the Turkish 9-year-old or adult, *de* is liberated for its normal pragmatic function, and can cooccur with explicit temporal adverbials.

Another difference from the younger age groups is a decrease in tense-aspect shifting. While an anchor tense is not clearly discernible for the 3-

¹⁹ This is suggested by the 9-year-olds' use of *V+erek* in certain contexts where 5-year-olds use *V+ip* as a sequence marker: *Onlara güle güle deyip uzaklaşmış* 'Saying [*V+ip*] bye he went off' [T5i-5;0] as against *Ve el sallayarak gidiyor* 'And waving [*V+erek*] his hand, he goes'.

year-olds and for a third of the 5-year-olds, all of the 9-year-olds stabilize to a single anchor tense: 70% with *-iyor*, 20% with *-miş*, and 10% with *-di*. Where the anchor tense is *-iyor*, shifts to the unmarked present and to *-miş* indicate simultaneity between background states and foreground events. If the anchor tense is *-di* or *-miş*, shifts to unmarked present indicate simultaneity of background states, and shifts to past or narrative progressive *-iyor+di*, *-iyor+miş* serve to background the simultaneous activity of the nonfocused protagonist of secondary importance to the storyline. Such clauses are inserted in a sequence of foreground clauses and result in local backgrounding.

Only one 9-year-old uses this type of aspectual shift for global backgrounding, contrasting clauses which serve to reintroduce the overall search theme with ones which describe specific events in the plot, as in example (56).

(56) *heryerde kurbağalarımı aramışlar*

‘they searched for their frog everywhere’ [V+*miş*]

ve arı kovanı görmüşler

‘and they saw a beehive’ [V+*miş*]

bir sincap yuvası görmüşler

‘they saw a squirrel nest’ [V+*miş*]

ismini bağırtıyorlarmış kurbağanın

‘they were calling the frog’s name’ [V+*iyor+miş*]

fakat ne yazık ki bulamıyorlarmış

‘but unfortunately they were not finding (it)’ [V+*iyor+miş*] [T9c-9;1]

Such shifts between *di*-past and *miş*-past demonstrate that the reference point is internal to discourse. The small amount of tense-aspect shifting among 9-year-olds can be explained by the increase in the type and frequency of explicit markers of simultaneity, since these can now effect the grounding distinctions signaled by tense-aspect shifts. There is also an increase in the use of relative and complement clauses for introducing background information, particularly from a retrospective perspective. Although they cannot exploit each device for all of its functions, 9-year-old children will try to use these complex constructions in constructing a cohesive text.

5.1.5. Adults

The German adults differ from the 9-year-olds in that they all use the present as the basic tense for their narratives. The Turkish adults are more mixed in their choice of anchor tense: 60% use the present *-iyor*, 20% the past of direct experience *-di*, and 20% the narrative *-miş*. There is, moreover, great variety between the adult Turkish texts in the elaborateness and lexical

richness of their narrations.

A. Discourse structure: Adults

The adult texts are organized on the basis of an overall thematic and temporal structure. They all follow a narrative pattern as the dominant form of presenting the information. Switches to a descriptive mode occur in some of their narrations, but then they are explicitly introduced by expressions such as *auf dem nächsten Bild*, *bir sonraki resimde de* ‘in the next picture’; *man sieht* ‘one sees’, *biz görmüyoruz, çeviriyoruz biz de görüyoruz* ‘we don’t see, we turn the page, we see’; or *im Hintergrund* ‘in the background’. In these cases the temporal organization of discourse is only locally replaced by a spatial frame.

The major difference between adults and 9-year-olds lies in (a) the degree of **cohesiveness** between specific events or states and (b) the degree of **elaborateness** at particular points in the chain of events. Thematic, temporal, and causal cohesion is expressed by grammatical means — subordination, ellipsis, anaphora, complementization, nominalization, relativization; by a wide variety of lexical devices — modal adverbs and particles, temporal adverbials, prefixed verbs, locative phrases; and by rhetorical strategies — questions, repetitions. There is a remarkable increase in the linguistic inventory and particularly in the flexibility of its deployment — evidently a precondition for achieving mature discourse competence.

Elaboration with regard to content continues along the lines already described for the 9-year-olds: background information about the situation is introduced; many utterances relate to internal states, intentions, and emotional reactions of the protagonists; and there are retrospective and prospective contractions of events which serve a structuring function in discourse, as in (57) and (58), from a German and a Turkish adult.

(57) *Das nächste Unheil zieht schon heran in Form eines Bienenschwarms.*

‘The next disaster already approaches in the shape of a beehive.’ [G20c]

(58) *Baykuş rahatsız olmuş bir tavırla Osmanın üzerinde kanat çırpmaya başladı. Gerek köstebek, gerek baykuş, gerekse arılar rahatsız edilmekten pek hoşnut değil gibi gözüküyorlardı.*

‘The owl started flapping its wings over Osman in a disturbed manner. The gopher, and the owl, and the bees seemed not very happy about having been disturbed.’ [T20e]

While the first example is an instance of **prospection** — looking ahead to forthcoming events — the second is a **retrospective** summary of a prior situation, colorfully formulated in terms of the emotional reactions of the protagonists involved. This example is also a good illustration of how Turkish

adults make abundant use of modal constructions in introducing the narrator's perspective.

Development in both the domains of cohesiveness and elaboration entails a change in the contribution of backgrounded as against foregrounded material. Compared with the 9-year-olds, development has taken place in both the quantity and textual integration of background information. The creation of thematic integration at the global level, then, constitutes a crucial difference between the older children and adults. These developments converge with changes in type and function of the temporal relation of simultaneity.

B. Simultaneity in discourse: Adults

From the point of view of the three levels of simultaneity distinguished in Section 2, the adult narratives yield much the same picture as the 9-year-olds. The only difference is that where adults shift to the axis of perception, they do not simply use a deictic adverb like one meaning 'here', but an explicit formulation such as *man sieht* 'one sees'.

The adult texts demonstrate changes in the types of simultaneity expressed, and use of a full range of possible distinctions. German adults differentiate between states and events in *sim*-relations (*als* 'when' versus *während* 'while'); they use different adverbs to refer to simultaneity of pairs of events/states compared with simultaneity of chunks of events/states (*gleichzeitig*, *mittlerweile* 'at the same time, in the meantime'); and they give expression to a concept which combines simultaneity and a causal relation, by means of *dabei* 'in so doing, thereby', as in (59).

(59) *und stürzt zu Boden;*

'and crashes to the ground;'

dabei zerbricht das Glas

'in doing this the jar breaks' [G20a]

Most of these developments in the adult German data are ones we noted in Turkish as well: the distinction between *V+ince* / *V+ken*, *V+diğinde* 'when / while' is found in 5-year-old texts, with *V+erek* 'by V-ing' for combining simultaneity with causality being used by some 9-year-olds, although with errors. The only corresponding advance in the Turkish adults is the differentiation between simultaneity of **pairs** of events/states (by means of *V+diğinde*, *V+diği zaman*, *V+ken* 'at V-ing' 'at time of V-ing', 'while') and simultaneity of **chunks** of events/states (by means of *bu/o sırada*, *bu/o arada*, *öte yandan* 'meanwhile', 'in the meantime', 'on the other side').

Within the hierarchical structure of discourse, two basic functions of simultaneity emerge as distinguished in the adult texts. One is the relation of

simultaneity between one or more events in the foreground. As claimed in Section 2.4.1, parallel activities of two or more protagonists must be marked explicitly for their temporal relation in narrative discourse. The actions performed by the boy and the dog in the pictures are presented as simultaneous chunks of foregrounded events by speakers. This is in fact the context in which most of the adverbial expressions for simultaneity occur, as in the Turkish example in (60).

(60) *köpek de hala arı kovanına bakıyormuş*

'and the dog was still looking at the beehive'

ve arı kovanını düşürmüş

'and made the beehive fall'

bu sırada çocuk da ağaçların kovuklarına bakıyormuş

'meanwhile the boy was looking into the holes of the trees'

tam o sırada ağaç kovuğunun içinden bir baykuş çıkmış

'right at that moment an owl came out of the hole'

çocuk korkup aşağı düşürken

'the boy (was.)scared [V+ip] (and) while falling [V+ken]'

köpek de hızla yanından geçmiş

the dog went by him fast' [T20a]

Adverbials such as *bu sırada* 'in the meantime' in clause-initial position signal a topic-shift to another protagonist, and introduce a foreground event/event sequence as simultaneous with a previous sequence of events. This results in what can be called a "stepwise" creation of text, since the adverbial which refers to a time interval presents the two situations as partially overlapping and therefore as moving forward. Thus the type of simultaneity expressed by these forms serves the double function of creating temporal unity between events while ensuring sequential progress on the timeline.

Most of the typical background material (unbounded states) is not explicitly temporally related to the foregrounded event-line. Although the adults produce more of these kind of background clauses, there is no change in the form of how they present these structures, as shown in the two extended examples, in German in (61) and in Turkish in (62).

(61) *dort sitzen nun beide in dem seichten Wasser*

'there they both sit in the shallow water'

beide brauchen nicht zu schwimmen

'both don't have to [=neither must] swim'

das Wasser ist nicht sehr tief

'the water is not very deep'

und der Hund sitzt auf'm Kopf von Tom

'and the dog sits on Tom's head'

und beide gucken immer noch nach dem Frosch

'and both still look for the frog'

und versuchen ihn verzweifelt zu finden

'and desperately try to find him' [G20f]

(62) *Ali'yle Karabaş cumburlop kendilerini suyun içinde bulmuşlar*

'Ali and Karabas, splash, found themselves in the water'

bereket versin, su derin değilmiş

'fortunately, the water wasn't deep'

çünkü Ali yüzme de bilmiyormuş

'because Ali didn't know how to swim'

Ali suyun içinde oturmuş

'Ali sat in the water'

su ancak beline kadar geliyormuş

'the water came up only to his waist'

oturduğunda

'when (he).sat' [V+diğinde] [T20i]

Adults exhibit a more sophisticated pattern with respect to background events than 9-year-olds. They provide discourse relief by means of subordination, and so attribute different "weight" to simultaneously ongoing activities. This is a form of presenting the events from a specific perspective not found in the texts of the German children, although already observed in simpler forms in those of the Turkish 9-year-olds. (63) and (64) give examples from an adult German and a Turkish text.

(63) *in Windeseile zieht sich Tom an*

'Tom dresses in a flash'

während der Hund nochmal in dem Glas schnuppert

'while the dog sniffs again in the jar' [G20f]

(64) *bu sırada Bobi de kafasındaki kavanozdan kurtulmaya çalışıyordu*

'meanwhile Bobi was trying to get rid of the jar on his head'

çocuk bağırmaya devam ederken

'while the boy (was).continuing [V+ken] to call'

birden kafasındaki kavanozla birlikte Bobinin düştüğünü gördü

suddenly he saw that Bobi fell with the jar on its head' [T20e]

Mature use of the *sim*-relation in the elaboration of discourse structure thus requires a variety of devices not to be found in the children's stories. Yet once again, the main difference between the Turkish 9-year-olds and adults relates to degree of text cohesion. Devices such as V+ince, V+ken, V+diğinde, V+diği zaman are used by adults not only to relate adjacent utterances but also to pick up information introduced several clauses earlier and re-present it as background for a new situation. This gives rise to a continuous process of tying up nodes of information into a single thread of discourse.

C. Expression of simultaneity: Adults

GERMAN

The German adults all use adverbs or prepositional phrases as summarized in Table 1 (Group Ib) for explicit indication of simultaneity relations. This group reveals the most marked change compared to the younger speakers. They show an increase in both types and tokens of conjunctions, and simultaneity is also expressed by lexically specific terms such as *er nutzt die Gelegenheit* 'he uses the opportunity', *zugucken* 'to watch', or *nebenherlaufen* 'to run beside'.

The adults do not use the temporal connector *und dann* 'and then' as frequently as the 9-year-olds, and where they do, it is mostly in clause-internal position. That is, the 9-year-olds' strategy of marking the distinction between simultaneity and sequentiality by the systematic use of 'and then' is abandoned by the adults. They leave the temporal relation implicit where it can be inferred and use the explicit devices for cases which are ambiguous, as well as for purposes of grounding and introducing subjective perspectives.

TURKISH

All of the Turkish adults make use of the various explicit markers of simultaneity discussed so far. Their repertoire is enriched by specific indicators of the *sim*-relation, including lexical items (adverbs and verbs) as well as casemarking on nominalized sentences for aspectual distinctions that play a role in grounding, as in (65).

(65) *çocuk odasında kavanoz içine koyduğu kurbağasıyla ilgilenmektedir*

'the boy is.in.the.course.of.attending [V+mektedir] to his frog which he put in a jar'

köpeği de yine kurbağaya bakmaktadır

'his dog too is.in.the.course.of.looking [V+mektedir] at the frog' [T20b]

Adults use locative phrases for tight packaging of simultaneous events or states, as in (66) for example.

(66) *çocuk geyiğin kafasında, köpek de onların yanı koşmaya başlamışlar*

'the boy on the deer's head and the dog by their side, they started running' [T20a]

As with the German adults, there is a decrease in the use of the sequential connector *sonra* 'then' in clause-initial position. Instead, as already noted, there is an increase in use of adverbs of simultaneity which allow for stepwise connections, and of more specific adverbs which set R, such as *birgün* 'one day', *geceleyin* 'at night'. Adverbial clauses formed by *-diği zaman* 'at the time of V-ing' drop out entirely; instead there is an increase in the use of adverbial clauses formed by *V+diği için* 'because of V-ing' which overtly mark causality but imply simultaneity in the given context.

In sum, adults in both German and Turkish achieve relative gradations in grounding distinctions by manipulating a variety of subordinate constructions, adverbials, and tense-aspect shifts.

5.2. Data Analysis for the Other Languages

This section briefly reviews developments in the expression of simultaneity and its role in narrative organization in the Spanish, Hebrew, and English data.

5.2.1. Spanish

A. Discourse structure: Spanish

In terms of discourse structure, a similar pattern of development is observable from a descriptive, piece-by-piece presentation of information by the 3-, 4-, and 5-year-olds, to a cohesively connected piece of text by the 9-year-olds and adults. The preschool children make heavy use of coordination with *y* 'and'. Three-year-olds use the spatial deictic locative marker *aquí* 'here' as a means of indicating sequential points of attention in the pictures. At age 4, this tends to be accompanied by a temporal marker of sequentiality which suggests that "the child is anchoring to locative deixis while trying out other markers of sequentiality" (Sebastián, 1989), as in example (67).

(67) *Y aquí luego después se escondió debajo de aquí.*

'And here then afterwards he hid himself under here.' [S4e-4;6]

The sequentiality markers *luego* 'then, later', *entonces* 'then', and *después* 'after(wards)' are overused by 3- and 4-year-olds, sometimes marking each sequential clause, similar to the overuse of *und dann* 'and then' in

German and *ondan sonra* 'after that, then' in Turkish. Coordination and sequential markers decrease with age while subordinate markers rise. Temporal expressions such as *por la noche* 'at night', *por la mañana* 'in the morning', which serve to establish R on the temporal axis of discourse, are not used by preschoolers, but they are systematically used by 9-year-olds and adults.

B. Simultaneity in discourse: Spanish

The use of the first explicit marker of simultaneity for backgrounding, *cuando* 'when', appears at age 4 and becomes widespread at age 5, as in (68).

(68) *Y cuando estaban en el tronco encontraron a los dos ranas.*

'And when they were on the trunk they found the two frogs.' [S4g-4;7]

The first instances of inversion of order of mention of events for foregrounding two events in immediate succession appear in the 5-year-olds, as in (69).

(69) *Y coge una bota cuando se levanta.*

'And he picks up a boot when he gets up.' [S5c-5;4]

Clauses with *mientras* 'while', the explicit marker of simultaneity relating two clauses with different protagonists, appear at age 9 but again, this never serves to incorporate more than two events in broader episodes. Adults, who provide more elaborate chains of interlocked events by different participants, mark these adverbially by *mientras tanto* 'meanwhile' or *entre tanto* 'in the meantime' rather than by subordination with *mientras*, as in (70).

(70) *Mientras tanto el niño se ha metido dentro de un árbol grande, que tiene un agujero, del que sale un buho.*

'Meanwhile the boy has gotten into a big tree, that has a hole, from which an owl comes out' [S20j]

In other words, adults use the connectives *mientras tanto* and *entre tanto* to combine clauses that correspond to episodes where "the temporal nexus...would be the beginning of each of these conjoined superordinate events, allowing us to consider this a mechanism for marking episode boundaries which is not used by any of the children" (Sebastián, 1989).

Particularly noteworthy developments in how simultaneity is expressed and deployed in narrative organization are realized through the tense-aspect system of Spanish, as discussed below.

C. Expression of simultaneity: Spanish

The earliest explicit devices used to mark simultaneity in Spanish are adverbial clauses. The temporal *cuando* 'when', the only connective used by 3- and 4-year-olds, indicates the superposition of the beginning of the second event with the end of the first, and denotes (1) simultaneity between the verbs

of matrix and subordinate clauses, or (2) immediate anteriority, as in (71).

(71) *Y cuando se tirado al agua encontró una rana.*

'And when (he was) thrown to the water he found a frog.' [S3c-3;7]

Interestingly, the semantics of this form corresponds exactly to that of the Turkish converb *V+ince*, one of the two explicit devices used by 3-year-olds.

Another construction that has the same temporal value as *cuando* and marks simultaneity is the preposition *al* + INF. It first appears in 5-year-old texts, as shown in (72).

(72) *Al subirse cayó el mieleno.*

'On climbing.up [= dog] the beehive fell.' [S5b-5;2]

Mientras 'while', used to narrate two clauses with different protagonists, appears in 9-year-old texts, as in example (73).

(73) *Sale el buho y lo tira mientras las abejas le persiguen a su perro.*

'The owl comes out and throws him while the bees chase his dog.' [S9a-9;1]

Causal adverbial and complement clauses appear late. Relative clauses appear earlier but also show a sharp increase at 9 years. Those which can imply simultaneity are continuative relative clauses that function to advance the narrative action and which tend to have verbs of appearance in the main clause (see Chapter IVB). These begin to be used at age 5, as in (74).

(74) *Salió un loro que le tiró al niño.*

'(There) came out a parrot that threw the boy.' [S5a-5;1]

As discussed in Chapter IIIc, Spanish is very rich in tense-aspect distinctions, and young children learn early on to exploit these possibilities in their narratives. Although 3- and 4-year-olds have difficulty in adhering to an anchor tense, certain patterns can be detected. The 3-year-olds prefer the present — functioning as a form for picture description; the 4-year-olds and the 5-year-olds — the past; and the 9-year-olds again favor the present — this time functioning as a genuinely narrative tense. No children use the imperfective as an anchor, apparently appreciating its role for introducing secondary events. The 3- and 4-year-olds show unsystematic contrasts of present, past, past imperfect, and present perfect, with no clear narrative, grammatical, or semantic motivation.

The commonest shift from present tense is to the present perfect. For the 3- and 4-year-olds, the present perfect functions to indicate a visible action or endstate depicted in the pictures, e.g.:

(75) *Aquí se ha subido*

'Here he has climbed' [S3a-3;6]

This use of the present perfect to mark resultant state or perfective aspect makes it functional in the context of simultaneity of perception, and is in line with what was observed for Turkish and German. No 3-year-old texts contain the past perfect.

Another type of aspectual shift, one frequently observed in the 3-year-old data, is to the progressive, which encompasses the notions of 'duration' and 'progress' in Spanish. It is in fact the earliest means to mark simultaneity, used in the context of describing pictures with two participants, as done in (76).

(76) *Y luego ve a una rana y el niño está llorando.*

'And then (the dog) sees a frog and the boy is crying.' [S3a-3;6]

Although the past imperfective and past progressive appear interchangeable in many instances in Spanish usage, 3-year olds make a motivated contrast between them when they juxtapose two simultaneous events that are both durative, as in the following.

(77) *El niño miraba en la bota y el perro estaba comiendo los zapatos.*

'The boy looked:IPFV in the boot and the dog was eating:PROG the shoes.' [S3l-3;8]

Young children's use of imperfective — with or without progressive — indicates durative events or states, or expresses attributions of desire or intention to a participant. They do **not** use them to background a secondary event. Contrasts of progressive and nonprogressive are commonest among the 4-year-olds, where the progressive marks the duration of a process, as in (78).

(78) *Aquí se sentó en el agua y el perro subiéndose en su cabeza.*

'And here he sat:down:PFV in the water and the dog climbing on his head.' [S4a-4;7]

At age 5 years, the present perfect is additionally used in a retrospective sense, expressing information inferred from a previous situation, as below.

(79) *Y cuando se despierta el niño se encuentra que se ha ido.*

'And when the boy wakes up he finds that it [=frog] has gone.' [S5c-5;4]

The contrastive use of the imperfective and perfective is notably coherent from the beginning. The perfective is used for completed actions and the imperfective to indicate states (existence, location, desire) or durative events that are presented as secondary, background situations.

Children of all ages contrast past imperfective and past progressive when juxtaposing a state of existence with an activity in progress, for example as in (80).

(80) *El bichejo estaba ahí y el niño estaba buscando en ese árbol.*

'The rat was:IPFV there and the boy was searching:PROG in that tree.'
[S5g-5;8]

The 4- and 5-year-olds abandon the 3-year-old strategy of contrasting these forms to indicate simultaneity of two durative activities. Instead, they use the past progressive for both situations, as in the next example.

(81) *El niño estaba gritando y el perro estaba intentando coger una piña.*

'The boy was shouting and the dog was trying to catch a pine cone.'
[S5a-5;1]

The 9-year-olds use the aspectual and temporal distinctions of their language totally systematically. They use the present perfect for indicating past action, the results of which are relevant to the present moment, as in (82).

(82) *Pero el perro está haciendo ruido y el niño le ha dicho que se calle.*

'But the dog is making noise and the boy has told him to be quiet.'
[S9c-9;3]

The 9-year-old Spanish narrators also shift to the past perfect from the present for marking current relevance, an alternation which is never made by the younger children. They use the progressive only occasionally, like the adults, only for stage setting at the beginning, or for denoting an durative activity maintained throughout the story (such as 'search', 'call', 'look'). All 9-year-olds who use the past as anchor tense, use the perfective to present successive foreground events. To mark simultaneity between a background and a foreground event, they use the imperfective together with *mientras* 'while' in the background clause.

In sum, Spanish children from age 3 years use all the tense-aspect forms in their narrations, except for past perfect and past perfective progressive. By age 5 years, tense oscillation ends, and there is an increase in perfective past narratives. Sebastián (1989) takes this to be the developmental point at which the perfective comes to be used systematically for presentation of foreground events, and "the age at which narrative capacity begins, as based on a use of aspectual forms in the past that have different discursive functions." As noted in Chapter IIIC, the complexity of the Spanish verbal system does not impede but rather seems to stimulate the child to acquire aspectual and temporal markers.

Aspectual verbs, in contrast, first appear only at 5 years. This supports our initial hypothesis that markers of aspect outside of verbal morphology will be late to develop, given the richness of the inflectional system. The majority of the aspectual verbs observed are inchoatives such as *empezar* 'start' and verbs denoting temporal extent such as *seguir* 'continue'.

5.2.2. Hebrew

A. Discourse structure: Hebrew

Hebrew-speaking children also proceed from a descriptive to a narrative organization. Three-year-olds cannot sustain talk about several events and their narrative attempts typically give way to picture descriptions or to digressions. Just as in the other languages, 3-year-old Hebrew speakers demonstrate overuse of *ve* 'and' and the spatial deictics *po*, *kan* 'here'. Some also use *ve (az)* 'and (then)' as the required way of marking the next picture, fact, or object, so that its absence implies either a simultaneous or causal relation. Nine-year-olds, on the other hand, use adverbials as explicit markers of simultaneity. Only adults exploit the full potential of their language and their discourse organizational skills in creating their narrative texts.

B. Simultaneity in discourse: Hebrew

Similar changes in the discourse organizational role of the notion of simultaneity are observed in the Hebrew texts. Three-year-olds, not making a distinction between simultaneity and sequence, or between co-occurrence and recurrence (Berman, 1986b), relate situations on the basis of "simultaneity of perception." They juxtapose two events with only a participant switch but no other change, or repeat the same verb with a modal such as 'want' or 'try'. A pair of utterances so juxtaposed may express simultaneity between a state and an event, where the state is usually one of existence, as in example (83).

(83) *Ve cfardea po lemata, ve cfarde'im po lema'ala, ve cfarde'im she lema'ala hem holxim al shuliyot.*

'And (there's) a frog here on top, and (there are) frogs here below, and the frogs that are below they walk on puddles.' [H3e-3;7]

This juxtaposition may also be of two events which are unrelated in any other way than being simultaneously available to perception, as in (84).

(84) *Ve hakelev nixnas letox hacincenet ve hayeled sam et hana'al shelo al harosh.*

'And the dog goes inside the jar and the boy puts his boot on his head.'
[H3a-3;0]

In these examples, there is no sense that one situation is more important or salient than the other. Thus, simultaneity has, as yet, no grounding function in discourse.

Older children also do no more than juxtapose simultaneous situations, but with an increase in syntactic interrelating of subordinate versus main clauses to effect some kind of grounding. Adults use paired utterances expressing simultaneity of the closely related activities of a single participant (i.e., conjoining predicates with the same subject — marked on Hebrew verbs

by number and gender inflections) as in (85).

(85) *Ve hayeled mamshix baxipusim axarey hacfardea kshe hu moce et acmo na' uc al hakarnayim shel ayil.*

'And the boy continues with his search for the frog when he finds himself impaled on the antlers of a deer.' [H20I]

Hebrew school-age children also use parallelism to achieve stylistic ends as in (86).

(86) *Dani xipes betox hamagaf, Yoye xipes betox hadli shel hazxuxit.*

'Danny searched inside the boot, Yoye [=dog] searched inside the glass jar.' [20g]

Finally, adults embed chunks of simultaneous events within sequential chains, or intersperse two or three clause chains of sequential events in between long units related as simultaneous. The major functions served by simultaneity in adult narratives are discourse-motivated, such as elaborating on events, presenting and switching perspective, or summarizing.

Tense shifting is used both for narrative chunking and for more local switch of perspective across simultaneous situations. Switches from past to present, in adults, signify punctual events in opposition to ongoing durative activities, as in example (87).

(87) *Eyze yanshuf yaca lo mehaxor ba'ec ve hipil oto ve hakelev - bediyuk hadvorim rodfof axarav. Shneyhem borxim gam mehayanshuf ve gam mehadvorim.*

'Some owl came out at him from the hole in the tree and made him fall and the dog - just at that moment the bees chase after him. The two of them flee both from the owl and also from the bees.' [H20a]

C. Expression of simultaneity: Hebrew

The means of expressing simultaneity in Hebrew are (a) overt lexical forms and (b) syntactic devices which imply simultaneity in context. The first set consists of sentence-modifying adverbials — mainly *benatayim* 'meanwhile'; conjunctions like *kshe* 'when' used in subordination or with verbless (copula) clauses — e.g., *kshe ha-dvorim axarav* 'when the-bees (are) after him'; and explicit simultaneity markers combined with a nominalized verb, e.g., *tox kedey haxipusim* 'in the course of the searches', *bish'at hashena* 'at the hour of sleep'. The developmental path, well observed by now, is from nonmarking, to use of basic marking devices, to varied marking — only by adults.

The texts of 3- and 4-year-olds have very few explicit markers of simultaneity: one instance of *benatayim* 'meanwhile' used (infelicitously or at least vaguely) by a 3-year-old and two instances of *kshe* 'when' used by 4-year-

olds, as in (88).

(88) *Hu benatayim holex ve hu mexapes.*

'He [=dog] meanwhile walks and he [=boy] looks.' [H3c-3;5]

The use of verbless clauses without an overt marker of simultaneity is relatively early, and is observed in 4- and 5-year-olds, as in (89).

(89) *Hayeled hithapex lashlulit ve hakelev al harosh shelo.*

'The boy fell upside down in the puddle and the dog (is) on his head.' [H5a-5;0]

The 3- and 4-year-old children use these devices for expressing state-event and event-event relations in an unsystematic fashion, while starting with the 5-year-olds, the devices are linked more systematically with situation types.

At age 5, there is an increase in the use of *benatayim* 'meanwhile' (four instances) while *kshe* 'when' is still rather rare (two instances). While closely related state-event relations are described by *kshe*, event-event relations involving two participants are introduced by *benatayim*, a pattern which becomes particularly apparent in the 7- and 9-year-old texts. The preschool group occasionally use complement and relative clauses to juxtapose events and states.

A significant increase in the use of varied markers of simultaneity is observed at 7 years. Both the frequency of the devices increase (*kshe* = 13; *benatayim* = 5), and new means begin to be used, including nominalizations and verbless clauses with an explicit marker of simultaneity. Nine-year-olds begin to use adverbs such as *be'oto yom* 'on that same day' in addition to 'when' and 'meanwhile' (*kshe* = 13; *benatayim* = 10). In sum, both 7- and 9-year-old children use subordination and adverbials, and show full command of sequence of tenses with simultaneous pairing of two clauses. Only the adults use lexical elements other than the standard *benatayim* and *kshe* and display use of more explicit, higher register terms for 'while', such as *ba-besha'a-she* 'at the very time that', *agav* 'in the course of'. In Hebrew adult texts, adverbial clauses like these function mainly in "chunking," while complement and relative clauses are preferred for pairing of simultaneous events. In fact, relative clauses change function by age; while children use them for event-state relations, adults use them for event-event relations, as in (90).

(90) *Ve az yoce xoled she kcat mavhil oto.*

'And then comes out a beaver that startles him somewhat.' [H20d]

Adult narrations show full use of both explicit and implicit devices for the expression of simultaneity, as in the following example of a high-register simultaneity preposition combined with an abstract verb-derived nominal.

(91) *Bish' at hashena hacfardea hexlita lacet lesiyur.*

'At the hour of sleep(ing) the frog decided to go out on an expedition.'
[H20j]

Hebrew has no aspect marking of perfectivity or of durative/progressive, and is therefore more similar to German than to Turkish, Spanish, or English. Only older speakers use tense shifting or other devices, such as nominalizations, for background attendant circumstances and descriptive states.²⁰

In sum, in Hebrew, as in the other languages we have surveyed, only adult usage deploys the full range of devices — many of which 9-year-olds certainly "have" in the sense of knowing what their referential content is, more or less. And with adults, this deployment shows a flexibility within and across narrators not to be found among even the 9-year-old children.

5.2.3. English

A. Discourse structure: English

The narrations of the English-speaking subjects are very similar to those of the other languages in terms of discourse structure. Children of 3 and 4 years proceed in a descriptive and conversational style, producing deictically anchored utterances prefaced by spatial deictics *here*, *there* to refer to events/entities perceived in the pictures, or they use *and then* with a discourse function. Around the age of 5, children start maintaining an anchor tense, either the past or the present and there is an increase in sequentiality markers (Renner, 1989) — both suggesting that a temporal organization is replacing the earlier perceptual one. English 9-year-olds narrate more like adults than the preschoolers, but just like the 9-year-olds in the other languages, they do not show the same kind of elaboration of style, variety of linguistic devices, or flexibility in their use as fully mature speakers.

B. Simultaneity in discourse: English

An early means for indicating simultaneity in English is the progressive aspect marker *-ing*, occurring with physical event and perception verbs in the 3-, 4-, and 5-year-old texts. In some of the 9-year-old and most adult narratives, *-ing* occurs with mental state verbs such as *think* and *wonder*, reflecting the same types of changes in discourse abilities observed in the other

²⁰ Berman (1986b) suggests that there are contexts in the 3-year-old texts where modal verbs like 'want' are used as precursors of aspect (similar to the use of 'try' in English to indicate action in progress), as in: 'Here he wants to go out and here he goes out' [H3c-3;5], or 'The dog wanted to go to the tree and he went' [H3j-3;9]. Similarly, 'also' appears to function as a precursor of endstate devices, similarly to what was noted for German *auch*. (See Chapter IIID).

languages. This way of indicating simultaneity by aspect marking does not as yet reflect any grounding distinctions in most of the 3- and 4-year-old texts; these make wide use of the spatial terms *here* and *there*, suggesting that the *-ing* form needs to be interpreted as deictically anchored for the younger children.

Inflectional marking of perfect aspect for expressing simultaneity between an earlier but currently relevant situation with a present one, is not exploited by (American) English-speaking children before about age 5.²¹ However, younger subjects do occasionally use lexical aspect markers (e.g. *still*). A few of the younger children also mark simultaneity between pairs of clauses by means of the subordinating conjunctions *when* and *because*, resulting in local interclause relations. Using aspect marking for discourse organizational purposes appears to decline at age 9 years, while other strategies for indicating grounding distinctions take over in the older children's texts, as well as those of the adults.

C. Expression of simultaneity: English

The first explicit markers of simultaneity in English, observed at age 3 years, are the subordinating conjunctions *when* (used by two children) and *while* (used by one child). Frequency of occurrence, as well as number of children using these forms, increase at age 4, as in examples (92) and (93).

(92) *Look - when he's sleeping, and his frog getting out.* [E3a-3;1]

The boy and the dog slept while the frog quietly got out of the jar.
[E4b-4;0]

The subordinator *when* is very common in the 5-year-old texts (used 14 times by 7 children), leveling off in the 9-year-old and adult texts (10 times by six speakers in each group). The 9-year-old example below illustrates the use of *when*, and the adult example shows the use of a complement clause for the same scene.

(93) *Then, when the boy wakes up, he finds that the frog is gone.* [E9b-9;3]

In the morning the boy and the dog awake to find that the frog is gone.
[E20f]

In contrast, *while* is used less by the 5- and 9-year-olds but increasingly by the adults (24 occurrences in seven adult texts). The conjunction *as* occurs only in the adult data, while PREPOSITION *V-ing* is rare across the sample.

²¹ The present perfect is more frequent, and is acquired earlier, in British English. Slobin's (p.c.) preliminary examination of frog stories gathered in England by Elena Lieven suggests that the development of narrative uses of this form is earlier, and quite different, in British English. See, further, Chapter IIIA.

Interestingly, the adverb *meanwhile* occurs only once in one adult text, contrary to what has been observed in the other languages.

As for morphological devices, the earliest — used by nearly all 3-year-olds (46/10) and 4-year-olds, although with lower frequency (24/9) — is the progressive aspect marker *-ing*. This appears to be a strong and predominant strategy for indicating simultaneity, since it continues with high frequency in the texts of the 5-year-olds, 9-year-olds, and adults, even though the latter also use a variety of other devices. Adverbial participles with *-ing*, on the other hand, are mainly used by adults, with only a few instances at age 9, and one instance in a 3-year-old text. Compare the 5-year-old and adult examples in (94) and (95).

(94) *And the boy's looking down the hole and calling in the frog and the dog is looking at the bees.* [E5k-5;11]

(95) *So, as the boy is looking in the hole for his frog, the dog seems interested in this beehive with all the bees flying out.* [E20e]

It could be that in English, it is the opposition between progressive and simple present which triggers the distinction between event time/reference time and time of perception as the necessary basis for developing a hierarchical narrative structure.

Other means used for implying simultaneity in English are the adverb *too* — used rather less than the words for 'also' in German, Turkish, or Hebrew — and lexical aspect markers such as *still*, becoming common in the 9-year-old and adult texts and, occasionally, the aspectual verb *keep on*.

As in the case of German and Turkish, there are certain contexts where simultaneity is implied although not marked, as in pairs of clauses with a verb of perception, in parallel constructions, or in clauses with a durative meaning followed by the adverb *suddenly*. Not surprisingly, all these different means are used in combination mainly by adults, in constructing texts full of elaborations, retrospective or prospective summaries, evaluations, and digressions.

American English speakers thus appear to rely heavily on the use of subordination and inflectional aspect, particularly the progressive and less so the perfect, for the expression of simultaneity in discourse. In contrast to what we observed in the other languages, there is almost no use of adverbs such as *meanwhile*, *in the meantime* connecting independent clauses and functional in weaving chunks of sequential events taking place concurrently.

6. CONCLUSION

Taking the perspective of the development of language forms and language functions, this chapter has considered two developmental domains as interrelated through the concept of simultaneity: the development of

discourse competence, and of expressive devices and their use. We have observed that the five language groups are very similar in the development of discourse structure and the changing role of simultaneity in discourse. Although even the youngest children at times produce coherent pieces of discourse, they still have a long way to go before reaching adultlike proficiency in producing what can truly be called a "narrative."²²

The general developmental trend from 3-year-olds to adults involves a change in the type of discourse, from picture-to-picture description to narration. This is correlated with a change in the type of cohesion established in the texts from local (clause-per-clause, pairs of clauses) to global organization. This in turn implies the development of the ability to conceptualize a number of single states and events as parts of one complex overall event on the basis of their temporal relations. The 3- and 4-year-olds' use of spatial deictics ('here/there') together with markers of sequentiality ('and then') strongly suggests that the shift is from a spatio-perceptually based to an abstract-representational conceptualization of time. We have seen that as soon as children are able to organize their speech along a narrative thread, they can move from a mere juxtaposition of equally weighted pieces of information to hierarchical structures in discourse. The age at which this is evidenced in our study is 5 years, when children gradually start moving towards the adult norm of elaborating hierarchical structures in discourse by grounding, chunking, giving perspective, and referring backwards or forwards.

During this process, the function of simultaneity changes as well. At the early stage, simultaneity of perception (for each picture frame) governs the verbalization, and a deictic orientation provides the anchor for the different pieces of information. As the children move on to developing a temporal structure in discourse, they learn to distinguish the different functions of simultaneity with respect to foregrounding and backgrounding. The first steps in this direction are characterized by a struggle for, or a submission to, the expressive devices making these distinctions. That is, the course and speed of development in this area depend on the verbal means available in the language. The more elaborate the narrations become, the more *sim*-clauses of all different types they will include, adding background information to the events presented in the pictures. Thus, gradually, simultaneity is used to

²² It is interesting to compare the picture-description data to story-telling data from the same age groups (see Chapter IIA). It turns out that 3- and 4-year-olds cannot produce longer pieces of discourse without the help of scaffolding questions from the interviewer. Children at this age are not able to construct or sustain an overall conceptual representation of a story. In a way, the pictures seem to have the same supporting function for the child as do the questions of the interlocutor (see Hoppe-Graff, Scholer, & Schell, 1981).

effect the building up of complexly integrated scenes.

As for expressive devices, we find a stepwise development of forms reflecting the complexity of types and functions of simultaneity. In this process, new forms are acquired, the functions of existing forms change, and some forms lose their earlier functions altogether. For instance, subordinating devices that connect adjacent clauses and express simultaneity between contingent situations (temporal/causal) are acquired earlier than adverbs that connect independent clauses and relate independent sequences of cotemporal events. Or, while young children use subordinate constructions for describing pictures, from age 5 on, they use them as a mechanism for prospection and retrospection, showing that the function of a given form is dependent on the speaker's narrative capacity. And, across time, certain devices cease to serve a particular purpose, as was noted for the marking of simultaneity in our texts for such expressions as *o zaman* 'at that time' and *de* 'also' in Turkish, *auch* 'also' and *gerade* 'just' in German, verbless copula clauses with no explicit *sim*-marking in Hebrew, and certain aspectual contrasts in Spanish.

From a crosslinguistic perspective, the array of structural properties and the particular devices available in a given language — morphological markings and lexical expressions used in coordinate or subordinate constructions — emerge as another determining factor for acquisition. Our detailed analysis of the expression of simultaneity in German and Turkish has revealed that the temporal course of development is quite divergent for these two languages, and while development in Spanish and English is more similar to Turkish, that in Hebrew is more like German.

Spanish-, Turkish-, and English-speaking children differ from the German and Hebrew speakers mainly in the use of the tense/aspect/modality systems of their languages. Spanish is clearly very rich in the aspectual notions marked in its morphology, Turkish provides a different set of aspectual-modal distinctions, and English is closer to these two compared with German and Hebrew, which are relatively impoverished from this point of view. These differences in linguistic structure are reflected in the children's early use of tense switching. The switches found in the 3-year-old stories are aspectual rather than temporal in nature, and there are clear differences between the different language groups in the extent to which such shifts occur.

The major contrast is between Spanish-, Turkish-, and English-speaking preschoolers who have difficulty in adhering to an anchor tense, and German- and Hebrew-speaking children who show the tendency to stick to one tense from early on (from age 3 in German, from age 4 or 5 in Hebrew). This is not surprising, since German marks only the perfect, and Hebrew marks no other tense than simple present and past (and future) in the grammar. German children, therefore, appear to have a more precocious narrative style with regard

to temporal switches (see also Bamberg, 1987). In contrast, Spanish- and Turkish-speaking children face a variety of alternatives for marking distinctions of both tense and aspect, as well as modality, and this leads them into varied and rather unsystematic alternations in the early phases of their text construction. Sebastián (1989) has interpreted these as "try outs to discover the various available possibilities for indicating different functions in the complex verbal system of their languages." That is, if the language provides the options, children try to use them. Again, this need not be to their disadvantage, because it is quite likely that in the process of deciphering a complex set of verbal distinctions, they will concurrently be making some relevant conceptual distinctions. This is what is suggested by our findings for the use of more explicit devices marking simultaneity.

The first overt temporal marker relevant to simultaneity that occurs in the youngest children's texts in three of our languages corresponds to the notion 'when'. Interestingly, the German and Hebrew 3- to 4-year-olds do not use it at all. Typically a subordinating construction, 'when' is more frequent in the narratives of the Spanish (*cuando*), English (*when*) and Turkish (*V+ince*) children — even at age 5, when it is first used in Hebrew (*(k)she*) and German (*als*).

Subordinators that denote pure simultaneity, corresponding to 'while', are present at age 3 in English (*while*) and Turkish (*V+ken*), but not the other languages. The two forms both present a relation of simultaneity between an ongoing process and an event (with a strong indication of progress/durativity), suggesting that young children are sensitive to this distinction if the language marks it. Spanish does not observe this distinction, with *cuando* subsuming notions of both 'when' and 'while', like Hebrew *kshe*. German and Hebrew, which are alike in their low marking of verbal aspect, are thus different in this respect. In German, unlike Hebrew, the conceptual distinction between simultaneity of 'event and x' and 'state and x' is marked by different conjunctions (*als/während*). While in German only *als* appears at age 5, and *während* is not used until age 9, in Hebrew both *kshe* and the adverbial *benatayim* 'meanwhile' occur at age 5. However, we cannot attribute the late use of *während* by German children to the additional complexity posed by a finer conceptual distinction, since both Spanish and Turkish children start using subordinating devices which establish simultaneity of 'state and x' at age 5 (*al+INF* and *V+diğinde*). The delay in the use of German *während* may be due to the fact that this form is also used as a preposition with the genitive case (meaning 'during'), and therefore poses further complexity. Although German children do not appear to "compensate" with other linguistic means to express the simultaneity of 'state and x', the only aspectual distinction available in the language (perfect/nonperfect)

does serve this purpose. What is more surprising is the use of *benatayim* in Hebrew, because corresponding adverbs do not appear in the other languages before 9 years. The early appearance of this adverb in Hebrew might be explained by the fact that Hebrew has neither a conjunction corresponding to 'while' to mark simultaneity nor morphological aspect as a means of indicating 'stativity'.

It appears, then, that the marking of verbal aspect in Spanish, English, and Turkish "draws attention" to internal temporal relations, and therefore other means of expressing temporal relations, where they exist, are also deployed earlier. In German, where aspect marking is limited to the perfect, its role is compensatory rather than facilitative; and in Hebrew, total lack of verbal aspect leads to earlier use of a given lexical form from the right semantic domain but with much simpler functions. These observations suggest that explicit marking of aspectual distinctions in the morphology of a language contributes positively to or facilitates the child's differentiation of similar temporal notions embodied in the lexical forms of the language. In the absence of such a system, however, children still find means of communicating the kinds of semantic distinctions when they have discovered them conceptually.

Adverbials meaning 'meanwhile', 'in the meantime', on the other hand, are much more specific to adult use in all languages, with occasional instances observed at 9 years in Turkish (*bulo sırada*), Spanish (*mientras*), and German (*inzwischen*). It is interesting that *meanwhile* is used only once in English, in the adult data. Hebrew *benatayim*, as noted above, constitutes an exception to this pattern. It is not surprising that these adverbs, which function to connect independent sequences of events as simultaneous, are late to emerge, because their function is discourse-organizational as well as temporal. They are used to introduce foreground events and to mark beginnings of new episodes, in addition to designating reference time. As such, using them depends on the ability to manipulate pieces of discourse for hierarchical structuring of a narrative, an ability which appears around the age of 9. And recall that, across the languages, we found expression of simultaneity to be restricted to adjacent utterances even among most 9-year-olds.

Another interesting point is that forms which are explicitly temporal (i.e., function for setting reference time) are used earlier than forms that have purely discourse cohesive functions with their exact meanings dependent on inferences from context (e.g., *V+erek* in Turkish and *dabei* in German). It should, therefore, not be surprising that adverbs such as *meanwhile*, which have both functions, are acquired late.

Our five languages also differ with respect to the use of implicit devices for the expression of simultaneity. For instance, the use of nominalized forms

is much more frequent in Hebrew than in German, where, although they are possible, they are hardly ever used. Verbless copula clauses are quite frequent in young children's usage in Hebrew, whereas they appear late in Turkish, together with nominalizations. Causal and complement clauses appear late in Turkish, Spanish, and Hebrew, and do not function in the expression of simultaneity as they do for young German children, possibly because tense-aspect shifts serve this function in the first two of these languages, and relative clauses in the third.

In all five languages, aspectual verbs acquire a discourse function by age 5. Starting with age 9, inchoatives tend to mark the beginning of an episode rather than a single event and thus to introduce a situation as a global background. Continuatives, on the other hand, mark the extension of an activity that continues throughout a long stretch of the story and establish simultaneity at the thematic level (see Chapter IVD).

In summary, in all our languages, the first organization of situations according to the time axis of events and the beginnings of the development of narrative capacity are observed around the age of 5. The capacity to coordinate this axis with the temporal axis of discourse is found in the 9-year-olds. Data from 7-year-olds in all the languages would help us to better understand the nature of the changes that take place between 5 and 9 years of age. Nonetheless, clear differences emerge between our age groups, which we attributed to the structure of the language being acquired, and which appear at the earlier, preschool ages we investigated (age 3 to 5 years). We concluded that the lexical as well as the morphological options available in a given language appear to have a close bearing on the ability to attend to and conceptualize different types of temporal relations, in this case simultaneity. The effects of such an advantage on the overall ability to structure narratives, however, is not so clear. It is possible to note immediate effects at the local or linear level of narrative organization (e.g., grounding distinctions between paired clauses easily marked with subordinating devices), and to suggest increased flexibility or precocity at this level. The ability to simultaneously integrate such local units around an overall guiding theme, resulting in a hierarchically structured text, on the other hand, does not appear to benefit much from the availability of a rich set of devices in the language, as it emerges several years after such devices are already functional. In other words, one cannot say that the early acquisition of linguistic devices leads to a relatively earlier development of temporal structuring of discourse at the higher, global level.